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ABSTRACT

A study examined the extent of and the causes for student attrition in vocational education health careers programs in California. During the ten-month study, researchers utilized the following methods of data collection: analysis of data on enrollees, leavers, and completers that were gathered from California State Department of Education records for the years 1977 through 1980; administration of a questionnaire to 240 health careers teachers and administrators concerning their perceptions of 36 factors responsible for students' dropping out of health programs, administration of a telephone survey to 164 students reported to have dropped out of health programs, and site visits to high- and low-completing districts. Analysis of these data revealed that the following factors are associated with programs having high rates of completion: maintenance of a strong positive relationship between teachers and school counselors, provision of special attention to students with basic skills deficiencies, efforts to create a high degree of community awareness and participation, use of good teaching techniques, and provision of administrative support. Based on these findings, the researchers made a series of 15 recommendations geared to local and state administrators responsible for vocational health careers programs. (MN)

Identification of Causes for Attrition in Vocational Education Health Careers Programs

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Preface

This report was designed to identify the causes of attrition in vocational education health careers programs and to formulate strategies for reducing the attrition. The efforts of many people contributed to its preparation. Special thanks are extended to Barbara Goldman and Eina Dutton, Department of Applied Behavioral Sciences at the University of California, Davis, for their input into the design of the study. Thanks also go to Lee Goodman, Research Specialist in the Los Angeles Unified School District; G. Allan Holmes, Ernest Neasham, Paul Sciranka, and Gerald Kilbert, Consultants in Vocational Education at the State Department of Education, for carefully reading the draft manuscript and making many valuable suggestions. Sincere appreciation is expressed to Beverly Campbell and Peggy Olivier, Consultants in Vocational Education; Mary Weaver and Stan Greene, Consultants in Personal and Career Development; and James Allison, Program Manager for Industrial and Health Education, for serving as a task force to formulate strategies to help resolve the attrition problem. The help of these individuals is gratefully acknowledged, but the content of the report and its conclusions are primarily the work of the author, Barbara Nemko, Assistant Research Psychologist, Department of Applied Behavioral Sciences at the University of California, Davis.

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Executive Summary

A reported 50% attrition rate in vocational education health careers programs led the State Department of Education to fund a study to determine: (1) whether the reported attrition figure was accurate; (2) why students were dropping out of health careers programs; and (3) what could be done to increase the number of students completing these programs. The duration of the study was 10 months.

Methodology

In order to answer the three major questions of the study, three methods of data collection were implemented:

1. Data on enrollees, leavers, and completers were gathered from State Department of Education records for the years 1977-1980 and reorganized to reflect the performance of districts in each health careers curriculum area over the entire three-year period. The reported data were examined for accuracy, and a list was compiled of districts reporting unusually high (over 85%) or unusually low (under 35%) rates of completion consistently over the three years. Site visits were made to six of the eight high completing districts and five of the six low completing districts.

2. A questionnaire was sent to 240 health careers teachers and administrators to determine the degree to which they perceived each of 36 factors as being responsible for students dropping out of their program. In addition, a telephone survey of 164 students reported to have dropped out of health programs was conducted to supplement and cross-validate the responses of health careers personnel.

3. Site visits to high and low completing districts were utilized to determine differences between these programs and to isolate components that might be contributing to programs with high rates of completion.

Findings

Data Accuracy

The data were observed to have inaccuracies which can be grouped into three categories: (1) problems of agreement between enrollment and completions; (2) problems of definition; and (3) problems of unreported completions.

Problems of Agreement Between Enrollment and Completions

Some districts reported more completers than enrollees. This may be due to the inclusion of adult short-term students in the completer count, contrary to instructions, or it may be the inclusion of students enrolled in prior years.

Problems of Definition

Different State Department of Education publications have conflicting definitions for the same terms; e.g., enrollee, leaver, and completer. Districts interpret these terms in different ways, making it invalid to compare numbers reported by one program with numbers reported by another.

Problems of Unreported Completers

Large numbers of completers were not reported because the program in which they were enrolled required more than one school year to complete, and reporting was done in July. Students who had not completed their program by June 30 but who did complete over the summer were never reported. Other reasons completers are unreported include being enrolled in programs that begin in secondary school and end in adult school, with all enrollees counted as leavers as they move from one school to another, and negligence or carelessness on the part of persons filling out the forms.

Completions by Ethnicity

Summarizing the data across programs showed that ethnic groups are generally completing health occupations programs at the same rate, with the exception of Filipinos, who are completing at a higher rate. There were, however, some individual variations by program.

Staff Perceptions of Student Attrition

Staff involved in vocational education health careers programs perceived that the major factors relating to students dropping out are:

1. Excessive absence
2. Poor organization/study habits
3. Academic deficiencies
4. Family problems
5. Lack of motivation
6. Interference with job
7. Lack of guidance and counseling prior to enrollment
8. Excessive transportation time

Student Leaver Telephone Survey

Students reported leaving health careers programs prior to completion for the following reasons:

1. Personal illness
2. Family problems
3. Difficulty of program
4. Interference with job
5. Transportation problems
6. Loss of interest

The high degree of agreement between student and staff responses seemed to indicate that student-related factors, both academic and nonacademic, plus enrollment without adequate guidance and counseling were more responsible for

student attrition than were program inadequacies. One exception came from students at a self-paced, modular program, who expressed a need for more direct teacher instruction and the support that comes from sharing a learning experience with the class.

Site Visits

Discussions were held with teachers, administrators, counselors, and students in programs with unusually high and unusually low rates of completion. These discussions led to the identification of the following factors that appeared to be correlated with programs which had high completion rates.

Counseling and Interviewing

Teachers in programs with high rates of completion maintained a strong positive relationship with high school counselors, inviting them to social events that were part of the program, and keeping them informed as to program requirements. This appeared to reduce the tendency of counselors to use the vocational placement as a last resort for students who were unable to succeed in other programs. Additionally, teachers who interviewed potential students prior to enrollment helped students to assess their genuine interest in a health career and their ability to successfully complete the program's requirements before making the commitment.

Academic Deficiencies

In programs that reported high rates of completion, students with basic skills deficiencies received special attention by:

1. Hiring a classroom aide to work with students who had a deficiency in basic skills
2. Hiring a special education teacher to work with learning disabled or educationally handicapped students
3. Integrating basic skills instruction with program content
4. Teaching study skills
5. Utilizing the computer to teach remedial math
6. Utilizing the services of the resource specialist at the home high school

Community Awareness and Participation

Teachers in high completion programs made their programs visible in the community by:

1. Having students take the blood pressure of members of various service organizations; e.g., Lions Club, Rotary Club, and so forth
2. Staging disaster drills

3. Having students work with handicapped youngsters participating in the Special Olympics

4. Participating in VICA

5. Publishing a newsletter

6. Having students who passed the Radiation Protection Safety License Exam take X-rays (at no cost) for uninsured dental patients, through a special arrangement with local dentists

7. Having stories published in local newspapers, featuring health careers program activities

Instructional Factors

Good teaching techniques seemed to contribute to higher completion rates. Techniques used included:

1. Clearly stating acceptable standards of behavior, attendance, and work at the beginning of the course

2. Contacting students who were absent to determine the cause of the absence and encouraging the student to return to class as soon as possible

3. Rewarding outstanding attendance and work with certificates of excellence

4. Devising alternative forms of assessment for students with poor reading and writing skills

5. Evaluating students' progress, in writing, on a weekly basis

6. Contacting a student's home to report good work or an unusual improvement

7. Planning an annual awards dinner to honor outstanding students

Administrative Support

Teachers in some high completion programs credited their administrators with the following:

1. Granting science credits for completing health classes

2. Flexible scheduling of classes beyond the traditional school day

Recommendations

Local Level

Administrators at the local level may implement the following recommendations:

1. The ROC/P's should take the initiative in informing the high school counselors about program requirements, length, and the level of difficulty of health programs.

2. Consideration should be given to providing health careers instructors with the opportunity to speak to potential enrollees at the ROC/P site. Instructors should have the option of selecting students who appear to have a good chance of completing the program.

3. Basic skills instruction should be incorporated into the curriculum, where possible.

4. The readability of required textbooks should be checked and a more readable text made available, if necessary.

5. Consideration should be given to devoting class time to teaching time management, organization, and study skills.

6. Consideration should be given to using VEA funds to hire a classroom aide to assist low-achieving students.

7. The procedure for using VEA funds to hire a classroom aide should be made available to districts in a clear, simple format.

8. Attendance habits should be emphasized and encouraged by positive reinforcement techniques.

9. Administrative cooperation should be requested so that an aide might be assigned the responsibility of telephoning absent students.

10. Students who are absent should be contacted and an attempt made to help the student remedy the cause of the absence.

11. Students returning from an absence should be warmly welcomed.

State Level

Administrators at the state level might do the following:

1. Adopt one set of definitions, e.g., for enrollee, completer, and leaver, for use in all vocational education reports and publications.

2. Develop a method to track and give program credit to students in those programs that have atypical schedules for enrollment or completion.

3. Emphasize to staff the importance of timely, accurate reporting and the relationship between reporting and program funding.

4. Set up a "hot-line" at the state agency during the reporting period to give assistance to local personnel assigned to complete the report forms.

Introduction

The shortage of health care personnel in California and nationwide is severe, causing inconvenience to staff and lowering the quality of patient care, while simultaneously raising the cost. Braverman (1978) states, "Today the demand for health services, which far exceeds the supply of manpower, is another of the factors influencing the rising costs of medical care." A major goal of vocational education health occupations programs in California is to produce sufficient numbers of qualified individuals with entry-level and advanced skills to ameliorate the problem.

One source of entry-level personnel is students trained in secondary schools and ROC/P's. The rate of student completion of these programs, therefore, is one measure of program effectiveness.

Currently, it is reported by the State Department of Education that only 50 percent of those who enroll in health careers programs continue to completion. This high attrition rate is a concern to administrators and planners for several reasons. The reasons for this concern include:

1. Noncompleters are an indication of educational failure. An expenditure of time, effort, and money is made by the program with no return. This may lead to reduced funding for health careers programs, particularly in an era of fiscal austerity.

2. Students who might have completed the program are prevented from enrolling when noncompleters take up their space.

3. Noncompleters may feel a sense of personal failure at their inability to acquire the skills necessary to qualify for work and to achieve the economic freedom that accompanies employment.

4. Community health needs will not be met.

These concerns led the State Department of Education to fund a study of attrition in vocational education health careers programs. The purpose of the study was to determine the following: whether the reported attrition figure was accurate; why students were dropping out of health careers programs; and what could be done to increase the number of students completing these programs.

It is hoped that the information in this report will, in addition to answering these questions, provide information that will lead to an improved program for all students.

Methodology

In order to answer the three major questions of the study--whether the reported attrition figure was correct, why students were dropping out of health careers programs, and what could be done to increase the number of students completing these programs--three methods of data collection were implemented.

In the first part of the study, data on enrollees, leavers, and completers in school districts and ROC/P's, collected as part of the Vocational Education Data Reporting and Accounting System, were gathered from the State Department of Education for each year of the three-year period, 1977-78--1979-80. The data were reorganized to reflect the performance of districts in each health curriculum area over the entire three-year period. The number of reported completers was divided by the number of reported enrollees to get a percentage of completions for each year (see Appendices A and B). The data, as reported, were then examined for accuracy. Next, a list was compiled of districts reporting unusually high (over 85%) or unusually low (under 35%) rates of completion consistently over the three-year period. Site visits were made to six of the eight high completing districts and five of the six low completing districts to verify these figures.

The second part of the study was designed to determine why students drop out of health careers programs. A review of the literature for the past 10 years was conducted to identify factors previously reported as contributing to students' decisions to leave vocational education programs prior to completion. Health careers education representatives from several districts in the state reviewed the list of factors, adding factors which they considered important in their program. A survey form was developed to be mailed to teachers and administrators, grouping the factors into four categories: student related (both academic and nonacademic); school related; on-site training related; and career related (see Appendix C for survey instrument).

A total of 240 questionnaires were sent to a combined sample of health careers teachers and program administrators. Questionnaire recipients were asked to indicate the degree to which they perceived each factor as being responsible for students dropping out of their program. One hundred and eighty-seven questionnaires (78%) were returned. Fourteen of these contained either omissions or distortions which made them invalid, and seven were returned after the analysis had been completed. Thus, a total of 166 questionnaires were analyzed.

