

# Study Finds Respiratory Care Instruction Very Limited In Nursing Schools

by Robert Czachowski, PhD

The Indiana University Center for Survey Research (CSR) conducted a nationwide study comparing the number of hours of respiratory care instruction in nursing schools with that of respiratory therapy programs for the American Association for Respiratory Care. The study's major conclusion is that respiratory care instruction is very limited in nursing programs when compared to respiratory therapy programs. This article details the survey results, methodology, and discussion of the study.

## Study objectives

1992 AARC President Robert Demers, BS, RRT, established the Ad Hoc Committee to Review Allied Health Curricula during his presidency to conduct a study comparing respiratory care curricula with those of other health care professions. The committee's main objective was to identify cross-training opportunities for respiratory care practitioners as well as to determine the additional respiratory care instruction that other health professionals would need before providing respiratory care to patients.

The committee examined the curricula of a number of allied health professions and determined that a curricula comparison should be made between respiratory care and nursing programs exclusively. Furthermore, the committee felt that the scope of the analysis should be limited to a discrete set of 15 typical respiratory care procedures rather than a comparison of the entire curricula of each program.

## University research agency conducts survey

In order to ensure the validity and objectivity of the survey, the AARC sought an outside agency to conduct the study. In addition, the study had to be completed in a timely manner. The AARC Board of Directors suggested that requests for proposals be sent to universities that conduct research for clients.

Five university research agencies were asked to submit proposals, but only three chose to submit bids. Ultimately, the AARC selected the Indiana University Center for Survey Research to undertake the project.

## Study methodology

The survey was pretested from Dec. 2, 1993, through Jan. 5, 1994. Twenty-five nursing schools and 15 respiratory therapy programs were randomly selected to serve as the pretest respondents. The information gathered from those pretest surveys led to minor modifications to the final questionnaire.

The survey was conducted from Feb. 14 through June 24, 1994. A total of 1,077 nursing schools and 223 respiratory therapy programs participated (see survey samples below).

The following procedures were used in collecting the data from nursing schools: On Feb. 14, 1994, a four-page mail questionnaire, a cover letter on CSR stationery explaining the study, and a postage-paid return envelope were mailed to nursing schools. Approximately one month later, a postcard was mailed to all nursing schools in the sample, thanking them for returning the questionnaire if they had already done so and urging them to return the questionnaire if they had not. By the end of March, 615 questionnaires had been returned.

On April 1, the CSR sent a second questionnaire, letter, and postage-paid return envelope to those nursing programs that had not responded. On May 6, the CSA began calling the 548 institutions from whom no response had been received in an attempt to determine the reasons for nonparticipation. As a result of the telephone calls, 311 institutions asked for a third questionnaire. These participants were assigned a special code and then received another questionnaire by mail. This resulted in another 157 questionnaires being returned by nursing programs prior to the cutoff date of June 24, 1994.

Whenever CSR telephone interviewers were told by nursing programs that the questionnaire would not be returned, they attempted to ascertain why. Thus, special finalization codes were given to those cases in which such information was obtained.

On Feb. 21, respiratory therapy programs were sent a letter on AARC stationery stating that a questionnaire was enclosed. Two days later, the CSR began receiving calls on its 800-number from respondents stating that the questionnaire had not been included. On Feb. 24, the CSR sent out a second mailing that included the questionnaire and a letter from the CSR apologizing for the oversight.

On March 17, the CSR sent a postcard to all of the respiratory therapy programs, thanking them for returning the questionnaire if they had already done so and urging them to do so if they had not. By April 15, CSR had received 134 returned questionnaires. On that date, a second questionnaire and letter were sent to programs that had not responded.

By May 24, 1994, 128 respiratory therapy programs still had not responded, so CSR telephone interviewers began calling those institutions. As with the nursing school respondents, respiratory therapy program respondents were urged to return a mail questionnaire. If they refused to do so, telephone interviewers were instructed to ascertain why, and a special finalization code was assigned.

A total of 59 questionnaires were sent to respiratory therapy programs during a third mailing. Prior to the cutoff date of June 24, CSR had received 34 answered questionnaires.

A few of the final dispositions need further explanation. "Refusal by informant for respondent during phone call" means that CSR telephone interviewers were unable to speak directly with the named respondent and were told by an informant that the respondent would not be completing the survey. "Respondent persistently unavailable by phone: indicates that a telephone interviewer left numerous messages for the respondent with an informant or on voice mail, but the calls were never returned and neither was a questionnaire.

