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Shane Keene
University of Cincinnati

Kristen L. McHenry
East Tennessee State University, mchenry@etsu.edu

Randy L. Byington
East Tennessee State University, byingtor@etsu.edu

Mark Washam
University of Cincinnati

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Respiratory Therapists as Physician Extenders: Perceptions of Practitioners and Educators

Shane Keene, DHSc, RRT-NPS, CPFT, RPSGT, FAARC

Kristen L. McHenry, MS, RRT-ACCS

Randy L. Byington, Ed.D., MBA, MT(ASCP)

Mark Washam, RRT, CPFT, RN, FNP (CNP), MSN

Abstract

Introduction: The purpose of this study was to determine the perceptions of practicing respiratory therapists (RT) and respiratory care educators regarding the role of RTs serving as physician extenders. **Methods:** The survey instrument was an electronic questionnaire that consisted of 17 questions. Participation was voluntary and participants were selected through random and convenience sampling techniques. **Results:** Of 506 respondents, 234 were respiratory care educators. Overwhelmingly, the respondents held the Registered Respiratory Therapist credential (92.7%). Respondents were about equally split among three education levels: 31.7% associate degree, 31.7% bachelor's degree, and 27.3% master's degree. Of the respondents 62.45% had considered pursuing a degree in physician assistant (PA). Respondents expressed a preference for an Advanced Practice Respiratory Therapy (APRT) program (77.9%) rather than a PA program. Nearly two-thirds of the respondents reported they felt that a master's degree should be the minimum level of education for an APRT. **Conclusions:** This study suggests that practitioners and educators alike are strongly supportive of advanced practice in the profession of respiratory therapy.

Key Words: respiratory therapist, advanced practice, mid-level provider, physician extender, graduate education

Shane Keene, DHSc, RRT-NPS, CPFT, RPSGT,
FAARC
Associate Professor, Department Head, Respiratory
Therapy Program Director
University of Cincinnati, College of Allied Health Sciences
Department of Analytical and Diagnostic Sciences,
Cincinnati, Ohio

Kristen L. McHenry, MS, RRT-ACCS
Assistant Professor
Cardiopulmonary Science Program Director
East Tennessee State University
College of Clinical and Rehabilitative Health Sciences
Department of Allied Health Sciences
Johnson City, Tennessee

Randy L. Byington, Ed.D., MT(ASCP)
Associate Professor of Allied Health Sciences
East Tennessee State University,
College of Clinical and Rehabilitative Health Sciences
Department of Allied Health Sciences,
Johnson City, Tennessee

Mark Washam, RRT, CPFT, RN, FNP (CNP), MSN
Assistant Professor of Respiratory Care
University of Cincinnati, College of Allied Health
Sciences
Department of Analytical and Diagnostic Sciences,
Cincinnati, Ohio

For correspondence and reprints
Shane Keene, DHSc, RRT-NPS, CPFT, RPSGT,
FAARC
University of Cincinnati
College of Allied Health Sciences
Cincinnati, OH
264 Preusion Blvd
Teleford, TN 37690

Introduction

A physician extender is a health care provider who is not a physician but performs medical related procedures and other tasks typically performed by physicians.¹ They are also referred to as mid-level practitioners and typically have master's- level degrees or higher. Nurse practitioners (NP) and physician assistants (PA) are examples of health care providers who have transitioned into the role of physician extenders. The respiratory therapist (RT) provides a unique and necessary set of skills, knowledge, and attributes to the healthcare environment.² Respiratory care is an important, integral part of the current health-care system because of the prevalence and seriousness of pulmonary disease.³ The emergence of graduate level RT education has led to this exploration of the RT transitioning into the physician extender role.