Since no one research method is without bias, an additional telephone survey of students reported to have dropped out of health programs was conducted. It was hoped that the results of this survey would supplement and cross-validate the responses of health careers personnel (see Appendix D for survey instrument).

The third part of the study was designed to determine what could be done to increase the number of students completing health careers programs. Site visits made to programs reporting completion rates under 35% and over 85% for the three-year period, 1977-78--1979-80, were utilized to determine differences between these programs and to isolate components that might be contributing to programs with high rates of completion. It was anticipated that certain components of successful programs would be generalizable to other programs and sites and might tend to increase the number of completions at those sites.

Findings

Accuracy of Data

There were many inaccuracies observed in the data as reported to the State Department of Education. The inaccuracies can be grouped into the following categories: (1) problems of agreement between enrollment and completion; (2) problems of definition; and (3) problems of unreported completers.

Problems of Agreement Between Enrollments and Completions

In some cases there was little agreement between the number of students reported enrolled in a program and the number reported as having completed the program, with completers outnumbering enrollees. According to the instructions (Instructions for Preparing and Submitting Vocational Education Statistical Reports Using Forms VEA-47, VEA-48 Secondary LEA only), the unduplicated count of enrollees is divided into four categories: those below grade 11; those in grades 11 and 12; adult long term; and adult short term. When reporting leavers and completers, however, districts should include only two categories of enrollees: those in grades 11 and 12 and long-term adults. One district reported 123 completers, but only 62 were enrolled in grades 11-12 and adult long term combined. The completer count may have included people enrolled in prior years, or it may have included adult short-term students. An individual check by district is needed to clarify this inaccuracy.

Problems of Definition

Another problem affecting the accuracy of the data is the way in which districts define enrollees, leavers, and completers. There is no definiton of "enrolled" in the instructions for completing the VEA-48 form; districts, therefore, have different interpretations of what enrolled means. Some districts, for example, consider preregistration in the spring as enrolling, while other districts do not count a student as enrolled until the student has spent a number of weeks in class. The way in which district personnel interpret enrolled has a profound effect on the percentage of leavers and completers reported by the district. If students who preregister in the spring and do not show up in September are counted as enrollees, they are artificially inflating the enrollment and simultaneously lowering the percentage of student completers, making the program appear less successful than it is.

A further problem involving definition is the fact that different State Department of Education publications have conflicting definitions for the same term. The VEA-48 instructions define a leaver as a person who was enrolled in and attended a program of vocational education and left the program and institution without completing the program. However, in the California Five-Year State Plan for Vocational Education, a leaver is a student who has left a program without completing it but with sufficient entry-level job skills to work in the field or in an occupation related to that field. In the first definition a student might drop out of school with no skills and be considered a leaver; while in the second definition a student could be hired successfully because she/he had attained sufficient entry-level skills; yet, the student would still be considered a leaver. Thus, both successful and unsuccessful students are

counted as leavers. To further complicate the problem, several administrators said that if students in their programs had sufficient entry-level job skills to work in the field and left before completing the program, those students were a success and, therefore, counted as completers, not as leavers.

To verify the perception that leavers were not being defined in a consistent way, survey personnel added the question, "How are leavers counted in your program?" The distribution of responses is contained in Table 1.

Table 1

Definition of Program Leavers (by percent)*

	Response Choice	Numbers Selecting Response	Percent
A.	Any student who has enrolled but does not complete the program	66	45
B.	Any student who was enrolled and attended at least 20 hours (4 weeks) but does not complete the program	29	20
C.	Any student who was enrolled in and attended a program of vocational education and who left the program and institution without completing the program	21	14
D.	Any student who was enrolled during the second week of classes but does not complete the program	17	12
E.	Any student who has left the program with sufficient entry-level job skills to work in the field or in an occupation related to that field	5	3
F.	Any student who has left the program after completing 50% of the competencies	4	3
G.	Other	5	3
	Total	147	100%

*Based on 147 responses to this question.

The table shows that only 14% of the health careers educators surveyed defined leavers in the manner prescribed by the VEA-48 instructions (in

addition, 14 respondents (9%) chose more than one definition). Forty-five percent counted any student who enrolled but did not complete the program as a leaver, placing no restrictions on how long the student was enrolled. The number of reported leavers, therefore, may be spuriously high. Teachers spoke of counting students as leavers if they signed up to enroll in the spring but never appeared in September. The fact that leavers are counted in so many different ways makes it invalid to compare the number of leavers reported by one program with the number of leavers reported by another. In discussing the validity of statistical reporting at the state and national levels, Neasham (1980) summed up the problem when he stated, "Aggregated numbers attached to categories that mean different things to a variety of reporting entities will lose much of their meaning if examined closely."

Finally, the definition of a completer is also ambiguous. The VEA-48 instructions define a completer as one who has met all the objectives of the program and is no longer enrolled. The California Five-Year State Plan for Vocational Education defines a completer as one who has completed the requirements of an instructional program. It is possible to complete all the objectives of a program prior to completing all of the hours. By VEA-48 definition, students who complete all the objectives of a program and leave prior to completing all the hours should be counted as completers. In practice, since completing "the requirements" of an instructional program usually means completing all the hours, these students are counted as leavers.

Problems of Unreported Completers

There are several reasons completers fail to be reported. One of the reasons is the great variation in the number of hours necessary to complete different programs or the same program at different sites. Many health careers programs require more than one school year to complete, i.e., over 600 hours. Reporting on enrollments and completions for the years 1977-1980 was done in July of each year for the previous school year. Students who had not completed by June 30 were not counted as completers. Students completing over the summer and not reenrolling the following year were never reported as completers. Large numbers of student completions "fell through the cracks" in this way.

Another example of unreported completers occurred in a program requiring 1,530 hours. Only 525 hours were scheduled in the secondary school, with students transferring to the adult school for the remaining hours. Students were counted as leavers, however, at the end of the secondary school program. The reported completion rate for this program, therefore, is very low, despite the fact that the actual completion rate is very high.

A third reason completers did not get recorded was identified by teachers in a large ROC/P. Teachers were instructed to record the letter "c" next to a student's name on the last day of attendance when the student completed the program. The attendance forms are sent to the district office for processing. Many students entered the program having hours already completed at other institutions. There was no consistency, therefore, in the number of hours entering students needed to complete the program. If a teacher neglected to record the "c" on the attendance form or if the district person failed to notice the small "c" on this complex form, the completion was never counted. Instructors in this district admitted that this was a frequent occurrence.

A fourth reason completers were unreported was carelessness or negligence on the part of the persons responsible for filling out the forms. Several districts reported turnover in administration with the newest staff member given the job despite his/her level of understanding of what was required or why the information was important. Teachers or clerical staff were often assigned to fill out the forms, and because they were already overburdened, their aim was completion rather than accuracy. Interestingly, districts reporting no completers did so by failing to put any numbers in the completers' column, rather than by recording a zero. This suggests that they were not actually declaring that no one completed, which would have required a zero in the completers' column, but just didn't know how many completed and, therefore, omitted any response.

State Department of Education officials are aware of some of these problems and have formed a committee of data analysts for ROC/P's representing all regions of the state. Part of the committee's charge is to create definitions of enrollees, leavers, and completers that will be used uniformly by all programs in ROC/P's as of July 1, 1982. This is a needed step towards obtaining data of a higher quality than that which exists at present. Additionally, the switch to CBEDS (California Basic Educational Data System) method of data collection promises greater consistency of enrollment data, as it is collected on a single Information Day. Students who don't show up or leave after only a few days are not counted as enrolled. However, programs that begin in the second semester and last only 150 hours and open entry/open exit programs will not have their true enrollment recorded, as enrollment that occurs after Information Day will not be reported to CBEDS.

Problems of inaccurate data collection are not unique to health programs or to California and have been outlined in federal vocational education reports. What is unusual about the figures for health careers programs is that, while the inaccuracies in data collection and reporting for most other vocational education programs tend to make the programs look more successful (Lee and Sarten, 1973), in health careers programs, they tend to do the opposite. Visits to districts seem to indicate that many students who do complete the program are not being reported. This distortion should be eliminated.

Completions by Ethnicity

Despite the imprecision of data collection, it seemed useful to examine the completion rates of the six reported ethnic categories to determine whether any one group was completing at a significantly different rate from the others. Data were compiled for the year 1979-80 by individual program and then summarized across programs. A series of chi-square tests was performed comparing the completion rate of each minority group with the completion rate of whites. Although there were a few individual variations by program (see Appendix D), when the data were summarized, the only significant finding was that a higher percentage of Filipinos were completing across all programs than were any of the other groups, including whites (see Table 2).

Table 2

Summary Sheet

Health Program Completers by Ethnicity

Ethnic Category	Enrolled	Completed	% Completed
White	9,148	5,381	59
Hispanic	3,319	1,963	59
Black	2,295	1,399	61
Filipino	234	166	71*
Asian	588	327	56
American Indian	125	70	56
Total	15,709	9,306	59

* $x^2 = 13.3$, significant beyond the 0.05 level.

Staff Perceptions of Student Attrition

The previous section outlined data inaccuracies associated with reported attrition in health careers programs. Although it appears that attrition is somewhat lower than has been reported, the fact that students do leave programs prior to completion remains a concern to program staff and administrators. By identifying the reasons students leave, program directors may be able to take corrective action and, thereby, increase the number of students who complete.

Presentation of Data

Table 3 lists the factors that were included on the questionnaire sent to health careers personnel. Respondents were asked to indicate the degree to which they perceived each factor as contributing to student attrition: (1) not at all; (2) to a little extent; (3) to some extent; or (4) to a great extent. For clarity, results were dichotomized. Only factors contributing to some extent or to a great extent were considered contributors to student attrition.

More than half the respondents chose the following factors most frequently as contributing to students dropping out: excessive absence (67%);

poor organization and study habits (62%); academic deficiencies (62%); and family problems (57%).

Other factors contributing to the attrition rate were lack of motivation (47%), poor attitude (34%), interference of the program with the student's job (35%), and a lack of or underutilization of career guidance and counseling (34%).

Table 3

Factors Contributing "To Some or to a Great Extent"

to Students Dropping Out of Health Careers Programs (by Percentage)

Factor	Percentage
Student Related (Academic)	
Excessive absence	67.4
Poor organization and study habits	62.1
Academic deficiencies (reading, math)	61.5
Lack of motivation	47.0
Discipline problems and/or poor attitude	33.8
Language barrier	28.9
Apparent alcohol problem	2.4
Apparent drug problem	2.4
Student Related (Nonacademic)	
Family problems	56.7
Program interference with student's job	34.9
Excessive transportation time to and from program	31.3
Student didn't understand nature of the program when enrolling	30.1
Lack of parental support for remaining in program	26.5
Health problems	20.5
Lack of necessary child care services	21.1

Table 3 (continued)

Factors Contributing "To Some or to a Great Extent"

to Students Dropping Out of Health Careers Programs (by Percentage)

Factor	Percentage
Student Related (Nonacademic)	
Lack of peer support for remaining in program (may include pressure to drop out)	13.8
Pregnancy	11.4
Student is below minimum age and must drop out.	10.2
Student passes proficiency exam (GED), obtains high school diploma, and drops all classes.	6.0
School Related	
Appropriate career guidance and counseling are not available or not utilized.	33.8
Student needs to make up a graduation requirement.	24.7
Remedial help is not available or not utilized.	23.5
Student-teacher ratio is too high.	18.7
The program needs improvement.	18.6
Teacher counsels student out of program because student shows little chance of succeeding.	18.1
There are not enough community classroom placements.	12.6
Inadequate teacher supervision exists at work placement site.	8.4
Program must be dropped because qualified teacher can't be found.	3.6
Training Related	
Students feel uncomfortable with the way they are treated by health care staff in training facility.	15.0
Students expected more "hands-on" patient care earlier in program.	9.0

Table 3 (continued)

Factors Contributing "To Some or to a Great Extent"

to Students Dropping Out of Health Careers Programs (by Percentage)

Factor	Percentage
Career Related	
The pay for training-related employment is lower than student expectations.	32.6
The status of training-related employment is lower than student expectations.	18.1
Student perceives little opportunity for future career advancement.	13.2
The work environment for training-related employment is undesirable; i.e., nights, weekends, holidays.	12.0

Chi-Square Analysis

A chi-square analysis was performed in order to determine if any of the factors chosen by more than half the respondents were of differential importance among the following categories:

1. Career clusters (medical assisting, dental assisting, nursing assisting, or hospital occupations)
2. Type of district (rural, urban, or suburban)
3. Type of student (secondary, adult, or mixed)
4. Facility (secondary school, ROC, ROP, Adult School)
5. Program size (fewer than 50 students, between 50 and 150 students, greater than 150 students)

Of the 56 chi-square tests performed only two reached statistical significance ($\alpha < .05$), less than the number that might have reached significance merely by chance. Thus, it is relatively safe to assume that the factors identified by health careers personnel as contributing to student attrition were equally important across career clusters, type of district, type of student, facility, and program size. It should be remembered, however, that analyses like these represent averages across large numbers of sites, and individual sites may have different factors responsible for student attrition.

