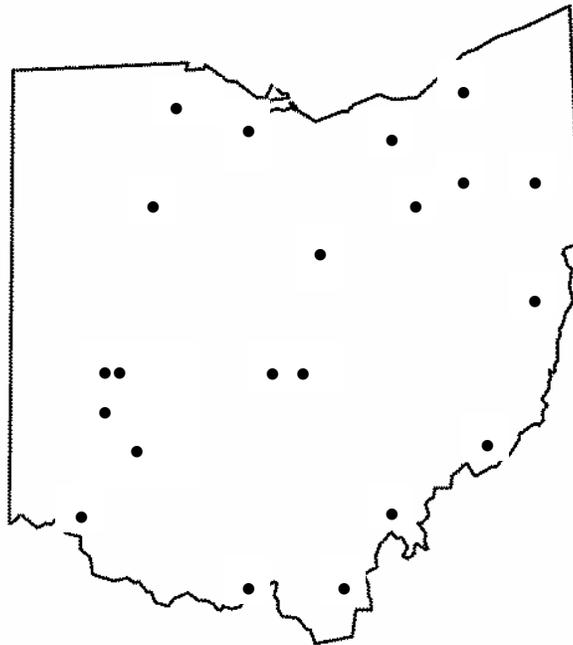


An Update on Respiratory Care Education Programs in Ohio:
Focus on Classes of 2001 – 2006, RRT Rates for 2003 – 2005,
and Future Graduate Projections for 2007 & 2008



F. Herbert Douce, MS, RCP, RRT-NPS, RPFT
ORCB Educational Consultant
&
Associate Professor and Director
Respiratory Therapy
The Ohio State University

July 18, 2007

An Update on Respiratory Care Education Programs in Ohio: Focus on
Classes of 2001 – 2006, RRT Rates for 2003 – 2005, and
Future Graduate Projections for 2007 & 2008

Introduction

This report is the third in a series of reports beginning with a seven-year retrospective review of student enrollments, graduation rates, and quality outcomes in 2005 and an update in 2006.^{1,2} With 3 new Respiratory Therapy educational programs in Ohio, continuing reports of staffing shortages, and only 50% of graduates earning the Registered Respiratory Therapist (RRT) credential, the Ohio Respiratory Care Board (ORCB) continues interest in the quality and productivity of the approved respiratory care educational programs in Ohio. The purpose of this 2007 report is to update the previous reports and to describe and project trends through 2008.

Methods

Copies of the Committee on Accreditation for Respiratory Care (CoARC) 2005 Annual Reports were requested from the program directors of the 19 respiratory care educational programs identified in the 2006 ORCB report. As the CoARC Annual Report only included data for classes graduating from 2000 – 2005, and did not include data for 2006-2008, the ORCB Education Committee requested supplemental data from program directors of the 19 established programs and from the 3 new programs in Ohio. Sponsoring institutions and locations of approved and new respiratory therapy educational programs are listed in Table 1. Similar to the CoARC annual reports, the 2006-2008 supplements included the number of applicants for enrollment, maximum enrollment, and actual enrollment; student attrition and causes of attrition; number of graduates; number of graduates employed in respiratory care-related jobs within three months of graduation, and quality outcome measures of the program such as the results of graduate and employer surveys and licensing and credentialing examinations. Data were collected in August 2006 and are oriented to the year of graduation or projected graduation. These data were entered into a computerized statistical spreadsheet, Statistical Package for the Social Sciences (SPSS v 14.0), and annual totals of applications, program capacity, initial enrollment, student attrition, graduates, graduates placed in RT-jobs, Certified Respiratory Therapists (CRT), and RRTs were calculated.

Sponsoring Institution	Program Location
Bowling Green State University	Huron
Cincinnati State Tech & Community College	Cincinnati
Collins Career Center - Marshall University (WV) Consortium	Chesapeake
Columbus State Community College	Columbus
Cuyahoga Community College	Parma
James A. Rhodes State College	Lima
Jefferson Community College	Steubenville
Kettering College of Medical Arts	Kettering
Lakeland Community College	Kirtland
Miami-Jacobs Career College	Dayton
North Central State College	Mansfield
Shawnee State University	Portsmouth
Sinclair Community College	Dayton
Southern State Community College	Washington Court House
Stark State College of Technology	Canton
The Ohio State University	Columbus
University of Akron	Akron
University of Rio Grande/Rio Grande Community College and Buckeye Hills Career Center Consortium	Rio Grande
University of Toledo (advanced level program only)	Toledo
Washington State Community College	Marietta
Youngstown State University	Youngstown

Table 1. The Respiratory Care Educational Programs in Ohio.

Results

This report includes data from all 18 established on-going programs and 3 new programs: Miami-Jacobs Career College, Southern State Community College, and University of Rio Grande/Rio Grande Community College and Buckeye Hills Career Center Consortium.