Respiratory therapy education has evolved from the minimum standard of diploma level to associate degree. In addition, there are currently close to sixty baccalaureate level programs accredited by the Commission on Accreditation for Respiratory Care (CoARC) and three master's level programs. Although standards for respiratory education have increased in recent years, the scope of practice and autonomy within the profession has not concurrently evolved. Limited autonomy and complacency can cause stagnation and may result in skilled and experienced respiratory clinicians to leave the field in search of new challenges and opportunities to contribute elsewhere.⁴

To determine the attitudes concerning physician extenders in the field of respiratory care, the following questions guided this study: 1) What are the perceptions of practicing respiratory therapists regarding respiratory therapists serving as physician extenders, and 2) What are the perceptions of respiratory care educators regarding respiratory therapists serving as physician extenders?

Literature Review

A review of the literature found few studies regarding the use of RTs as physician extenders or as mid-level providers. As early as 2003, a white paper identified the need for graduate education in respiratory care in several areas including "clinical specialization."⁵ A 2012 survey of respiratory care department managers reported that 36.8% felt the entry level degree for the profession should be at the baccalaureate level.⁶ It has long been established that RTs are considered the experts in mingling complex technology and clinical skills at the bedside.⁷

Nurse practitioners (NP) and physician assistants (PA) are examples of physician extenders that are found throughout most all clinical settings.^{8,9} Physician extenders first ap-

peared in the United States in the 1960s. Both NPs and PAs were created to provide care to underserved patient populations and to extend the ability of the physician to care for more patients.¹⁰ Since the length of training for these professionals was less than that of a physician and the pay comparably less, use of extenders was seen as more cost effective than utilizing additional physicians.⁸ The most striking difference between the physician assistants and nurse practitioners is the entry point for education. The nurse practitioner applicants must be baccalaureate prepared registered nurses who competes for entry into a graduate degree program. PA applicants are baccalaureate degree prepared as well; however it depends on the program whether previous clinical experience is necessary to apply, although many applicants have some clinical experience.⁸ An informal review of PA programs using Central Application Service for Physician Assistants (CASPA) found that about 75% of programs required applicants to have some degree of patient care experience in a health care setting. A review of the accreditation standards for the Accreditation Review Commission on Education for the Physician Assistant did not find a specific required number of hours of patient care the PA applicant must have completed prior to admission into the program.¹¹ Neither profession requires post graduate training to enter a specialty area.

Utilization of physician extenders in the in-patient hospital setting is well documented. Nearly 100% of teaching hospitals in the United States utilize NPs and PAs in the care of patients, including critical care areas.¹⁰ Several studies have evaluated the differences in physician extenders as compared to physicians and found no significant differences in outcomes or patient satisfaction.^{9,12} Additionally, it has been reported that outcomes were improved when these physician extenders were added to existing teams.^{9,12}

The influence of the Affordable Care Act

Legislation affecting health care policy, regulation, and reimbursements may also influence this potential new role for practicing RTs. The Patient Protection and Affordable Care Act (ACA), which went into effect in 2014, provides the opportunity for change in the way respiratory therapy is delivered in a health care setting. New opportunities exist for RTs with the need to reduce readmission rates of selected diseases within a thirty day so hospitals avoid being penalized and the new emphasis on assuring patient satisfaction during their inpatient stay.¹³ A growing emphasis on patient education could reduce the likelihood of readmission of patients with chronic illness. In addition, the RT will be responsible for educating patients on what a realistic hospital stay means in terms of outcomes and satisfaction. How the ACA will influence the job responsibilities of the RT is yet to be determined; however, it is a foregone con-

clusion that practitioners will be asked to do more, with the same or a nominal increase in resources.¹⁴

This new legislation advocates a strong investment in the overall health care labor force by focusing on enhancing education efforts in the medical community. In addition, the cost savings attained by utilizing physician extenders in patient care settings has become a health care cultural norm. The ACA holds health care organizations to a higher level of accountability in regard to patient outcomes. Three conditions outlined in the CMS Readmission Reduction Program (heart failure, pneumonia, and chronic obstructive lung disease) are disorders that RTs routinely treat.¹³ Consequently, given the role of the RT in the stated comorbidities and the current success of physician extenders in the allied health workforce, determining the feasibility of an advanced scope of practice for the profession of respiratory therapy would seem to be a logical next step.