Staff Comments

In addition to rating the questionnaire items, respondents were asked to list factors not included on the questionnaire which they felt were contributing to students dropping out of their program. Most frequently mentioned were those relating to the guidance, counseling, and screening of students prior to program enrollment. Comments of respondents in this area were:

"Poor counseling at home feeder schools."

"A screening process before entry would be a great help."

"Students (are) ... placed in programs by high school counselors only to fulfill hour requirements for graduation or to keep the student in school. Student has no real interest in a health career."

"Some have dropped because it is too great a length of time."

"Peers encouraged to join programs to be with friends--no real personal interest in class."

"Immaturity of some sixteen-year-olds."

"Student had unrealistic expectations about actual job responsibilities and work load."

"Program involved more study and time than anticipated."

A second frequently mentioned factor was family problems. Comments included:

"Broken homes, divorce of parents, moving."

"Some students enter trying to find answers to their own personal problems--eventually develop awareness they are inappropriate for this field."

"Moving away from area due to transfer of spouse"

"Most of our students are from a poverty area and this contributes a great deal to the program changes."

"Family location changes--move away from area."

"Student overload--stress."

"Children at home to care for and no baby sitter."

Another factor mentioned was that students were hired before they completed the program. Some respondents indicated that the employment was in the health field, implying that students were sufficiently skilled to obtain an entry-level position prior to completing the program. Other factors mentioned were that students left for financial reasons, or due to excessive transportation time or expense.

In summary, staff involved in vocational education health careers programs believed that the major factors related to students dropping out were:

1. Excessive absence
2. Poor organization/study habits
3. Academic deficiencies
4. Family problems
5. Lack of motivation
6. Interference with job
7. Lack of guidance and counseling prior to enrollment
8. Excessive transportation time

Student Leaver Telephone Survey

To verify staff perceptions about why students drop out of health careers programs, staff members telephoned students who had left during the current school year. A pool of approximately 164 students from different health careers formed the basis for the survey. Of the 60 we were able to contact, seven claimed not to have dropped out of the program at all. Thirteen said that they had dropped out temporarily and had plans to reenter, and one had switched from one health career program to another, completing the latter program.

The most frequent response to the question, "Why did you leave the program?" was that students left due to personal illness (13%). The small sample size and the fact that calls were made during working hours, however, suggest that there may be a systematic bias operating. Those who were healthy were more likely to be away from home during the normal working day, when survey calls were placed, either because they were employed or were enrolled in school, while those who were ill might be more easily reached because they were at home.

The second most frequent response to the same question involved the family (either family problems or the family moving away). This was followed by (1) finding the program more difficult than anticipated; (2) interference with job; (3) transportation problems; and (4) loss of interest. One student reported being frightened by the clinical experience.

The degree of concordance between student and staff responses, plus the fact that 12% did not leave the program and 22% of the leavers planned to return, seemed to indicate that student-related factors, both academic and nonacademic, plus enrollment without adequate guidance and counseling were more responsible for student attrition than were program inadequacies.

One interesting exception to this conclusion came from a number of students in response to, "What suggestions do you have for improving the program?" and "Is there anything else you would like to tell me about your experience in the program?" These students spoke of being bored with a self-paced modular system of instruction. They expressed a need for more human interaction and wanted the teacher to present lessons, instead of just being available to answer questions or assist a student with a problem. Also mentioned was the importance of the support that comes from the entire class sharing a learning experience, rather than each individual working in isolation. Although no student stated that this was the reason for leaving the program, it is an issue that should be reflected upon by those operating a modular, individualized program.

Site Visits

The researchers attempted to determine which elements within programs might be contributing to high rates of completion. Programs with an 85% or higher completion rate for each of the three years 1977-78, 1978-79, and 1979-80 were compared with programs that had very low completion rates, 35% or lower. Discussions were held with teachers, administrators, counselors, and students. Through these discussions, a number of variables emerged. In some cases it was possible to compare the same variable at both high and low completion sites; in other cases it was not. Although the observations reported here do not constitute conclusive evidence, they do shed light on factors that appear to be correlated with successful programs.

Counseling and Interviewing

A concern voiced by many practitioners in low completing programs was that high school counselors frequently used vocational classes as the last resort, or "dumping ground," for students who had been unable to succeed in other programs. Support for this observation was found in the literature (Bottoms, 1980; Nichols, 1980; Young, 1980). Teachers reported that students were directed by high school counselors to enroll in health careers classes as an "easy" way to obtain credits toward graduation. In reality, since health careers programs involve the study of highly technical areas, such as anatomy and physiology, they are very difficult courses.

A further problem in low completing districts was that there was generally little assessment of a student's interests or qualifications done at the training facility; preenrollment counseling was assumed to have taken place at the high school. Frequently, an orientation was held during the first few class sessions as a substitute for preenrollment assessment. At this time students were exposed to the requirements of the health careers class. If the student decided that the program appeared too rigorous, however, options for changing classes might be limited, as other classes might have full enrollment by then. Thus, the student might stay on in the health careers class, only to drop out after several weeks or months when it became apparent that a passing grade would not be achieved.

By contrast, respondents who reported very high rates of completion indicated that their school counselors had a very positive attitude toward the program. In some cases a portion of the high school counselor's salary is paid for by the ROC/P. In order to keep the high school counselors aware and up-to-date on program requirements, frequent meetings were held, often in the form of social events, such as luncheons, picnics, and barbecues. Counselors and career technicians were invited to Vocational Industrial Clubs of America (VICA) functions. They also visited ROC/P's, talked to the teachers, and then brought the information back to the high school. One ROC/P staff prepared a multimedia presentation for the counselors to use in the high school. Several ROC/P teachers visited the high schools to talk to counselors and potential students. With this information counselors would have the knowledge to present a more balanced picture to students considering enrolling in health programs.

Programs with high rates of completion also benefited when the health careers teachers, in interviewing students, discouraged the enrollment of

students who were not genuinely interested in health careers. These interviews were not done to eliminate low achievers; all teachers who were consulted indicated they would accept students who appeared to be highly motivated, despite a poor academic record. Teachers did express the opinion, however, that a student needed maturity and motivation to successfully complete a health careers program.

In health careers programs located within high school facilities, arranging a preenrollment interview was relatively simple, as both students and teachers were normally housed within the same building. When the program was located in an ROC, however, the process was more complicated. Some teachers visited the home high schools and interviewed potential students there. Others arranged, or had the ROC/P counselor arrange, site visits for prospective students to come by bus to the ROC and observe the program in action. This allowed students to observe not only the program but also the amount of travel time that would be involved. Some programs went further and held an Open House for parents of potential students. All of these steps helped to dissuade students from enrolling in a health careers program because they thought it would be easy. This provided more space for those who had a genuine interest in the program.

Academic Deficiencies

Although academic deficiencies represented a major reason why students did not complete health careers programs, districts with low rates of completion did not seem to address the problem head on. When asked about academic deficiencies, teachers reported that students would be given extra or remedial help if they requested it. This help, however, was usually relegated to either before or after class. If students were bused to an ROC, they generally were unable to take advantage of this remedial help.

High completion programs, however, appeared to give special attention to basic skills deficiencies. Some programs used VEA funds to pay for a part-time or full-time classroom aide, whose job it was to work with students whose skills were below grade level. One program employed a former graduate in this position. One ROC hired a special education teacher, on a full-time basis, to provide remediation to all learning-disabled or educationally handicapped students in the ROC. Many teachers described basic skills instruction as an integral part of the program; for example, they would teach vocabulary skills such as prefixes and suffixes to help students learn medical terminology. The use of computers was also cited. Students having difficulty with math skills were required to spend a certain number of hours working on remedial math at the computer terminal. Special education students utilized the services of a resource specialist in the home high school. Teachers reported including study skills as part of the curriculum; i.e., time management, note taking, studying, and test-taking skills. Some teachers prepared chapter guides for their textbooks, including vocabulary words, definitions, and questions to be answered. Although the specific materials and instructional strategies used varied, the commitment to assist in the development and reinforcement of students' basic skills did not, and it was this commitment that appeared to increase students' chances for completion.

Community Awareness and Participation

A discussion of community participation by students, with resulting community awareness of health careers programs, was initiated by teachers in those districts that reported high rates of completion. This participation took many forms, from having students provide health screening services, such as taking blood pressure readings at health clinics, to having students join and attend monthly meetings of professional associations.

Teachers showed great creativity in arranging innovative ways for students to participate in community activities. For example, in one district, students took the blood pressures of members of various service organizations, e.g., Lions Club, Rotary Club, and so forth. They then averaged the blood pressure readings of each club and published the results in the local newspaper. In one district, disaster drills were staged for public awareness. In several districts, students worked with handicapped youngsters who were participating in the Special Olympics and attended the state competition with the participants. In addition to the publicity, this activity helped students develop a rapport with the handicapped. In some programs students visited elementary schools to teach preventive medicine to the children. One dental program worked out an arrangement with local dentists whereby patients who did not have dental insurance and who wished to lower the cost of dental treatment went to the ROC/P for X-rays (taken by students who had passed the Radiation Protection Safety License Exam). There was no charge to the patient for the X-rays and students had an opportunity to practice their techniques.

Participation in VICA (Vocational Industrial Clubs of America) was another method used to increase public awareness of what was happening in health careers programs, particularly if one or more students went on to the state- or national-level competition. Local newspapers were generally happy to feature articles highlighting students' experiences in VICA, often including pictures of the students at work. Some ROC/P's published their own newsletter, emphasizing the achievements of graduates, as well as current events in the ROP.

More unusual forms of community participation included having students in an Emergency Medical Technician class ride in the ambulance with the class instructor on emergency calls. In a Medical Assistant class, students with perfect attendance records accompanied their instructor when she worked as a flight nurse for burn victims being flown to a special burn unit in Texas. Although most health careers instructors would be unable to provide experiences as exciting as these, students do find most community participation motivating.

Instructional Factors

Many administrators emphasized the importance of good teachers and good teaching techniques in helping large numbers of students to complete health careers programs. Although a precise definition of good teaching has always been somewhat elusive, certain behaviors did appear to differentiate between teaching techniques used in programs with high and low completion rates.

At one low-completion program, which was operated by a private college on contract to an ROP (the contract has since been cancelled), the instructor stood in front of the room and dictated outline notes for students to copy. There was little or no interaction observed between teachers and students except when a student asked the spelling of a word. Students were expected to take the notes home, type them, and hand them in for a grade. The rationale for this kind of instruction was that students would have an exemplary permanent notebook at the end of the course. Students who did not own a typewriter were permitted to use a school typewriter either before or after class. Since students were bused to and from the facility after they had completed a full day of high school, this was not a realistic solution.

A readability check (Fry, 1968) was done on textbooks at several low-completion program sites, and in all cases the text was found to be on a college level. This contrasted with the readability of texts at two high-completion program sites, which had an eighth-grade reading level.

A variety of traditional and nontraditional forms of instructional excellence was observed in sites reporting high percentages of completers. Among teachers who used traditional techniques were teachers who telephoned parents or sent letters home to praise a student's good work, unusual improvement, or other noteworthy achievements, or to discuss problems, particularly student absences. One teacher talked about developing class morale and camaraderie among students by recognizing and celebrating birthdays in class. Another ROP teacher mentioned the annual awards dinner which honors outstanding students in each vocational area. Teachers in high completion programs emphasized the importance of clearly stating acceptable standards of behavior, work, and attendance. Teachers talked about rewards, such as a plaque given monthly to the class with the best attendance, certificates given to individual students for achievement, and gold seals for unusual achievements and aptitudes. Weekly written evaluation of students was another approach used, so that students could chart their progress. Job survival skills were incorporated into the curriculum by one ROP with topics such as where to look for a job, how to fill out an application, how to prepare for a job interview, and how to write a resume. These skills help students bridge the gap between the program and the real world. One highly successful ROC/P used video equipment to tape practice interviews which were then reviewed and critiqued. Some ROP's provided alternative forms of assessment for students who did poorly on paper and pencil tests. These included reading the test to the student and grading an oral response or grading on skills that the student could demonstrate.