Student Enrollment

Table 2 and figure 1 present student enrollment data for the classes of 2003 – 2008. The trends of annual increases in the number of applications, statewide program capacity, and enrollments continue with a 74% increase in applications, a 44% increase in capacity, and a 68% increase in initial enrollments in 5 years. Capacity was strongly influenced by Miami-Jacobs Career College which added 160 students to statewide capacity for 2008. The student attrition rate continues to average approximately 25%. Attrition for the Class of 2007 occurred generally by the end of program year 1, and for the Class of 2008 attrition occurred early in program year 1. Additional attrition is expected during the second program years.

	2003	2004	2005	2006	2007	2008
Applications	453	595	578	714	799	1035
Capacity	442	452	468	495	501	652
Enrollment	266	327	369	407	429	549
Attrition	70	89	81	111	84	30
In Progress		3	19	51	300	339

Table 2. Student enrollment data for the classes of 2003 – 2008.

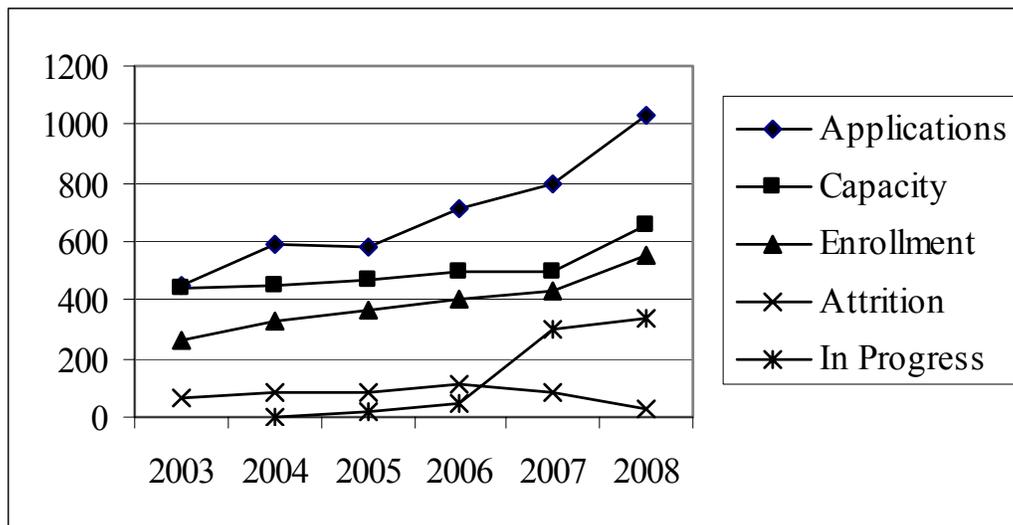


Figure 1. Student enrollment data for the classes of 2003 – 2008.

Student Outcomes

Table 3 and figure 2 present 2001 – 2006 graduate data and projections for 2007 and 2008. With 51 students “in progress” for the Class of 2006 when these data were collected, the trend of annual increases of graduates will likely continue. With 300 and 339 students “in progress”, the Classes of 2007 and 2008 may be the largest ever. The trends of annual increases in the number of graduates, graduates in RT-related jobs, Certified Respiratory Therapists (CRT), and RRTs continue with 28% increase in graduates, a 32% increase in graduates in RT-related jobs, a 27% increase in CRTs, and a 41% increase in RRTs in the 5 years 2001 – 2005.

	2001	2002	2003	2004	2005	2006	2007	2008
In Progress				3	19	51	300	339
Graduates	208	186	183	239	267	232		
Grads-Jobs	196	175	177	230	258	219		
Total CRTs	205	168	169	222	260	166		
Total RRTs	92	81	85	111	130	37		

Table 3. 2001 – 2006 graduate data and projections for 2007 and 2008.

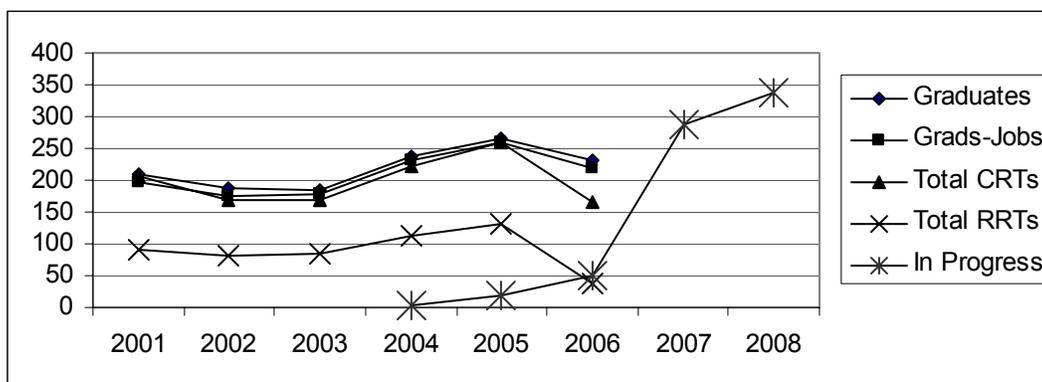


Figure 2. 2001 – 2006 graduate data and projections for 2007.