Looking Ahead

In addition to the use of physician extenders in other healthcare disciplines and the changing climate of reimbursement for services, there currently is a nationwide shortage of physicians board certified in pulmonary medicine. According to the Health Resources and Services Administration (HRSA) shortages of critical care and pulmonary medicine specialists will reach 1,500 by 2020.¹⁵ Several factors contribute to this shortage. A large number of pulmonologists are members of the baby boom generation and are approaching retirement age, yet the number of expected new entrants into the field is not expected to offset those getting ready to exit.¹⁶ The last phase of the baby boom generation is just beginning to retire, which will create a sharp increase in demand for the number of pulmonary care trained intensivists. Finally, the dispersion of pulmonologists is geographically skewed leaving rural hospitals faced with inadequate staffing. A potentially feasible solution to address these concerns would be to advance the practice of respiratory therapy with graduate education, competency assessment, and credentialing to be physician extenders for pulmonologists.

Methods

This study was a non-experimental, cross-sectional survey research design. The University's Institutional Review Board (IRB) approved this study. It is descriptive in nature to reflect the perceptions of the two targeted groups: practicing respiratory therapists and educators. The survey instrument was an electronic questionnaire that consisted of 17 questions (Appendix A). Several survey questions collected demographic data while others required a Likert scale response or ranking of responses. The survey, for

clarity, included the operational definition of a physician extender. It was developed by three respiratory therapists with the consultation of a professional from another discipline with expertise in survey methodology and survey instrument development. An additional review was conducted by a respiratory therapist external to the research team. The instrument was qualitatively reviewed by each of these individuals for content essentiality, usefulness, and necessity. After the needed changes had been made, the study opened on October 7, 2014 with voluntary participation and continued until December 1, 2014.

The study was limited to therapists and educators who had their email addresses on file with the American Association of Respiratory Care (AARC) Education Section, licensed therapists with e-mail addresses listed with the Tennessee Society for Respiratory Care (TSRC) as of September 30, 2014, and program directors throughout over the U.S. (associate, baccalaureate, and master's degree programs) as listed on the CoARC website. In addition, a sample of respiratory care faculty, directors, managers, supervisors, graduates, and practitioners from varying states were invited to participate based on availability of known email addresses. Lists were reviewed and duplicate email addresses were omitted. Any participant had the option to forward the survey to someone they knew who was a practicing respiratory therapist or educator without the knowledge of the researchers. However, to minimize duplicate responses and selection bias, participation was limited to one response per IP address. In an effort to maximize input, an invitation to participate was posted on an open access site frequented by both respiratory therapists and respiratory therapy educators. All methods used to solicit participants led to a single data collection site (SurveyMonkey).

Data Analysis

Data collected were imported into SPSS Version 22 for analysis. While a number of the survey questions lent themselves to simple analysis (i.e. percentages) the data were examined for differences among demographic groups (therapists and educators). A descriptive group comparison was conducted. A number of the questions did not apply to the non-educator respiratory therapist; therefore a response of not applicable (N/A) was appropriate. To facilitate parametric testing of Likert scale data, responses of strongly disagree were converted to 1, disagree 2, agree 3, and strongly agree 4. Responses were analyzed with an independent samples *t* test to determine if the two targeted groups differed in their responses to those questions. All analysis for differences were conducted using a 95% confidence level (alpha <.05).