Less traditional strategies included putting tombstone stickers on students' papers when the students had incorrectly calculated drug dosages, indicating that the patient would have died. Another creative instructor made a tape of the record, "Another One Bites the Dust," which was played to highlight student errors which, if made with an actual patient, could have cost the patient's life. One ROC/P instructor rewarded students who had achieved a high grade point average and good attendance by accompanying them on a river raft trip, the cost of which was donated by the river rafting company. These are only a few examples of the many fine ways in which teachers motivate and assist students to attain high achievement and program completion.

Administrative Support

Although teachers in programs with low completion rates did not speak of a lack of administrative support, several teachers in programs with high completion rates made it a point to give credit to their administrators.

One form of administrative support was the granting of science credit for completing health courses. This enabled students to enroll in a health class and still accumulate the credits needed for graduation.

Another kind of support was flexible scheduling of classes beyond the traditional school day. One high-completion ROP offered classes at various times of the day, plus early morning and evening classes to accommodate the divergent needs of students. Students could take health classes before the regular school day from 6:35-9:05 a.m.; during the day, 9:00-1:00; 12:30-3:30, 3:30-6:30; or in the evening from 6:00-10:00.

Conclusion

The findings of this report indicate that there are more students completing health careers programs than have been reported. In addition, information obtained from site visits, personal interviews, and survey reports suggest that there are elements within health careers programs that seem to have a positive effect on the rate of student completion. In the conclusion to this report, these program elements will be reviewed. Recommendations for specific action will be given for both local and state agencies, and teachers' strategies for implementing the recommendations will be listed.

Guidance and Counseling

According to teachers who responded to the attrition survey and those who were interviewed in person, competent counseling is essential to provide potential enrollees with a realistic assessment of health careers program requirements. Although many counselors do an exemplary job, teachers reported that some counselors direct students to vocational education because they, mistakenly, believe it is the easiest way for students to earn graduation credits. Other counselors neither encourage nor discourage students, but allow them to register in health careers programs without understanding the high academic requirements of the courses. Students who enroll in health careers classes without understanding the requirements have a substantially reduced chance of completing the program.

Recommendation: The ROC/P's should take the initiative to inform the high school counselors about health careers program requirements, including the length of the programs and their level of difficulty.

Teacher Strategies for Implementation: Guidance counselors can be very helpful in recruiting top-quality students if they understand what your program requirements are. It is up to you to be sure that they have all the necessary information. Here are some ways to transmit that information to the counselors:

- Take a guidance counselor out to lunch. Guidance counselors are more receptive to new information that is presented in an informal, friendly atmosphere.

- Visit the feeder high schools while your students are in the community classroom. Talk to potential enrollees about your program. Invite the guidance counselor to sit in while you talk to the students.

- Bring current students or graduates of your program to the feeder high schools to talk to potential enrollees.

- Invite all the guidance counselors to a "thank-you" party at your facility. Perhaps ROC/P food service students can cater the party. Showing your appreciation to the guidance counselors will motivate them to help you even more.

- Have your students prepare a health program and/or health services for students in the feeder high schools. Invite the guidance counselors to attend the program.

- Develop a slide or multimedia presentation of your program for use by guidance counselors.

- Make up certificates of appreciation and send them to guidance counselors when students they have recruited complete the program.

- Have a Counselor's Day. Bring counselors from all the feeder schools to the ROP at one time. Serve lunch first. Then let each ROP teacher take a few minutes to explain his or her program.

Interviewing

Although students may be provided with appropriate information by the high school counselor, some still choose to enroll in health careers programs to be with friends or for other reasons unrelated to a genuine interest in health careers. Sites that had high percentages of completers were those where the instructors made an effort to meet and talk with students prior to their actual enrollment; frequently, by having the students come to the ROC/P classroom. Visiting the ROC/P gave the students an opportunity to learn about the requirements of the program, the amount of travel time involved in attending the ROC/P, and other factors. Although teachers expressed the view that good academic skills were important to success in health careers programs, they were willing to accept students on the basis of maturity and motivation, despite a weak academic record.

Recommendation: Consideration should be given to providing health careers instructors with the opportunity to speak to potential enrollees at the ROC/P site. Instructors should have the option of selecting students who appear to have a good chance of completing the program.

Teacher Strategies for Implementation: Interviewing potential enrollees can help you distinguish between students who are genuinely interested in a health career and students who are planning to enroll because they think it will be an easy way to get credits. Spending a few minutes with a student

before enrollment may be a good investment in terms of reducing attrition. Some of the things you may find helpful are the following:

- While your students are in community classrooms, visit the feeder schools and interview potential enrollees.
- Arrange for potential enrollees to come and spend half a day in your class.
- Arrange an "Open House" for potential enrollees and their parents or significant others at your facility.
- Arrange a "Picnic Day" for both new and old students. Assign each potential new student a "buddy" who is responsible for explaining program requirements. Circulate and talk to potential students.

Academic Deficiencies

More than 61% of survey respondents named academic deficiencies as contributing to students dropping out of health careers programs. Programs with high rates of completion made provision for remedial education by hiring a classroom aide to work with low achievers, by utilizing the services of a special education teacher on site, or by integrating basic educational skills into the health careers curriculum.

Recommendations: Academic deficiencies may be reduced in the following ways:

1. Basic skills instructions should be incorporated into the curriculum, where possible.
2. Consideration should be given to the use of VEA funds for hiring a classroom aide to assist low-achieving students.
3. The procedure for using VEA funds to hire a classroom aide should be made available to districts in a clear, simple format.
4. The readability of required textbooks should be checked and a more readable text made available, if necessary.

Teacher Strategies for Implementation: Students with academic deficiencies are more likely to be noncompleters than are students with strong academic skills. Incorporating basic skills instruction into the curriculum may increase the completion rate of your program. Some useful strategies are the following:

- Test students on basic skills. (The high school resource specialist can probably supply you with diagnostic tests and materials for remediation.) Post a chart on the wall of students' success in completing remediation materials.
- Give tokens to video arcades, free movie passes, and so forth to students who show the most improvement each month. Local merchants will usually make donations so that you have a variety of rewards.

- Assign a good student to help a weaker student.

- Have a "Student of the Week" bulletin board featuring a picture of the student who has done the best work all week.

- Examine several current, widely used textbooks in your occupational area. Develop a master list of essential words which form the foundation of your program. Make it a priority for students to learn those words.

- Explain new vocabulary and concepts before assigning a chapter in the textbook.

- Have students develop crossword puzzles using new vocabulary.

- Contact the Foster Grandparents program, parents, local churches, and other civic organizations, and ask for volunteers to work with disadvantaged students.

- Clearly explain to the class the purpose of all reading assignments. Tell students what to look for and why. (If necessary, tell them the page and passage where important information can be located.)

- Make charts of common prefixes, root words, suffixes, and compound words.

- Write secret messages on the board using difficult vocabulary words. Keep a chart of who is the first student to decipher the message.

- Keep a thesaurus handy and use it often in class.

- Have 2-minute contests to see who can find the most synonyms for a word.

- Create writing situations wherever possible. Read what students write. Respond to the content, as well as to the form.

- Use a time clock in class with all students clocking in and out. Have students figure out what their pay would be at the end of each week/month. Vary the hourly rate of pay.

- Check the readability level of required textbooks. Try to match reading level of text with reading level of students.

- Have students who need to improve their reading skills read aloud to patients at convalescent hospitals.

Organizational Study Skills

More than 62% of survey respondents named poor organization and study skills as factors which contribute to students dropping out of health careers

programs. Many instructors expressed a need to provide instruction on how to study, take notes, outline, manage time, and take tests.

There are commercial materials available to assist instructors who may be unaccustomed to teaching study skills.

Recommendation: Consider devoting class time to the teaching of time management, organization and study skills, and then relate these skills specifically to the course content, where possible.

Teacher Strategies for Implementation: Students who need to improve their study skills may be helped by the following strategies:

- Begin the semester by giving students inventory tests in time management and study habits. Discuss the results with the class.
- Review the rules of effective planning. Instruct students on the importance of dividing tasks into manageable units and of setting due dates for each unit.
- Review the rules for effective note taking in class.
- Teach the SQ3R (survey, question, read, recite, review) method for textbook assignments.
- Teach the rules of "test-wiseness" to help students improve their grades on multiple-choice tests.

Excessive Absence

Excessive absence was the most frequently selected factor with more than 67% of survey respondents indicating that it contributed to students dropping out of health careers programs. The reasons for student absence may vary. Health, family, and child care problems may cause a student to be absent. Excessive transportation time, lack of motivation and a poor attitude, or interference with the student's job are other possible explanations. Because excessive absence is a correlate, rather than a cause of dropping out, it does not yield to easy solutions or remediation. Attention should be paid to those individuals who are absent before they fall so far behind it is difficult to make up the work and they are compelled to leave the program. This can be done by the teacher or ROC/P counselor, and may involve a phone call, interview with the student, or discussion with parents regarding the reason for the absence and the necessity for regular attendance. Teachers can encourage good attendance with positive reinforcement techniques, such as individual and group recognition, competition for highest level of attendance, and rewards for perfect attendance.

Recommendations: To ensure regular attendance of students, teachers and administrators can implement the following policies:

1. Good attendance habits should be emphasized and encouraged by positive reinforcement techniques.

2. Students who are absent should be immediately contacted and an attempt made to help the student remedy the cause of the absence.

3. Administrative cooperation should be requested so that an aide might be assigned the responsibility of calling absent students.

4. Students returning from an absence should be warmly welcomed.

Teacher Strategies for Implementation: Student absences may be reduced in the following ways:

- Begin the semester by explaining the attendance requirements of the health industry. Let students know that they will be responsible for regular attendance in class just as they would be on a job.

- Ask your administration to allocate teacher aide time to assist in phoning absent students.

- Try to find parent volunteers to assist in phoning absent students.

- Give students printed certificates of good attendance, post charts of perfect attendance, and provide rewards for good attendance; e.g., free movie passes.

- Provide a good role model for students by having an exemplary attendance record yourself.

- Develop class morale and camaraderie among the students by planning picnics, potlucks, and other social events.

- Involve students in activities outside the classroom. This may increase motivation and simultaneously improve student attitudes and attendance, especially if the students' efforts are publicly acknowledged.

- Participate in Health Fairs. Record the blood pressure readings of ROP or high school instructors. Compare department, school, and individual blood pressure readings from year to year.

- Publish a newsletter highlighting the achievements of program graduates.

- Invite graduates to come to your classes to tell students about their jobs.

- Participate in VICA.

- Ask your local newspaper to come to your class and do a story on your program.

- Work with students participating in the Special Olympics.

- Start an Adopt-a-Grandparent program. Have your students bring friends or classmates to spend one hour a week with a patient in a convalescent hospital.

- Have students interview patients in convalescent hospitals as an icebreaker for students and patients.

- Have students go into community elementary or junior high schools to put on demonstrations, such as the correct way to brush teeth, or to take blood pressure, including an explanation of what blood pressure is and how blood pressure is affected by diet and drugs.

Reporting

Basic information on the number of students who enroll in, complete, or leave vocational education health careers programs is used for program management and planning. It is essential, therefore, that the information be accurate. First, this requires consensus on the definition of terms used in the report. Second, the report forms need to accommodate a variety of program lengths and formats, i.e., open-entry/open-exit programs, or programs that begin in secondary school and end in ROC/P or adult school. Third, staff members responsible for completing the forms need instruction in how to report the data accurately, plus an awareness of their importance.

Recommendations to the state agency: To ensure timely and accurate reporting, the state agency might do the following:

1. Adopt one set of definitions, i.e., for enrollee, completer, and leaver, for use in all vocational educational reports and publications.

2. Develop a method to track and give program credit to students in those programs that have atypical schedules for enrollment or completion.

3. Emphasize to staff the importance of timely, accurate reporting and the relationship between reporting and program funding.

4. Set up a "hot-line" at the state agency during the reporting periods to give assistance to local personnel assigned to complete the report forms.