"No questionnaire returned" means that although CSR interviewers called the institution and were told that the mail questionnaire would be returned, the questionnaire had not reached the CSR by the cutoff date of June 24, 1994.

The CSR entered the data into its computer using the Computer-Assisted Survey Execution System. In order to maintain a high standard of quality and accuracy in the survey, the CSR monitored coding and data entry periodically. Approximately 10 percent of the returned questionnaires were randomly chosen and rechecked to determine that the correct data had been entered.

### **Details of study results**

The information collected from the various programs on the 15 respiratory therapy tasks is presented in nine figures throughout this article.

Figure 1 reflects responses from associate degree registered nurse programs. Data collected from registered nurse diploma programs is shown in Figure 2. The frequency distribution for registered nurse baccalaureate degree programs is in Figure 3. Figures 4 and 5 display outcomes from respiratory therapy technician and respiratory therapist programs, respectively.

In each category, although a respondent might have indicated that a certain kind of program was offered, some respondents answered no questions regarding the number of hours for individual tasks.

Frequently, a respondent provided unusable data.. However, in almost every instance, the respondent provided a written comment and not a numerical answer. For example, respondents often indicated "don't know" when answering a particular questions which explains why there is a disparity between the total number of respondents to the survey and the numbers in any of the columns. A total of 637 of the respondents indicated that they offer an associate degree program in nursing; these 637 respondents should have answered Section 2 of the questionnaire that asked about contact hours. However, 20 of the respondents answered no questions in Section 2; therefore, the frequency distributions describe the data for only 617 cases.

Also, 79 nursing school respondents indicated that they offer a three-year degree program, but six of the returned questionnaires had no data in the section for diploma programs.

And while 360 nursing school respondents indicated they offer an entry-level baccalaureate degree program, 37 of them answered no questions at all in the section on contact hours. Therefore, the data for only 323 programs is contained in the frequency distributions.

Written comments provided by all respondents were collected by CSR and, in the case of nursing programs, comprised 303 pages of text.

The information presented in the first column of the nursing school tables in Figures 1-3 is broken down into minutes and hours. In each case, the first number depicts the number of respondents and the second depicts the mean contact time. The survey questionnaire asked specifically for contact hours. When completed surveys were submitted, however, many nursing school programs had responded not in hours but in minutes. This prompted the CSR to enter the data in a separate column for minutes.

Some nursing school respondents indicated "0" time was spent teaching or learning a specific task in a given setting, or they left that portion of the survey blank. Although these programs were included in calculating means, they have been separated out to demonstrate the frequency that a topic is not even introduced in a given setting. These data are reflected in Figures 6, 7, and 9.

### **Study findings similar to those of other surveys**

An examination of the data collected in this study appears to substantiate findings of similar surveys conducted by AARC state affiliates in Texas, Florida, and Kentucky. In each instance, the state surveyors concluded that the teaching of respiratory therapy subjects in nursing schools was extremely limited.

In Kentucky, the figures suggested that between 1.1 percent and 1.4 percent of the total contact hours in nursing programs in that state were devoted to respiratory care procedures. In Texas, the numbers ranged between .2 percent and 1.1 percent. The Florida study compared gross numbers and suggested that in some skill areas, therapist training exceeded nurse training by

36 times.

The significant difference in the current study and these earlier surveys is that the current study reflects data collected from the entire United States by an outside agency (CSR) with unimpeachable credentials.

### **Faculty information**

Another piece of information collected was faculty composition of both nursing and respiratory care programs. Figure 8 depicts the involvement of respiratory care practitioners in the education of nurses. The figure in parentheses indicates the total number of respondents. The numbers in the columns indicate the number of nursing education programs employing one or more respiratory care practitioners.

An analysis of written comments on this subject suggests that hospitalbased diploma programs utilize staff of the sponsoring hospital in a faculty role. The sharing of faculty from a respiratory therapy program co-located at the same college or university is a normal procedure.

One hospital-based program respondent even related that "guest lecturers" from the respiratory therapy department were used. Another respondent regretted the lack of collaboration of nursing and RC faculty, saying that the respiratory therapist instructors do not like the nursing faculty to show nursing students *anything* about the ventilators. The respondent said, "They have advised us to teach (nursing) students the phone number of respiratory care!"

### **Summary of study findings**

The findings of this study suggest that the entry-level registered nurse, regardless of the source of education, will have had extremely limited didactic instruction in the 15 typical respiratory therapy procedures included in this survey. The significance of that difference is magnified when compared to respiratory therapy programs, which have provided much more instruction in these procedures. Factoring in the number of programs that do not even address some of these respiratory therapy tasks, there should be real concern about arbitrarily transferring respiratory care responsibilities in the clinical setting.