Results

Respondents

There were 506 respiratory therapists who responded to the study's survey, however not all questions were answered by every respondent. The respondents were predominately female (60.4%). Regarding years of experience as a licensed practitioner of respiratory care, the distribution of those responding was somewhat bimodal with respondents clustering around the extremes of less than 5 years of experience (19.9%) and greater than 25 years of experience (35.4%) with the remaining four categories averaging approximately 11%. Only 8% of the respondents indicated they had between 16 and 20 years of experience as licensed practitioners of respiratory care. Overwhelmingly the respondents held the Registered Respiratory Therapist (RRT) credential from the National Board for Respiratory Care (NBRC) (92.7%). Just over half of those responding indicated they had obtained a specialty credential (51.5%). Specific specialties were not specified on the survey instrument. Respondents were almost equally split between three education levels (31.7% associate degree, 31.7% bachelor's degree, and 27.3% master's degree). While only 2.2% of the respondents' highest level of education was a certificate in respiratory care, 7.1% of the respondents indicated they had earned a doctoral degree.

Educators

Two hundred and thirty four ($n=234$) educators responded to the survey. The participants were asked to indicate the highest degree awarded by the respiratory care

program in which they teach. Of those responding 69.8% teach in a program awarding an associate degree, 27.6% teach in a program awarding a bachelor's degree, and 2.6% teach in a program awarding a master's degree. Six educators did not provide a response for this question.

The educators were also asked to provide information regarding years of experience they had in RT education. The number of respondents for this question ($n=271$) exceeded the number who indicated they were educators ($n=234$) and may indicate that some respondents consider their roles dual. Of those responding to this question, 24.7% had up to 5 years of experience, 20.3% had 6-10 years of experience, 12.1% 11-15 years of experience, 15.4% had 16-20 years of experience, 8.4% had 21-25 years of experience, and 19.1% had more than 25 years of experience as an educator. 1.5% of educators indicated they held a Certificate in Respiratory Care, 12.5% an associate degree, 27.7% a bachelor's degree, 45.4% a master's degree, and 12.9% a doctoral degree.

Perceptions

Table 1 illustrates the perceptions of respiratory therapists and respiratory care educators in four separate domains: whether or not the RT could adequately serve as a mid-level provider following training and education, who should provide the clinical training to advanced practiced respiratory therapy students, whether or not the respondent has previously considered applying to and entering a PA program, and if given the option between an APRT and PA program, which would the respondent most likely prefer given the two professions were equally reimbursable by third

Table 1
Perceptions of Advanced Practice Education

Survey Item	Mean response Practitioners	Mean Response Educators	t Value	Significance
RTs that have undergone formal advanced training and education could adequately perform the medical activities typically carried out by mid-level practitioners or physician extenders.	3.39	3.31	$t(485)=-.983$	0.326
All clinical training should be provided by the appropriate mid-level practitioner(s) and/or medical doctor (Pulmonologist, Critical Care Intensivist, and Anesthesiologist).	2.96	3.19	$t(479)=2.807$	0.005
I have considered pursuing entrance into a Physician Assistant program.	2.85	2.64	$t(482)=2.437$	0.015
If the Advanced Practice Respiratory Therapist (APRT) and the Physician Assistant (PA) were equally reimbursable and were comparable in income, I would rather enroll in a PA program.	2.04	1.97	$t(481)=-.872$	0.384

party payers and comparable in income. There were two notable findings within these survey items. The results of an independent-samples *t* test indicated a significance between the responses of practitioners and educators at the 95% confidence interval; $t(479) = 2.807, p = .005$, regarding who should provide the appropriate clinical training to the advanced practice respiratory therapy student. Practitioners agreed more strongly that mid-level practitioners or physicians (pulmonologist, critical care intensivist, and anesthesiologist) should provide the appropriate training. The results of an independent-samples *t* test indicated a significant difference between the responses of practitioners and educators at the 95% confidence interval; $t(482) = 2.437, p = .015$, regarding whether or not the respondent had considered entrance into a physician assistant program. The mean response of practitioners was significantly higher than the mean response of educators in this area.