The difference between number of graduates and those having RT-related jobs within 3 months of graduation continues to increase, but the number averages only 10 per year. With CRT being the licensing examination, the number of CRTs resembles closely the number of graduates, except for the class of 2006. The August reporting date may have been too soon after graduation to accurately reflect the Class of 2006. The number of new RRTs continues as approximately 50% of graduates annually.

CoARC Outcomes Assessment Thresholds

The Committee on Accreditation for Respiratory Care (CoARC), the agency authorized to approve programs by the Ohio Respiratory Care Board, has established “Outcomes Assessment Thresholds”.³ These thresholds define the criteria for initial and continuing accreditation. In addition to positive graduate and employer satisfaction survey results, these thresholds address student attrition, job placement, and percentages of graduates attempting credentialing examinations of the National Board for Respiratory Care, and percentages of graduate success rates on those examinations. CoARC expects:

- no more than 30% attrition,
- no less than 70% job placement,
- 90% of graduates to attempt the CRT examination
- 80% of graduate to pass the CRT examination,
- 65% to attempt the RRT examinations and
- 50% of graduates to earn the RRT credential.

CoARC calculates 3-year rolling averages based upon data provided in annual reports. Figure 3 depicts the percent of graduates earning the RRT credential for the most recent 3 year reporting interval 2003 – 2005. When these data were reported in August 2006, the class of 2005 would have had at least eight months and up to eighteen months past graduation to earn the RRT credential. Based on the most recent reporting interval, only 7 respiratory therapy education programs in Ohio appear to meet or exceed the CoARC threshold for percent of graduates earning the RRT credential.

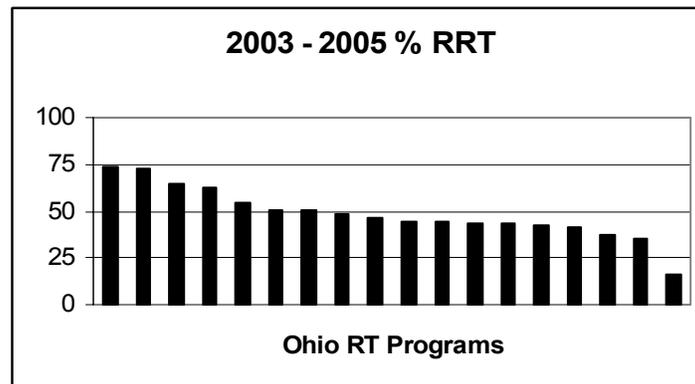


Figure 3. Percent of graduates from 18 Ohio RT programs earning RRT credential

Discussion and Conclusions

The demand for a respiratory therapy education in Ohio remains strong with student applications exceeding statewide program capacity by 50%, a 1.5:1 ratio. Program capacity continues to increase. The productivity of Ohio's Respiratory Therapy educational programs continues to increase and will likely increase in the near future. Percentages of graduates in RT-related jobs and earning the CRT credential continue to exceed 95% success. That the increases in the number of graduates positively impact the statewide staffing shortage of therapists should be investigated.

With approximately 50% of graduates earning the RRT credential statewide, and with less than half the programs reporting greater than 50% RRTs from the 2003 – 2005 graduating classes, the advanced quality of graduates is not proven and may be suspect in some programs. If this pattern continues, the accreditation status of these programs as “advanced level” programs may be challenged by CoARC in the future, and their status as “advanced level” may be in jeopardy. As an alternative to 50% RRT, CoARC accepts an alternative measurement of program outcomes, the “Comprehensive Written Registry Self Assessment Examination.” CoARC considers a 55% correct score on this examination as “passing,” and if used as an alternative program outcome, 80% of the graduates are expected to pass. Some programs may depend on students passing this alternative examination in lieu of becoming RRT to demonstrate advanced program outcomes.

The 3 new programs will graduate students initially in 2007; graduate data and accreditation by CoARC for the 3 new programs have yet to be considered.

References

1. Douce FH, Ciarlariello S, George Y. Respiratory Care Education In Ohio – 2004. Ohio Respiratory Care Board. 2005;
[http://respiratorycare.ohio.gov/pdfs/2004 State of Educ Report.pdf](http://respiratorycare.ohio.gov/pdfs/2004%20State%20of%20Educ%20Report.pdf)
2. Douce FH. An Update on Respiratory Care Education Programs in Ohio: Class of 2005 and Future Projections. Ohio Respiratory Care Board. 2006;
<http://respiratorycare.ohio.gov/pdfs/2006Education.pdf>
3. Committee on Accreditation for Respiratory Care. CoARC Outcomes Assessment Thresholds.
[http://www.coarc.com/documents/new/Outcomes Assessment Thresholds.pdf](http://www.coarc.com/documents/new/Outcomes%20Assessment%20Thresholds.pdf),
accessed 04/05/07.