Furthermore, the inability of nursing school respondents to provide hard data regarding clinical experience/practice makes the issue even more problematic. Clinical exposure of nursing students to respiratory procedures may or may not occur, depending on patient availability. This situation creates another gap in the knowledge base of the entry-level nurse. Additionally, nursing school faculties are dominated by nurse educators. Utilization of respiratory care practitioners as faculty in nursing schools is severely limited, with none at all being utilized in the associate degree programs responding to this survey.

By no means do the data from this study suggest that nurses are incapable of performing the specific respiratory care tasks included in the survey. However, it is clear that entry-level nurses who do not obtain significant postgraduate education cannot perform respiratory care procedures.

Without evidence of the necessary educational preparation and a demonstrated ability to perform typical respiratory care tasks, the transfer of job responsibility should be seriously considered prior to any such undertaking.

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**Figure 1. Mean time spent in Associate Degree Nursing Programs teaching 15 selected subjects. n=617\***

Subjects	Didactic or Classroom**		Nonclassical Laboratory		Clinical Experience/Practice	
	Programs/Minutes	Programs/Hours	Programs	Hours	Programs	Hours
Oxygen Therapy	82/30	443/2.4	286	1.8	218	21.2
Mechanical Ventilators	135/25	349/1.6	229	.71	232	10.2
Chest Physiotherapy	235/30	225/1.3	192	.79	175	7.2
Intermittent Positive Pressure Breathing (IPPB) Therapy	241/21	161/.9	173	.21	160	3.5
Continuous Positive Airway Pressure (CPAP)	222/20	171/.84	176	.2	157	3.8
Incentive Spirometry	326/21	126/1.4	136	.6	184	13.9
Aerosolized Drug Administration	257/21	149/1.2	161	.7	159	6.9
Metered Dose Inhalers (MDI)	249/19	141/.87	142	.2	141	9.0
Pulse Oximetry/ Transcutaneous O <sub>2</sub> and CO <sub>2</sub> Monitoring	298/20	169/1.45	168	.32	181	10.7
Pulmonary Function Testing	282/22	169/1.37	183	.10	159	1.4
Respiratory Home Care	115/20	242/.46	198	.07	178	.8
Arterial Puncture	117/19	205/.28	203	.17	180	1.9
Arterial Blood Gas Analysis	75/24	438/2.33	238	.87	210	8.9
Intubation and	192/30	243/1.04	200	.32	173	3.6

Extubation						
Hemodynamic Monitoring	131/26	338/1.92	212	.62	188	7.9
* n=sample size						
** Due to many nursing school respondents' survey responses in minutes (not hours), these means are separate in each category; total respondents can be determined by adding the two columns together.						

<b>Figure 2. Mean time spent in Diploma (Three-Year) Nursing Programs teaching 15 selected subjects. n=73*</b>						
	Didactic or Classroom**		Nonclassical Laboratory		Clinical Experience/Practice	
Subjects	Programs/Minutes	Programs/Hours	Programs	Hours	Programs	Hours
Oxygen Therapy	8/25	59/2.7	38	1.5	31	68.7
Mechanical Ventilators	4/21	58/2.2	31	1.3	36	41.5
Chest Physiotherapy	35/21	25/1.3	20	.8	20	3
Intermittent Positive Pressure Breathing (IPPB) Therapy	35/20	16/.87	14	1.07	13	3.3
Continuous Positive Airway Pressure (CPAP)	38/20	19/1.05	14	.35	25	19.8
Incentive Spirometry	54/20	7/1.57	13	1.1	22	97.6
Aerosolized Drug Administration	45/17	8/1	13	.07	17	62
Metered Dose Inhalers (MDI)	42/17	13/.92	13	.3	16	12.3
Pulse Oximetry/ Transcutaneous O2 and CO2 Monitoring	33/21	26/1.5	13	.15	25	36.5
Pulmonary	38/21	23/1.4	15	.2	21	4.33

Function Testing						
Respiratory Home Care	18/19	25/.48	14	0	22	.23
Arterial Puncture	34/21	16/.31	16	.2	24	19
Arterial Blood Gas Analysis	9/26	55/2.5	28	.96	23	27
Intubation and Extubation	19/23	38/1.28	21	.81	26	18
Hemodynamic Monitoring	8/27	53/2.5	30	1.03	35	46
* n=sample size						
** Due to many nursing school respondents' survey responses in minute						