The next three survey items explored perceptions concerning the minimum level of education for the advanced practice respiratory therapist, appropriate educational preparation for an APRT program, and the minimum clock hours of clinical learning experiences that an APRT program should require for graduation. Nearly two-thirds of the respondents indicated their preference was a master's degree as the minimum level of education for an APRT. In distinguishing between practitioners and educators, practitioners indicated a preference for a master's degree (64.7%), followed by a bachelor's degree (33.7%), and lastly a doctorate (1.7%). Respiratory care educators also indicated a preference for a master's degree (75.4%), followed by a bachelor's degree (22.7%) and doctorate degree (1.9%).

When considering appropriate educational preparation for an APRT program, a Bachelor's degree in respiratory care with the RRT credential was preferred by 40.9% of those responding. The proportion favoring a non-specific bachelor's degree combined with the RRT credential and those favoring a Bachelor's degree in respiratory care combined with the RRT credential and a NBRC specialty credential were similar (23.3% and 23.1% respectively). Only 12.6% of those responding favored a non-specific bachelor's degree combined with the RRT credential and a NBRC specialty credential. Practitioners agreed more strongly with a Bachelor's degree in respiratory therapy and the RRT credential as the educational preparation for an APRT program (48.2%) followed by a Bachelor's degree in respiratory therapy, the RRT credential, and at least one specialty credential (26.8%). Educators agreed a Bachelor's degree in respiratory therapy with the RRT credential (34.8%) is the preferred educational preparation for an APRT program followed by a non-specific bachelor's degree with the RRT credential (28%).

Concerning the minimum clock hours for clinical training of the APRT, responses varied among respondents.

The minimum number of clock hours (500) was preferred by 21.4% of the respondents, 750 hours preferred by 34.5%, and 1000 hours preferred by 31.4%. Only 12.7% of the respondents indicated that more than 1000 hours of clinical education should be required for those completing an APRT program. The majority of practitioners identified 750 clock hours as being the minimum (30.8%), as did respiratory care educators (34.6%).

Factors inhibiting and facilitating the development of a physician extender role

Respondents were asked to rank a number of factors that could potentially inhibit or facilitate the development of a physician extender role for APRTs. The rankings for each factor were averaged to determine respondents' perceptions. Respondents ranked environmental factors that might play a role in the development of APRTs. Third party reimbursement issues were ranked as the most significant possible inhibiting factors to provide APRT training, followed closely by licensure laws. Acceptance by physicians and mid-level providers along with the scope of practice were the remaining factors that were ranked accordingly within this domain. Respondents were asked to rank personal factors that might facilitate the implementation of APRTs. Enhanced clinical practice followed by monetary reward was ranked as the most important factors for the development of the APRT. The operational definition for enhanced clinical practice in this context was the advancement or moving forward of putting knowledge to actual use in the profession.¹⁷ Job security, peer recognition and respect, and flexibility in scheduling were the remaining factors reported. Finally, respondents were asked to rank clinical settings where the skills of APRTs might add value to the continuum of care. Those responding identified inpatient pulmonary and critical care medicine as the setting in which APRTs could provide the greatest value. Secondly, physician practice, followed by outpatient clinics, preventative medicine and community education, and home care were identified.

Discussion

The purpose of this study was to determine the perceptions of practicing RTs and respiratory care educators regarding the role of RTs serving as physician extenders. The relatively equal dispersion of respondents between associate, baccalaureate, and master level degrees across the three major categories indicates a uniform interest in the concept of advanced practice in the profession regardless of educational background. The limited opportunities for clinical advancement in respiratory care may result in a portion of practitioners exiting the field prematurely. With the majority of respondents having the RRT credential along

with having at least one specialty credential, it could be interpreted this population realizes the value of advancement and continued growth within the profession. This finding coincides with the national majority (61.5%, $n=141,875$) of all respiratory therapists holding the RRT credential.¹⁸ The results reflect a strong agreement among practitioner and educators that RTs could adequately perform as mid-level practitioners after formal education. This could be due to the belief the discipline is becoming more professional and less technical and therefore, current RTs are attempting to meet the demands of an ever-changing health care environment through clinical specialization.