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Appendix A
Percentage of Completers, by District and Program

District/ROP	USOE Code	Program Title	Contract Indicate Year	% Completers/Year 1977-78			1978-79			1979-80		
				En.	Com.	%	En.	Com.	%	En.	Com.	%
Central Region												
Tri-County ROP	07.0000	Health Occupations Education		20	19	95	13	11	85	12	0	0
Southern Region												
Simi Valley Unified	07.0100	Dental		170	208	122	135	102	76	--	--	--
Central Region												
El Dorado ROP	07.0101	Dental Assist.		11	11	100	7	5	71	16	14	88
West Side ROP	07.0101	Dental Assist.		15	9	60	11	10	91	9	1	11
Galt Joint Union High	07.0101	Dental Assist.		--	--	--	10	5	50	--	--	--
San Joaquin ROP	07.0101	Dental Assist.		23	22	96	--	--	--	56	28	50
Coastal Region												
San Lorenzo Unif.	07.0101	Dental Assist.		--	--	--	--	--	--	17	0	0
Eden Area Voc. Pro.	07.0101	Dental Assist.		42	37	88	71	67	94	27	23	85
Mission Trails ROP	07.0101	Dental Assist.		88	46	52	88	88	100	107	76	71
San Jose Reg. Voc. Cen.	07.0101	Dental Assist.		90	76	84	105	63	60	77	61	79
Santa Clara N. Cnty. ROP	07.0101	Dental Assist.		--	--	--	19	31	163	31	19	61
Santa Clara S. Cnty. ROP	07.0101	Dental Assist.		22	8	36	--	--	--	--	--	--
Solano County ROP	07.0101	Dental Assist.		34	23	68	23	13	57	25	12	48

*Denotes short-term adult enrollees only.
**Denotes more than 100% completion rate due to inclusion of short-term adults or enrollees from prior years.
--Denotes no reported program.

District/ROP	USOE Code	Program Title	Contract Indicate Year	% Completers/Year 1977-78			1978-79			1979-80		
				En.	Com.	%	En.	Com.	%	En.	Com.	%
Mt. Diablo Unified	07.0101	Dental Assist.		16	12	75	--	--	--	--	--	--
San Francisco County ROP	07.0101	Dental Assist.		20	12	60	--	--	--	--	--	--
Southern Region												
Montebello Unif.	07.0101	Dental Assist.		--	--	--	30	16	53	27	27	100
Hacienda-La Puente Unif.	07.0101	Dental Assist.		--	--	--	129	12	09	192	68	35
La Puente Valley ROP	07.0101	Dental Assist.		8	4	50	20	17	85	49	20	41
L.A. Unified ROC/P	07.0101	Dental Assist.		319	210	66	252	252	100	340	243	71
L.A. County ROP	07.0101	Dental Assist.		287	92	32	131	17	13	70	21	30
Southern Cal ROC	07.0101	Dental Assist.		237	0	0	227	148	65	241	170	71
No. Orange County ROP	07.0101	Dental Assist.		172	72	42	146	56	38	111	51	46
Capistrano-Laguna ROP	07.0101	Dental Assist.		74	23	31	44	37	84	89	71	80
Coastline ROP	07.0101	Dental Assist.		62	53	85	45	35	78	28	26	93
Riverside County ROP	07.0101	Dental Assist.		39	27	69	42	22	52	76	48	63
San Diego County ROP	07.0101	Dental Assist.		68	36	53	82	53	65	77	25	32
Simi Valley Unif.	07.0101	Dental Assist.		--	--	--	--	--	--	31	20	65
Ventura County ROP	07.0101	Dental Assist.		54	44	81	47	41	87	49	43	88
E. San Gabriel Valley ROP	07.0101	Dental Assist.	79-80	40	37	93	21	19	90	23	16	70
L.A. County ROP	07.0101	Dental Assist.	79-80	--	--	--	--	--	--	121	35	29
Baldy View ROP	07.0101	Dental Assist.	79-80	23	3	13	20	0	0	37	9	24
Central County ROP	07.0101	Dental Assist.		188	108	57	274	33	12	--	--	--
Coastal Region												
Contra Costa ROP	07.0103	Dental Lab Tech.		--	--	--	--	--	--	15	9	60
Southern Region												
Montebello Unif.	07.0103	Dental Lab Tech.		--	--	--	24	18	75	33	33	100
Central County ROP	07.0103	Dental Lab Tech.		--	--	--	--	--	--	262	144	55
L.A. County ROP	07.0103	Dental Lab Tech.	79-80	150	33	22	48	16	33	43	21	49
Simi Valley Unif.	07.0103	Dental Lab Tech.	79-80	--	--	--	--	--	--	*	0	
Riverside County ROP	07.0199	Dental, Other		44	37	84	50	34	68	45	31	69
Huntington Beach Union High	07.0199	Dental, Other		12	7	58	--	--	--	--	--	--
Redlands Unified	07.0199	Dental, Other		38	24	63	--	--	--	--	--	--
Simi Valley Unified	07.0199	Dental, Other		--	--	--	--	--	--	*	0	

District/ROP	USOE Code	Program Title	Contract Indicate Year	% Completers/Year 1977-78			1978-79			1979-80		
				En.	Com.	%	En.	Com.	%	En.	Com.	%
Central Region												
El Dorado ROP	07.0200	Med Lab Tech.		71	64	90	50	40	80	35	33	94
Coastal Region												
Contra Costa ROP	07.0203	Med Lab Assist.		--	--	--	--	--	--	31	12	39
Humboldt County ROP	07.0203	Med Lab Assist.		29	6	21	16	14	88	23	9	39
Solano County ROP	07.0203	Med Lab Assist.		50	23	46	44	26	59	38	29	76
Southern Region												
Hacienda-La Puente	07.0203	Med Lab Assist.		--	--	--	*	20		*	10	
L.A. Unified ROC/P	07.0203	Med Lab Assist.		20	13	65	9	9	100	82	39	48
Irvine Unified	07.0203	Med Lab Assist.		--	--	--	--	--	--	97	34	35
San Diego County ROP	07.0203	Med Lab Assist.		85	51	60	108	71	66	175	56	32
Central Region												
Grant Joint Union High	07.0299	Med Lab Tech. Other		--	--	--	--	--	--	13	13	100
Southern												
Simi Valley Unified	07.0300	Nursing		206	218	106	99	91	92	--	--	--
Grossmont Union High	07.0300	Nursing		37	32	86	--	--	--	--	--	--
Central												
Willows Unified	07.0300	Nursing		60	52	87	--	--	--	--	--	--
Coastal												
San Jose Reg. Voc.	07.0300	Nursing		*	0		--	--	--	31	0	0
Central												
Kern Union High	07.0301	Nursing (Assoc. Degree)		*	0		--	--	--	--	--	--

District/ROP	USOE Code	Program Title	Contract Indicate Year	% Completers/Year 1977-78			1978-79			1979-80		
				En.	Com.	%	En.	Com.	%	En.	Com.	%
Southern												
Inglewood Unified	07.0301	Nursing		--	--	--	--	--	--	*	156	
Central												
Hanford Jt. Union	07.0302	Voc. Nursing		27	27	100	29	29	100	29	21	72
Coastal												
Hayward Unified	07.0302	Voc. Nursing		4	2	50	88	74	84	162	139	86
Livermore Valley Joint Unified	07.0302	Voc. Nursing		26	26	100	--	--	--	--	--	--
Eden Area Voc	07.0302	Voc. Nursing		112	101	90	70	68	97	--	--	--
San Lorenzo Unified	07.0302	Voc. Nursing		--	--	--	--	--	--	32	0	0
Hayward-New Haven ROP	07.0302	Voc. Nursing		37	0	0	33	0	0	35	4	11
Pittsburg Unified	07.0302	Voc. Nursing		24	21	88	19	14	74	39	20	51
San Jose Reg. Voc. Cent.	07.0302	Voc. Nursing		27	19	70	65	28	43	53	51	96
Southern												
Downey Unified	07.0302	Voc. Nursing		59	53	90	--	--	--	--	--	--
L.A. Unified	07.0302	Voc. Nursing		80	40	50	55	55	100	178	8	4
Lynwood Unified	07.0302	Voc. Nursing		37	37	100	--	--	--	--	--	--
L.A. Unified ROC/P	07.0302	Voc. Nursing		112	80	71	248	240	97	182	143	79
Redlands Unified	07.0302	Voc. Nursing		63	50	79	56	28	50	35	22	63
Conejo Valley Unified	07.0302	Voc. Nursing		23	23	100	22	22	100	--	--	--
Simi Valley Unified	07.0302	Voc. Nursing		--	--	--	--	--	--	*	41	
Central												
Chico Unified	07.0303	Nursing Assist.		33	33	100	--	--	--	--	--	--
Tranquility Union High	07.0303	Nursing Assist.		12	0	0	3	1	33	6	0	0
Valley ROP	07.0303	Nursing Assist.		49	60	122	83	56	67	51	36	71
Fresno Metro. ROP	07.0303	Nursing Assist.		182	128	70	145	77	53	50	32	64
49'er ROP	07.0303	Nursing Assist.		28	13	46	39	35	90	22	16	73
Plumas-Sierra-Lassen ROP	07.0303	Nursing Assist.		58	20	34	52	38	73	111	38	34
Sacramento City Unified	07.0303	Nursing Assist.		147	107	73	150	111	74	68	46	68

District/ROP	USOE Code	Program Title	Contract Indicate Year	% Completers/Year 1977-78			1978-79			1979-80		
				En.	Com.	%	En.	Com.	%	En.	Com.	%
San Juan Unified	07.0303	Nursing Assist.		*	0		*	0		*	0	
Sacramento County ROP	07.0303	Nursing Assist.		35	17	49	80	29	36	22	8	36
Manteca	07.0303	Nursing Assist.		10	10	100	--	--	--	--	--	--
San Joaquin County ROP	07.0303	Nursing Assist.		215	141	66	216	134	62	223	141	63
Stanislaus-Tuolumne-Mono ROP	07.0303	Nursing Assist.		26	26	100	--	--	--	--	--	--
Tulare Jt. Union High	07.0303	Nursing Assist.		25	15	60	*	21		*	11	
Tulare County Org. for VE	07.0303	Nursing Assist.		55	14	25	69	17	25	69	24	35
Glenn County ROP	07.0303	Nursing Assist.		--	--	--	17	16	94	7	6	86
Kern Union HS	07.0303	Nursing Assist.		*	0		*	8		35	22	63
West Side ROP	07.0303	Nursing Assist.		12	4	33	6	5	83	7	3	43
ROC Kern	07.0303	Nursing Assist.		82	51	62	64	52	81	44	42	95
Eastern Kern ROP	07.0303	Nursing Assist.		--	--	--	31	23	74	39	29	74
Hanford Jt. Union High	07.0303	Nursing Assist.		--	--	--	25	0	000	61	43	70
Kings County ROP	07.0303	Nursing Assist.		--	--	--	77	69	90	62	48	77
Madera County ROP	07.0303	Nursing Assist.		34	20	59	--	--	--	--	--	--
Merced Union High	07.0303	Nursing Assist.		--	--	--	--	--	--	*	74	
Merced County ROP	07.0303	Nursing Assist.		33	26	79	27	18	67	31	24	77
Clovis Unified	07.0303	Nursing Assist.		150	124	83	*	210		--	--	--
Fresno Unified	07.0303	Nursing Assist.		16	6	38	7	5	71	--	--	--
Coastal Region												
Hayward Unified	07.0303	Nursing Assist.		152	131	86	*	62		*	64	
San Lorenzo Unified	07.0303	Nursing Assist.		--	--	--	--	--	--	*	0	
Eden Area Voc.	07.0303	Nursing Assist.		138	229	166	68	56	82	--	--	--
Amador/Livermore ROP	07.0303	Nursing Assist.		37	27	73	16	15	94	41	13	32
Fremont-Newark ROP	07.0303	Nursing Assist.		35	0	0	62	123	198	103	103	100
Hayward-New Haven ROP	07.0303	Nursing Assist.		26	24	92	30	28	93	23	23	100
Mt. Diablo Unified	07.0303	Nursing Assist.		250	3	1	48	0	0	60	0	0
Richmond Unified	07.0303	Nursing Assist.		27	10	37	11	9	82	10	0	0
Contra Costa ROP	07.0303	Nursing Assist.		43	25	58	40	25	63	88	62	70
Marin County ROP	07.0303	Nursing Assist.		43	30	70	58	33	57	72	55	76
Mendocino County ROP	07.0303	Nursing Assist.		158	39	25	95	75	79	75	49	65
Pacific Grove Unified	07.0303	Nursing Assist.		41	41	100	*	27		*	0	
Salinas Union High	07.0303	Nursing Assist.		15	0	0	--	--	--	--	--	--
Mission Trails ROP	07.0303	Nursing Assist.		52	25	48	30	30	100	51	46	90
Napa County ROP	07.0303	Nursing Assist.		102	45	44	39	26	67	27	7	26