Educators in this study did not feel as strongly about having mid-level practitioners or physicians providing all clinical training for APRT students. A possible interpretation of this finding is that respiratory care educators feel they could also provide adequate clinical training for an APRT program. A majority of respondents indicated they had considered pursuing a PA degree. This consideration corresponds with a study by Douce and colleagues reporting that 97% of BS level RT students from 20 colleges and universities in 16 states indicated an interest in a clinical Master of Respiratory Therapy program.¹⁹ One explanation for why so many practitioners have considered a PA program is because there is currently no clinical respiratory care counterpart. Growth in the number of RTs with graduate degrees may impact how others recognize the profession in the future.²⁰ Practitioners were more likely than educators to consider this option, potentially because of their current clinical practice responsibilities. The results yielded an overwhelming preference for enrollment in an APRT program versus a PA program if the two were equally reimbursable and comparable in income. This finding could be indicative of respiratory care practitioners desiring to stay within their respective field of study, but with advanced training and education.

A predominate number of respondents believe that a master's degree should be the minimum level of education preparation for the APRT; although, educators felt more strongly in this regard. This could be a result of most educators are already teaching at the baccalaureate and graduate level or due to a familiarity with the entry-level degree requirement for other allied health mid-level providers (e.g., master level preparation for PAs and NPs). The respondents preferred a bachelor's degree that is specific to the profession as opposed to a non-specific bachelor's degree, along with the RRT credential, as the preferred admission criteria for an APRT program. This finding coincides with a study that found respiratory care managers valued baccalaureate completion in respiratory care more highly when compared to other non-respiratory specific bachelor's degrees, such as management and business.²⁰ Little emphasis was placed on

NBRC specialty credentials as a requirement for entrance into an APRT program by both practitioners and educators. This could be due to relatively small percentages of overall practitioners who hold specialty credentials. According to the NBRC's latest examination statistics (2015), out of 230,506 credentialed practitioners, 5.6% ($n=13,043$) hold the CPFT, 5.4% ($n=12,488$) hold the NPS, 1.8% ($n=4,365$) hold the RPFT, 0.4% ($n=984$) hold the ACCS, and 0.1% ($n=315$) hold the SDS credential.¹⁸

There was no particular agreement on the number of minimum clock hours of clinical training experiences that an APRT program should require for graduation; however, 750 hours was the majority preferred by both practitioners and educators. Respondents ranked third party reimbursement as the biggest obstacle that must be overcome for the development of the APRT and thus should be a primary focus if the profession is to move successfully in this direction. The greatest driver for becoming an advanced practice respiratory therapist in this study was the desire for enhanced clinical practice. This finding speaks volumes about the individual practitioners in respiratory therapy. The primary reason for wanting to become an APRT is not necessarily for personal reasons but for enhanced clinical practice which facilitates one of the goals of the profession: improved patient outcomes. The clinical setting for which the skills of APRTs could best be utilized was viewed by respondents to be inpatient pulmonary and critical care medicine. This may be a reflection of the majority of RTs working in the acute care, inpatient hospital setting and working closely with pulmonologists and critical care intensivists.

Conclusions

This study suggests that practitioners and educators alike are strongly supportive of advanced practice in the profession of respiratory therapy. Regardless of level of educational preparation, advanced practice is perceived as important to most RTs. A large percentage of practitioners in this study are currently contemplating or have considered attending a PA program. This study found the perceptions of RTs to be, if given a clearly defined pathway, they could transition into the role of physician extenders or mid-level providers.

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Appendix A

Dear Respiratory Therapist and/or RT Educator,

We are conducting a study entitled, “Respiratory Therapists as Physician Extenders: Perceptions of Practitioners and Educators” and we are asking for your voluntary participation in an effort to identify the views of current practicing therapists and educators regarding the role of RTs as physician extenders or mid-level providers. The American Association for Respiratory Care (AARC) has categorized this potential practitioner as an Advanced Practiced Respiratory Therapist (APRT). This short survey should only require about 10 minutes of your time and we would greatly appreciate your thoughts and input concerning this potentially new concept and opportunity in Respiratory Care. Please click on the link provided and it will take you to the electronic survey. Thank you!

Kindest regards,

Study staff (Dr. Shane Keene, Mrs. Kristen McHenry, Dr. Randy Byington, and Mr. Mark Washam)
<https://www.surveymonkey.com/s/9LTSBZQ>

Respiratory Practitioners and Educators Perceptions of Advanced Practice

For the first seven questions, please indicate the answer that best represents your current characteristics.

1. What is your gender? Male Female
2. How many years of experience do you have as a licensed practitioner in Respiratory Care?
 0-5 years 6-10 years 11-15 years 16-20 years 21-25 years over 25 years
3. If you are a Respiratory Care Educator, how many years of experience in teaching do you have?
 0-5 years 6-10 years 11-15 years 16-20 years 21-25 years over 25 years
4. Are you a licensed CRT or RRT? CRT RRT
5. If you have obtained a specialty credential, please specify how many you have earned?
 1 2 3 4 5 6+
6. What is your highest level of education obtained?
 Certificate Associates Bachelors Masters Doctorate
7. If you are a Respiratory Care Educator, what degree is awarded by the RT program in which you teach?
 Associates Bachelors Masters Not applicable

For questions 8-11, please indicate which answer identifies with your strongest preference.

8. RTs that have undergone formal advanced training and education could adequately perform the medical activities typically carried out by mid-level practitioners or physician extenders.
 Strongly disagree Disagree Agree Strongly agree
9. All clinical training of the APRT student should be provided by mid-level practitioner(s) and/or medical doctor (Pulmonologist, Critical Care Intensivist, and Anesthesiologist).
 Strongly disagree Disagree Agree Strongly agree
10. I have considered pursuing entrance into a Physician Assistant program.
 Strongly disagree Disagree Agree Strongly agree
11. If the Advanced Practice Respiratory Therapist and Physician Assistant were equally reimbursable and were comparable in income, I would rather enroll in a PA program.
 Strongly disagree Disagree Agree Strongly agree

Appendix A
(continued)

For questions 12-14, please indicate the answer in which you are in most agreement.

12. What should be the minimum level of education for the Advanced Practice Respiratory Therapist (APRT)?

Bachelors Masters Doctorate

13. The pathway to admission into an APRT program accredited program should be at a minimum be:

BS in respiratory, RRT

BS in respiratory, RRT, plus at least 1 NBRC specialty credential

Non-RT specific BS degree, RRT, plus at least 1 NBRC specialty credential

Non-RT specific BS degree, RRT

14. What are the minimum clock hours of clinical learning experiences that an APRT program should require for graduation?

500 hours 750 hours 1000 hours more than 1000 hours

Please rank the following answers by assigning the most significant barrier a ranking of 1, the next most significant barrier a ranking of 2, and so forth.

15. What do you feel are the potential obstacles/barriers to the development of and implementation of the APRT?

_____ Licensure laws

_____ Third party payer

_____ Scope of practice

_____ Acceptance from current mid-level providers

_____ Acceptance from current physicians

Please rank the following answers by assigning the biggest motivator a ranking of 1, the next biggest motivator a ranking of 2, and so forth.

16. What would be your biggest motivator for pursuing the APRT?

_____ Monetary reward/income

_____ Flexibility in schedule

_____ Job security

_____ Enhanced clinical practice

_____ Peer recognition/respect

Please rank the following answers by assigning the most preferred clinical setting a ranking of 1, the next most preferred clinical setting a ranking of 2, and so forth.

17. The APRTs skills and knowledge would best be utilized in what type of clinical setting?

_____ In-patient pulmonary/critical care medicine

_____ Out-patient clinics

_____ Physician practices

_____ Home care

_____ Preventative medicine/community education

Thank you for your time! Should you have any questions regarding any of the study questions, feel free to contact a member of the research team.