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				En.	Com.	%	En.	Com.	%	En.	Com.	%
Santa Clara S. County ROP	07.0303	Nursing Assist.		23	7	30	--	--	--	--	--	--
San Luis Obispo ROP	07.0303	Nursing Assist.		--	--	--	23	17	74	40	31	78
San Francisco County ROP	07.0303	Nursing Assist.		94	59	63	--	--	--	--	--	--
San Jose Reg. Voc. Center	07.0303	Nursing Assist.		220	88	40	171	99	58	121	79	65
Santa Clara N. County	07.0303	Nursing Assist.		--	--	--	25	29	116	24	8	33
Pajaro Valley Unified	07.0303	Nursing Assist.		41	30	73	*	24		*	0	
Santa Cruz City High	07.0303	Nursing Assist.		73	34	47	--	--	--	--	--	--
Santa Cruz County ROP	07.0303	Nursing Assist.		23	14	61	13	6	46	12	5	42
Fairfield-Suisun Unified	07.0303	Nursing Assist.		112	53	47	125	64	51	134	61	46
Sonoma County ROP	07.0303	Nursing Assist.		88	81	92	30	30	100	16	9	56
Southern Region												
Inyo County ROP	07.0303	Nursing Assist.		24	21	88	28	28	100	21	20	95
Alhambra City High	07.0303	Nursing Assist.		*	0		*	0		*	0	
ABC Unified	07.0303	Nursing Assist.		70	60	86	--	--	--	--	--	--
Baldwin Park Unified	07.0303	Nursing Assist.		9	29	322	36	30	83	*	0	
Bassett Unified	07.0303	Nursing Assist.		10	4	40	27	22	81	19	16	84
Centinela Valley Union	07.0303	Nursing Assist.		80	60	75	*	16		--	--	--
Charter Oak Unified	07.0303	Nursing Assist.		--	--	--	2	0	0	--	--	--
Covina-Valley Unified	07.0303	Nursing Assist.		21	14	67	41	25	61	43	27	63
Downey Unified	07.0303	Nursing Assist.		40	40	100	--	--	--	--	--	--
Duarte Unified	07.0303	Nursing Assist.		14	6	43	--	--	--	--	--	--
El Monte Union High	07.0303	Nursing Assist.		168	137	82	*	0		28	0	0
El Rancho Unified	07.0303	Nursing Assist.		18	13	72	*	11		*	0	
L.A. Unified	07.0303	Nursing Assist.		1342	406	30	1009	243	24	512	52	10
Montebello Unified	07.0303	Nursing Assist.		182	186	102	*	33		5	0	0
Norwalk-La Mirada Unified	07.0303	Nursing Assist.		26	105	404	--	--	--	--	--	--
Paramount Unified	07.0303	Nursing Assist.		26	19	73	20	27	135	21	20	95
Pasadena Unified	07.0303	Nursing Assist.		--	--	--	33	12	36	35	26	74
Pomona Unified	07.0303	Nursing Assist.		143	45	31	*	0		*	0	
Torrance Unified	07.0303	Nursing Assist.		12	12	100	--	--	--	--	--	--
Whittier Union High	07.0303	Nursing Assist.		90	54	60	38	38	100	32	27	84
Compton Unified	07.0303	Nursing Assist.		528	301	57	258	304	118	162	285	176
Hacienda-La Puente	07.0303	Nursing Assist.		--	--	--	*	16		*	11	
La Puente Valley ROP	07.0303	Nursing Assist.		208	99	48	145	25	17	117	9	08
Southeast L.A. County ROP	07.0303	Nursing Assist.		144	84	58	129	64	50	144	103	72
E. San Gabriel County ROP	07.0303	Nursing Assist.		314	248	79	202	131	65	216	127	59

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				En.	Com.	%	En.	Com.	%	En.	Com.	%
Long Beach Unif. ROP	07.0303	Nursing Assist.		44	29	66	28	25	89	73	48	66
L.A. Unif. ROC/P	07.0303	Nursing Assist.		671	390	58	583	583	100	975	593	61
L.A. County ROP	07.0303	Nursing Assist.		561	234	42	493	268	54	577	404	70
Southern Cal ROP	07.0303	Nursing Assist.		269	0	0	217	165	76	230	159	69
Fullerton Jt. Union High	07.0303	Nursing Assist.		22	2	9	--	--	--	--	--	--
Anaheim Union High	07.0303	Nursing Assist.		91	85	93	82	72	88	60	51	85
Garden Grove Unified	07.0303	Nursing Assist.		150	51	34	*	0		--	--	--
N. Orange County ROP	07.0303	Nursing Assist.		596	297	50	624	270	43	382	173	45
Capistrano-Laguna ROP	07.0303	Nursing Assist.		69	40	58	70	58	83	76	55	72
Coastline ROP	07.0303	Nursing Assist.		312	147	47	277	223	81	250	220	88
Moreno Valley Unified	07.0303	Nursing Assist.		--	--	--	*	30		*	0	
Riverside Unified	07.0303	Nursing Assist.		95	95	100	*	111		*	0	
Riverside County ROP	07.0303	Nursing Assist.		548	332	61	381	229	60	429	240	56
Fontana Unified	07.0303	Nursing Assist.		75	60	80	20	17	85	15	15	100
Redlands Unified	07.0303	Nursing Assist.		89	62	70	*	58		*	0	
Central County ROP	07.0303	Nursing Assist.		--	--	--	103	30	29	--	--	--
Rialto Unified	07.0303	Nursing Assist.		--	--	--	--	--	--	37	36	97
San Bernadino City Unif.	07.0303	Nursing Assist.		261	155	59	52	50	96	24	24	100
Yucaipa Joint Unified	07.0303	Nursing Assist.		*	33		--	--	--	--	--	--
Colton-Redlands-Yucaipa	07.0303	Nursing Assist.		235	119	51	40	50	125	83	31	37
Baldy View ROP	07.0303	Nursing Assist.		129	68	53	54	40	74	95	64	67
San Bernadino County ROP	07.0303	Nursing Assist.		13	4	31	31	27	87	32	22	69
Grossmont Union High	07.0303	Nursing Assist.		--	--	--	34	28	82	32	18	56
Poway Unified	07.0303	Nursing Assist.		--	--	--	2	2	100	--	--	--
Sweetwater Union High	07.0303	Nursing Assist.		232	162	70	*	90		*	0	
San Diego City Unif.	07.0303	Nursing Assist.		195	54	28	--	--	--	--	--	--
San Diego County ROP	07.0303	Nursing Assist.		364	197	54	326	214	66	375	121	32
Santa Barbara County ROP	07.0303	Nursing Assist.		158	100	63	174	90	52	--	--	--
Oxnard Union High	07.0303	Nursing Assist.		37	31	84	26	13	50	37	20	54
Simi Valley Unified	07.0303	Nursing Assist.		--	--	--	--	--	--	*	0	
Ventura Unified	07.0303	Nursing Assist.		105	68	65	*	0		1	1	100
Conejo Valley Unified	07.0303	Nursing Assist.		--	--	--	*	0		*	0	
Combined Regions												
Hayward Unified	07.0304	Psychiatric Aide		61	20	33	61	20	33	64	51	80
La Puente ROP	07.0304	Psychiatric Aide		83	27	33	22	0	0	14	1	7
L.A. County ROP	07.0304	Psychiatric Aide		46	18	39	33	13	39	42	16	39
Baldy View ROP	07.0304	Psychiatric Aide		149	47	32	43	24	56	--	--	--

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				En.	Com.	%	En.	Com.	%	En.	Com.	%
Kern Union High	07.0305	Surgical Tech.		*	0		*	0		5	2	40
Colton-Redlands-Yucaipa ROP	07.0305	Surgical Tech.		50	14	28	--	--	--	--	--	--
Simi Valley Unified	07.0305	Surgical Tech.		--	--	--	--	--	--	41	15	37
Humboldt County ROP	07.0307	Home Health Aide		26	5	19	1	0	0	20	0	0
Chino Unified	07.0307	Home Health Aide		--	--	--	--	--	--	*	12	
L.A. Unified ROC/P	07.0307	Home Health Aide		22	22	100	--	--	--	--	--	--
Fontana Unified	07.0307	Home Health Aide		22	15	68	--	--	--	--	--	--
Sweetwater Union High	07.0307	Home Health Aide		--	--	--	--	--	--	*	0	
Kings County ROP	07.0307	Home Health Aide		81	64	79	--	--	--	--	--	--
Sacramento County ROP	07.0307	Home Health Aide		15	6	40	--	--	--	--	--	--
Tehama County ROP	07.0307	Home Health Aide		17	13	76	--	--	--	--	--	--
Oak-Emery-Piedmont-Alameda ROP	07.0399	Nursing, Other		19	19	100	--	--	--	60	60	100
Amador/Livermore	07.0399	Nursing, Other		29	34	117	--	--	--	--	--	--
Napa County ROP	07.0399	Nursing, Other		--	--	--	17	10	59	48	19	40
L.A. Unified	07.0399	Nursing, Other		--	--	--	*	0		--	--	--
L.A. Unified ROC/P	07.0399	Nursing, Other		184	91	49	21	21	100	15	15	100
Beverly Hills Unified	07.0399	Nursing, Other		30	9	30	--	--	--	--	--	--
L.A. County ROP	07.0399	Nursing, Other		126	50	40	96	63	66	84	63	75
Fontana Unified	07.0399	Nursing, Other		--	--	--	11	9	82	12	10	83
San Diego Co. ROP	07.0399	Nursing, Other		69	41	59	80	52	65	75	24	32
Simi Valley	07.0399	Nursing, Other		--	--	--	--	--	--	*	0	
Fresno Met. ROC/P	07.0399	Nursing, Other		--	--	--	8	8	100	--	--	--
Riverside Unified	07.0399	Nursing, Other		--	--	--	*	0		--	--	--
L.A. County ROP	07.0402	Physical Therapy		19	0	0	--	--	--	--	--	--
L.A. Unified	07.0402	Physical Therapy		--	--	--	--	--	--	*	0	
Rowland Unified	07.0499	Rehabilitation, Other		--	--	--	*	0		*	0	
Southeast L.A. County ROP	07.0499	Rehabilitation, Other		70	65	93	91	63	69	80	74	93
L.A. County ROP	07.0499	Rehabilitation, Other		--	--	--	25	18	72	117	66	56
L.A. Unified ROC/P	07.0501	Radiologic Tech.		60	60	100	115	115	100	58	58	100
L.A. Unified ROC/P	07.0601	Ophthalmic Dispens.		--	--	--	--	--	--	11	0	0
Hacienda--La Puente	07.0800	Mental Health Technology		--	--	--	224	76	34	208	107	51
Colton-Redlands-Yucaipa	07.0800	Mental Health Technology		45	5	11	--	--	--	28	11	39
Kern Union High	07.0801	Mental Health Technician		--	--	--	--	-	--	6	3	50

District/ROP	USOE Code	Program Title	Contract Indicate Year	% Completers/Year 1977-78			1978-79			1979-80		
				En.	Com.	%	En.	Com.	%	En.	Com.	%
L.A. Unified ROC/P	07.0801	Mental Health Technician		30	30	100	37	37	100	15	15	100
San Diego Co. ROP	07.0801	Mental Health Technician		--	--	--	--	--	--	25	9	36
L.A. Unified ROC/P	07.0802	Mental Retardation Aide		--	--	--	97	97	100	17	0	000
Fresno Unified	07.0900	Misc Health Occ.		30	5	17	40	24	60	21	16	76
Simi Valley Unif.	07.0900	Misc Health Occ.		24	24	100	43	38	88	--	--	--
Kern Union	07.0900	Misc Health Occ.		--	--	--	--	--	--	*	194	
Placentia Unif.	07.0900	Misc Health Occ.		--	--	--	47	26	55	--	--	--
49'er ROP	07.0900	Misc Health Occ.		58	21	36	--	--	--	24	10	42
Sacramento County ROP	07.0900	Misc Health Occ.		282	184	65	420	156	37	241	155	64
Shasta-Trinity ROP	07.0900	Misc Health Occ.		64	56	88	98	67	68	108	85	79
Santa Clara So. County ROP	07.0900	Misc Health Occ.		71	19	27	--	--	--	--	--	--
Santa Clara No. County ROP	07.0900	Misc Health Occ.		--	--	--	21	36	171	24	17	71
Capistrano-Laguna ROP	07.0900	Misc Health Occ.		60	32	53	67	56	84	62	51	82
Central County ROP	07.0900	Misc Health Occ.		731	340	47	346	247	71	84	78	93
Solano County ROP	07.0901	Electroencephalograph Technician		51	37	73	--	--	--	--	--	--
Hayward Unified	07.0902	Electrocardiograph Technician		--	--	--	*	40		--	--	--
Eden Area Voc Program	07.0903	Inhalation Therapy		52	50	96	23	23	100	--	--	--
San Lorenzo Unified	07.0903	Inhalation Therapy		--	--	--	--	--	--	17	0	0
Oak-Emery-Piedmont-Alameda ROP	07.0903	Inhalation Therapy		61	15	25	24	9	38	72	47	65
Colton-Redlands-Yucaipa ROP	07.0903	Inhalation Therapy		30	21	70	--	--	--	--	--	--
Montebello Unified	07.0903	Inhalation Therapy		--	--	--	41	22	54	9	9	100
Hacienda--La Puente	07.0903	Inhalation Therapy		--	--	--	256	52	20	314	65	21
Simi Valley Unified	07.0903	Inhalation Therapy		--	--	--	--	--	--	19	0	0
Fresno Metro. ROC/P	07.0904	Medical Asst.		42	26	62	23	16	70	30	27	90
Sacramento City Unified	07.0904	Medical Asst.		99	72	73	65	9	14	50	23	46
San Juan Unified	07.0904	Medical Asst.		38	25	66	--	--	--	--	--	--
Contra Costa ROP	07.0904	Medical Asst.		1	1	100	24	24	100	--	--	--
Yolo County ROP	07.0904	Medical Asst.		24	14	58	--	--	--	--	--	--
So. San Francisco Unif.	07.0904	Medical Asst.		52	15	29	46	25	54	26	16	62
San Jose Reg Voc. Cen.	07.0904	Medical Asst.		119	58	49	125	11	09	140	23	16
Solano County ROP	07.0904	Medical Asst.		43	29	67	33	24	73	35	24	69
Whittier Union High	07.0904	Medical Asst.		*	30		--	--	--	--	--	--
Hacienda-La Puente	07.0904	Medical Asst.		--	--	--	*	16		*	24	
Pacific Grove Unified	07.0904	Medical Asst.		--	--	--	--	--	--	*	0	

District/ROP	USOE Code	Program Title	Contract Indicate Year	% Completers/Year 1977-78			1978-79			1979-80		
				En.	Com.	%	En.	Com.	%	En.	Com.	%
Rowland Unified	07.0904	Medical Asst.		14	11	79	--	--	--	--	--	--
L.A. County ROP	07.0904	Medical Asst.		216	33	15	62	9	15	54	16	30
So. Calif. ROC	07.0904	Medical Asst.		375	0	0	353	231	65	412	281	68
Garden Grove Unif.	07.0904	Medical Asst.		103	34	33	82	32	39	128	38	30
Capistrano-Laguna ROP	07.0904	Medical Asst.		21	18	86	--	--	--	26	15	58
Central County ROP	07.0904	Medical Asst.		116	72	62	157	33	21	248	90	36
Simi Valley Unified	07.0904	Medical Asst.		--	--	--	--	--	--	84	40	48
Santa Cruz County ROP	07.0905	Central Supply Technician		16	11	69	27	12	44	23	3	13
Long Beach Unified	07.0905	Central Supply Technician		12	8	67	3	3	100	16	7	44
L.A. Unified ROP	07.0905	Central Supply Technician		70	70	100	--	--	--	--	--	--
Fairfield-Suisun Unif.	07.0906	Comm. Health Aide		45	24	53	12	9	75	*	9	
Stanislaus-Tuolumne-Mono ROP	07.0906	Comm. Health Aide		19	4	21	--	--	--	--	--	--
Yolo County ROP	07.0906	Comm. Health Aide		9	0	0	--	--	--	--	--	--
San Mateo Union High	07.0906	Comm. Health Aide		19	0	0	--	--	--	--	--	--
Huntington Beach Union High	07.0906	Comm. Health Aide		70	34	49	--	--	--	--	--	--
Placentia Unified	07.0906	Comm. Health Aide		56	8	14	--	--	--	--	--	--
Fresno Metro. ROC/P	07.0907	Med. Emerg. Tech.		--	--	--	--	--	--	25	23	92
Ukiah Unified	07.0907	Med. Emerg. Tech.		100	102	102	--	--	--	--	--	--
Santa Cruz County ROP	07.0907	Med. Emerg. Tech.		*	94	94	184	153	83	288	1	.4
Inyo County ROP	07.0907	Med. Emerg. Tech.		77	51	66	75	75	100	115	100	87
L.A. County ROP	07.0907	Med. Emerg. Tech.		153	47	31	87	60	69	202	120	59
So. Calif. ROC	07.0907	Med. Emerg. Tech.		181	0	0	218	149	68	197	149	76
Capistrano-Laguna ROP	07.0907	Med. Emerg. Tech.		91	47	52	71	55	77	91	66	73
Chino Unified	07.0907	Med. Emerg. Tech.		--	--	--	--	--	--	*	30	
Colton-Redlands-Yucaipa ROP	07.0907	Med. Emerg. Tech.		92	33	36	--	--	--	58	27	47
Long Beach Unified	07.0908	Food Service Supervisor		11	9	82	--	--	--	18	10	56
El Dorado ROP	07.9900	Health Occ. Educ. Other		8	7	88	5	5	100	--	--	--
Kern Union High	07.9900	Health Occ. Educ. Other		28	2	7	--	--	--	13	1	8

District/ROP	USOE Code	Program Title	Contract Indicate Year	% Completers/Year 1977-78			1978-79			1979-80		
				En.	Com.	%	En.	Com.	%	En.	Com.	%
Kern ROC	07.9900	Health Occ. Educ, Other		--	--	--	--	--	--	49	44	90
Sierra Sands Unified	07.9900	Health Occ. Educ. Other		13	5	38	--	--	--	--	--	--
Madera County ROP	07.9900	Health Occ. Educ. Other		1	1	100	--	--	--	--	--	--
Stanislaus-Tuolumne-Mono ROP	07.9900	Health Occ. Educ. Other		41	38	93	87	73	84	99	78	79
Berkeley Unified	07.9900	Health Occ. Educ. Other		33	9	27	33	20	61	20	11	55
Eden Area Voc. Program	07.9900	Health Occ. Educ. Other		--	--	--	--	--	--	41	30	73
San Francisco Unif.	07.9900	Health Occ. Educ. Other		49	0	0	9	5	56	86	86	100
San Francisco County	07.9900	Health Occ. Educ. Other		11	6	55	--	--	--	--	--	--
Jefferson Union High	07.9900	Health Occ. Educ. Other		27	0	0	50	0	0	20	7	35
San Mateo Union High	07.9900	Health Occ. Educ. Other		17	0	0	23	14	61	--	--	--
Downey Unified	07.9900	Health Occ. Educ. Other		40	40	100	15	0	0	10	0	0
Long Beach Unified ROC/P	07.9900	Health Occ. Educ. Other		100	20	20	3	2	67	--	--	--
L.A. Unified	07.9900	Health Occ. Educ. Other		--	--	--	--	--	--	*	0	
L.A. Unified ROC/P	07.9900	Health Occ. Educ. Other		357	210	59	44	44	100	77	77	100
L.A. County ROP	07.9900	Health Occ. Educ. Other		--	--	--	--	--	--	18	15	83
Los Angeles High	07.9900	Health Occ. Educ. Other		117	65	56	--	--	--	--	--	--
Fairfield-Suisun Unified	07.9900	Health Occ. Educ. Other		21	8	38	--	--	--	--	--	--
Chaffey Jt. Union High	07.9900	Health Occ. Educ. Other		20	3	15	13	8	62	--	--	--
Central County ROP	07.9900	Health Occ. Educ. Other		26	13	50	48	30	63	51	41	80

District/ROP	USOE Code	Program Title	Contract Indicate Year	% Completers/Year								
				1977-78			1978-79			1979-80		
				En.	Com.	%	En.	Com.	%	En.	Com.	%
Central Union High	07.9900	Health Occ. Educ. Other		33	9	27	--	--	--	--	--	--
Fontana Unified	07.9900	Health Occ. Educ. Other		--	--	--	9	9	100	13	16	123
Wm. S. Hart Union High	07.9900	Health Occ. Educ. Other		12	12	100	--	--	--	--	--	--
Redlands Unified	07.9900	Health Occ. Educ. Other		--	--	--	*	231		221	0	0
Rialto Unified	07.9900	Health Occ. Educ. Other		45	22	49	70	68	97	--	--	--
Colton-Redlands-Yucaipa ROP	07.9900	Health Occ. Educ. Other		--	--	--	78	66	85	23	18	78
Moreno Valley Unified	07.9900	Health Occ. Educ. Other		121	2	1	--	--	--	--	--	--
Baldy View ROP	07.9900	Health Occ. Educ. Other		110	29	26	50	26	52	99	23	23
El Dorado ROP	07.9900	Health Occ. Educ. Other		8	7	88	5	5	100	--	--	--

Appendix B
Percentage of Completers, by Program

Summary of Completers of Health Careers Education Programs

USOE Code	Program Title	Contract (Check-yes)	% Completers/Year 1977-78			1978-79			1979-80		
			En.	Com.	%	En.	Com.	%	En.	Com.	%
07.0000	Health Occ.Educ.		--	--	--	13	11	85	12	0	0
07.0101	Dental Assistant		1,932	965	50	1,844	1,048	57	1,750	1,068	61
07.0101C	Dental Assistant		--	--	--	--	--	--	181	60	33
07.0103	Dental Lab Tech.		--	--	--	72	34	47	332	201	60
07.0103C	Dental Lab Tech.		--	--	--	--	--	--	43	21	49
07.0199	Dental, Other		94	68	72	50	34	68	45	31	69
07.0200	Medical Lab Tech.		71	64	90	50	40	80	35	33	94
07.0203	Medical Lab Asst.		184	93	51	177	140	79	445	202	45
07.0299	Medical Lab Tech., Other		--	--	--	--	--	--	13	13	100
07.0300	Nursing		303	302	99	99	91	92	31	0	0
07.0302	Vocational Nursing		722	499	69	706	580	82	745	449	60
07.0303	Nursing Assistant		11,762	6,568	56	7,560	5,500	73	6,943	4,276	62
07.0304	Psychiatric Aide		339	112	33	159	57	36	120	68	57
07.0305	Surgical Tech.		50	14	28	--	--	--	46	17	37
07.0307	Home Health Aide		183	125	68	1	0	0	20	12	60

*Denotes short-term adult enrollees only.
**Denotes more than 100% completion rate due to inclusion of short-term adults or enrollees from prior years.
--Denotes no reported program.

USOE Code	Program Title	Contract (Check-yes)	% Completers/Year 1977-78			1978-79			1979-80		
			En.	Com.	%	En.	Com.	%	En.	Com.	%
07.0399	Nursing, Other		457	244	53	233	203	87	294	191	65
07.0402	Physical Therapy		--	--	--	--	--	--	--	--	--
07.0499	Rehabilitation, Other		70	65	93	116	81	70	197	140	71
07.0501	Radiologic Tech.		--	--	--	--	--	--	58	58	100
07.0601	Ophthalmic Tech.		--	--	--	--	--	--	11	0	0
07.0800	Mental Health Tech.		45	5	11	224	76	34	236	118	50
07.0801	Mental Health Technicians		30	30	100	37	37	100	46	27	59
07.0802	Mental Retardation Aide		--	--	--	--	--	--	17	0	0
07.0900	Misc.Health Occupations		1,320	685	52	1,082	650	60	564	606	107
07.0903	Inhalation Therapy		143	86	60	344	106	31	431	121	28
07.0904	Medical Assistant		1,263	438	35	970	430	44	1,233	617	50
07.0905	Central Supply Tech.		98	89	91	30	15	50	39	10	26
07.0906	Comm Health Aide		154	32	21	12	9	75	*	9	
07.0907	Medical Emergency Tech.		696	374	54	635	492	77	976	516	53
07.0908	Food Services Supervisor		11	9	82	--	--	--	18	10	56
07.9900	Health Occup, Ed., Other		1,231	611	50	537	612	114	840	447	53
	Total		21,158	11,478	54	14,951	10,246	69	15,721	9,321	59

Appendix C
Attrition Survey Instrument

Please return to:
Barbara Nemko
Department of Applied Behavioral Sciences
AOB IV
University of California, Davis, CA 95616

Do Not Write In This Space

ATTRITION SURVEY
District Personnel Questionnaire

The following are reasons why students might not complete Health Career programs. For those students who have dropped out of your program please circle the number which indicates the degree to which you feel that each of these factors may be responsible. (1-3) ___

	Not at All	To a Little Extent	To Some Extent	To a Great Extent	
I. Student-Related Factors					
The following factors interfere with student's ability to successfully master the content of the program:					
A. Academic deficiencies (reading, math)	1	2	3	4	(4) ___
B. Poor organization/study habits	1	2	3	4	(5) ___
C. Lack of motivation	1	2	3	4	(6) ___
D. Discipline problems and/or poor attitude	1	2	3	4	(7) ___
E. Excessive absence	1	2	3	4	(8) ___
F. Apparent alcohol problem	1	2	3	4	(9) ___
G. Apparent drug problem	1	2	3	4	(10) ___
H. Language barrier	1	2	3	4	(11) ___
The following nonacademic factors interfere with student's completing the program:					
I. Lack of parental support for remaining in program	1	2	3	4	(12) ___
J. Lack of peer support for remaining in program (may include pressure to drop out)	1	2	3	4	(13) ___

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University of California, Davis, CA 95616

	Not at All	To a Little Extent	To Some Extent	To a Great Extent	Do Not Write In This Space
K. Excessive transportation time to and from program	1	2	3	4	(14) ___
L. Pregnancy	1	2	3	4	(15) ___
M. Family problems	1	2	3	4	(16) ___
N. Cost of necessary supplies and equipment	1	2	3	4	(17) ___
O. Program interferes with student's job.	1	2	3	4	(18) ___
P. Student is below minimum age and must drop out.	1	2	3	4	(19) ___
Q. Student lacks necessary child care services.	1	2	3	4	(20) ___
R. Health problems	1	2	3	4	(21) ___
S. Student passes proficiency exam (GED), obtains HS diploma and drops all classes.	1	2	3	4	(22) ___
T. Student didn't understand the nature of the program at time of enrollment.	1	2	3	4	(23) ___
II. School-Related Factors					
A. Remedial help is not available or not utilized.	1	2	3	4	(24) ___
B. Appropriate career guidance and counseling are not available or not utilized.	1	2	3	4	(25) ___
C. There are not enough community classroom placements.	1	2	3	4	(26) ___

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	Not at All	To a Little Extent	To Some Extent	To a Great Extent	Do Not Write In This Space
D. The program needs improvement. Please explain: _____	1	2	3	4	(27) ___
E. Program must be dropped because qualified teacher can't be found.	1	2	3	4	(28) ___
F. Student-teacher ratio is too high.	1	2	3	4	(29) ___
G. Inadequate teacher supervision is provided at work placement site.	1	2	3	4	(30) ___
H. Teacher counsels student out of program because student shows little chance of succeeding.	1	2	3	4	(31) ___
I. Student needs to make up a graduation requirement.	1	2	3	4	(32) ___
III. On-site Training-Related Factors					
A. Students expected more "hands-on" patient care earlier in the program.	1	2	3	4	(33) ___
B. Students feel uncomfortable with the way they are treated by health care staff in training facility.	1	2	3	4	(34) ___
IV. Career-Related Factors					
A. The status of training-related employment is lower than student expectations.	1	2	3	4	(35) ___
B. The pay for training-related employment is lower than student expectations.	1	2	3	4	(36) ___

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	Not at All	To a Little Extent	To Some Extent	To a Great Extent	Do Not Write In This Space
C. Student perceives little opportunity for future career advancement.	1	2	3	4	(37) ___
D. The work environment for training-related employment is undesirable, i.e., nights, weekends, holidays.	1	2	3	4	(38) ___

V. Any Other Factors: _____

_____

_____

_____

Thank you for taking time to complete this survey. There are just a few more questions which will only take a minute or two.

How are leavers counted in your program? Check one.

1. Any student who has enrolled but does not complete the program (39) ___
2. Any student who was enrolled during the second week of classes but does not complete the program
3. Any student who was enrolled and attended at least 20 hours (4 weeks) but does not complete the program
4. Any student who has left the program after completing 50% of the competencies
5. Any student who has left the program with sufficient entry-level job skills to work in the field or in an occupation related to that field.

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Do Not Write In This Space

6. Any student who was enrolled in and attended a program of vocational education and who left the program and institution without completing the program.

7. Other: (Please explain) _____

_____

Please describe any ideas you have to increase the number of students who complete health career programs. _____

_____

_____

Position of person completing form. (Check One) (40) ___

____ 1. Teacher
____ 2. Counselor
____ 3. Administrator
____ 4. Other

Facility: (41) ___

____ 1. Secondary school
____ 2. ROP
____ 3. ROC
____ 4. Adult School

Students: (42) ___

____ 1. Secondary
____ 2. Adult
____ 3. Both

Area taught: (43) ___

____ 1. Medical assisting
____ 2. Dental assisting
____ 3. Nursing assistant
____ 4. Hospital occupations

Type of District: (44) ___

____ 1. Rural
____ 2. Urban
____ 3. Suburban

Size of Program: (45) ___

____ 1. Fewer than 50 students
____ 2. Between 50 and 150 students
____ 3. Greater than 150 students

70

Appendix D
Telephone Survey Instrument

Leavers Telephone Survey

Name _____ Phone Number _____

1. What program were you enrolled in? _____

_____

2. How did you hear about the program? _____

3. Why did you enroll in that program? _____

_____

4. How long were you in the program? _____

_____

5. Why did you leave the program? _____

_____

6. How would you rate the quality of the program on a 1-5 scale, if one is really good and five is bad? _____

7. What suggestions do you have for improving the program? _____

_____

8. Is there anything else you would like to tell me about your experience in the program? _____

_____

9. What are you doing now? _____

_____

Appendix E
Program Completion, by Ethnicity

State Totals

Ethnicity	USOE Code	Program Title	1979-1980 E	C	%
State Total	07.0303	Nursing Assist.			
White			3,617	2,216	61
Hispanic			1,561	917	59
Black			1,361	881	65
Filipino			113	87	77
Asian			233	138	59
Amer. Ind.			58	37	64
State Total	07.0101	Dental Assist.			
White			1,081	671	62
Hispanic			479	291	61
Black			111	72	65
Filipino			20	11	55
Asian			55	20	36
Amer. Ind.			4	3	75
State Total	07.0304	Psychiatric Aide			
White			90	53	59
Hispanic			19	8	42
Black			5	2	40
Filipino			1	0	0
Asian			3	3	100
Am. Ind.			2	2	100
State Total	07.0305	Surgical Tech.			
White			37	14	38
Hispanic			4	2	50
Black			1	0	0
Filipino			3	1	33
Asian			1	0	0

State Totals
Program Completion by Ethnicity

Ethnicity	USOE Code	Program Title	1979-1980 E	C	%
State Total	07.0307	Home Health Aide			
White			14	6	43
Hispanic			1	6	--
Black			1	0	0
Filipino			0	0	0
Asian			0	0	0
Amer. Ind.			4	0	0
State Total	07.0399	Nursing, Other			
White			143	72	50
Hispanic			47	33	70
Black			87	75	86
Filipino			6	5	83
Asian			9	6	67
Amer. Ind.			2	0	--
State Total	07.0499	Rehab., Other			
White			143	99	69
Hispanic			20	15	75
Black			32	24	75
Filipino			--	--	--
Asian			2	2	100
Amer. Ind.			--	--	--
State Total	07.0800	Mental Health Tech.			
White			148	84	57
Hispanic			70	28	40
Black			13	5	38
Asian			5	1	20
State Total	07.0900	Misc. Health Occ.			
White			416	445	107
Hispanic			67	95	142
Black			41	38	93
Filipino			6	5	83
Asian			25	17	68
Amer. Ind.			9	6	66

State Totals
Program Completion by Ethnicity

Ethnicity	USOE Code	Program Title	1979-1980 E	C	%
State Total	07.0903	Inhalation Ther.			
White			170	36	21
Hispanic			169	40	24
Black			55	28	51
Filipino			7	3	43
Asian			28	12	43
Amer. Ind.			2	2	100
State Total	07.0904	Medical Asst.			
White			763	404	53
Hispanic			274	142	52
Black			99	28	28
Filipino			19	9	47
Asian			67	30	45
Amer. Ind.			11	4	36
State Total	07.0905	Central Supply Tech.			
White			28	6	21
Hispanic			4	4	100
Black			6	0	--
Filipino			1	0	--
State Total	07.0905	Comm. Health Aide			
White			--	5	--
Hispanic			--	2	--
Black			--	1	--
Filipino			--	0	--
Asian			--	1	--
Amer. Ind.			--	0	--
State Total	07.0907	Med. Emerg. Tech.			
White			815	388	48
Hispanic			84	54	64
Black			46	32	70
Filipino			1	1	100
Asian			20	15	75
Amer. Ind.			10	6	60

State Totals
Program Completion by Ethnicity

Ethnicity	USOE Code	Program Title	1979-1980 E	C	%
State Total	07.0908	Food Serv. Super.			
White			7	4	57
Hispanic			1	0	0
Black			9	5	56
Filipino			1	1	100
State Total	07.9900	Health Occup. Ed., Others			
White			553	232	42
Hispanic			112	79	71
Black			105	71	68
Filipino			14	12	86
Asian			52	50	96
Amer. Ind.			4	3	75
State Total	07.0199	Dental, Others			
White			34	22	65
Hispanic			5	4	80
Black			5	4	80
Filipino			0	0	0
Asian			0	0	0
Amer. Ind.			1	1	100
State Total	07.0200	Medical Lab Tech.			
White			35	33	
State Total	07.0000	Health Occup. Ed.			
White			11	0	0
Hispanic			1	0	0

State Totals
Program Completion by Ethnicity

Ethnicity	USOE Code	Program Title	1979-1980 E	C	%
State Total	07.0101C	Dental Asst.			
White			86	38	44
Hispanic			48	8	17
Black			40	13	33
Filipino			1	1	100
Asian			6	1	17
State Total	07.0103C	Dental Lab Tech.			
White			190	111	58
Hispanic			112	74	66
Black			14	7	50
Asian			15	8	53
Amer. Ind.			1	1	100
State Total	07.0103	Dental Lab Tech.			
White			17	83	47
Hispanic			14	7	50
Black			9	4	44
Asian			3	2	67
State Total	07.0299	Med. Lab Tech., Others			
White			3	3	100
Hispanic			5	5	100
Black			1	1	100
Asian			4	4	100
State Total	07.0203	Med. Lab Asst.			
White			262	117	.45
Hispanic			53	34	.64
Black			65	33	.51
Filipino			16	10	.63
Asian			39	10	.26
Amer. Ind.			10	2	.20

State Totals
Program Completion by Ethnicity

Ethnicity	USOE Code	Program Title	1979-1980 E	C	%
State Total	07.0300	Nursing			
White			27	0	0
Hispanic			1	0	0
Asian			3	0	0
State Total	07.0302	Vocational Nurse			
White			411	278	68
Hispanic			135	85	63
Black			152	57	38
Filipino			15	5	33
Amer. Indian			7	3	43
State Total	07.0501	Radiologic Tech.			
White			13	13	100
Hispanic			28	28	100
Black			16	16	100
Asian			1	1	100
State Total	07.0601	Ophthalmic Tech.			
White			4	0	0
Hispanic			2	0	0
Black			4	0	0
Asian			1	0	0
State Total	07.0802	Mental Retardation Aide			
White			3	0	0
Black			13	0	0
Asian			1	0	0
State Total	07.0801	Mental Health Tech.			
White			39	23	59
Hispanic			3	2	67
Black			4	2	50

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