

Proposed Program:

**Bachelor of Science Degree –
Respiratory Therapy**

Phase II Proposal

Submitted by:

Ozarks Technical Community College

December 2020

Executive Summary

Southwest Missouri needs more respiratory therapists. By the year 2026, the demand for respiratory therapists is expected to increase 38.5% in the south central and southwest region of the state. The recent coronavirus pandemic has highlighted respiratory therapists' importance to the health, and often survival, of southwest Missourians. In the midst of our current health crisis, respiratory therapists have gained more attention and respect as these professionals have battled on the frontlines of this disease.

Accreditation standards for respiratory care education programs, as established by the Commission on Accreditation for Respiratory Care (CoARC), have changed. Beginning January 1, 2018, community colleges who seek to establish new or satellite respiratory therapy programs must now offer baccalaureate degrees. Ozarks Technical Community College (OTC) wishes to establish a satellite of its existing respiratory therapy program to better serve our region; however, under these accreditation requirements, the college is unable to do so, and therefore, unable to adequately respond to hospitals and health systems experiencing a serious shortage of qualified respiratory therapists.

Fortunately, in 2018, the Missouri State Legislature passed Senate Bill 807, which establishes that Missouri's community colleges may offer bachelor's degrees "in circumstances where the level of education required in a field for accreditation or licensure increases to the baccalaureate degree level..." The changes to the respiratory therapy profession present the exact set of conditions that illustrate why this legislation passed. OTC would not be seeking approval to offer a bachelor's degree in respiratory therapy were it not for these changes by the accrediting body.

OTC has been a long-trusted partner in developing the state's workforce by offering high quality, affordable educational opportunities. The college is vital to the economic health of our service area and is relied upon to provide a pipeline of skilled workers.

OTC is grateful to have the support of our four-year institutions, as evidenced by letters of support in Appendix A.

Ozarks Technical Community College respectfully seeks approval to offer a bachelor's degree in respiratory therapy.

Rationale for the Proposal

State of Respiratory Therapy Education in the United States

Across the nation today, the respiratory education model is in a state of transition. Respiratory therapy education functions under the oversight of three different bodies:

- The **American Association for Respiratory Care (AARC)** is the leading national and international professional association for respiratory care.
- The **Commission on Accreditation for Respiratory Care (CoARC)** accredits programs in respiratory care at the associate, baccalaureate, and master's degree level. The mission of the CoARC is to ensure that high quality educational programs prepare competent respiratory therapists for practice, education, research, and service.
- The **National Board for Respiratory Care (NBRC)** is the credentialing arm of the profession and provides the licensure examination and awards the certified respiratory therapist (CRT) and the registered respiratory therapist (RRT) credentials. These credentials are required to work as a respiratory therapist.

Two of these organizations have recently issued position statements or changed standards related to the goal of baccalaureate entry to the profession:

- In 2019, the AARC issued a position statement that sets a goal for a baccalaureate degree to be required for entry to the profession in the year 2030 and thereafter.¹
- In 2016, the CoARC announced a change to accreditation standards for new respiratory care programs. This change to Standard 1.01 went into effect January 1, 2018. It states:

“Except as provided in the following sentence, an educational sponsor must be a post-secondary academic institution accredited by a regional or national accrediting agency that is recognized by the U.S. Department of Education (USDE) and must award graduates of the program a baccalaureate or graduate degree upon completion of the program. For associate degree programs that applied for accreditation or were accredited prior to January 1, 2018, an educational sponsor must be a post-secondary academic institution accredited by a regional or national accrediting agency that is recognized by the USDE. These programs may continue to award graduates of the program an associate degree as long as they remain in compliance with the CoARC Standards.”²

While the CoARC states that existing associate degree programs will be supported and may

¹ “Entry Requirements to Respiratory Practice: 2030 and Thereafter” American Association for Respiratory Care. 1 May 2019. <https://www.aarc.org/wp-content/uploads/2019/09/statement-entry-requirements-to-respiratory-therapy-practice-2030-and-thereafter.pdf>

² “CoARC Communication to Our Communities of Interest: Response to AARC Position Statement on Respiratory Therapist Education” Commission on Accreditation for Respiratory Care. 1 December 2017. <https://coarc.com/CoARC/media/Documents/CoARC-Communication-Min-Degree-Requirements-1-28-16-rev-12-1-17.pdf>

remain accredited, it will no longer offer accreditation to any newly-established associate degree program. *A satellite program is considered a new program by CoARC because it requires a separate CoARC number that leads to separate accreditation status.* Because satellite programs have been considered in this manner, CoARC has not allowed accreditation of satellite programs unless the base program was a bachelor's program since the standard changed in 2018. Given this restriction, OTC cannot establish new, or expand existing, programs - even within its own service area. Any program "expansion" or opening of a satellite program is considered a new program under current CoARC accreditation standards.

If this proposal is approved, OTC will offer a bachelor's degree in respiratory therapy at the OTC Springfield campus, and establish a satellite program at the OTC Waynesville Education Center. This will allow OTC to better serve the health care facilities in the existing service region.

Legislation Regarding Missouri Community Colleges Offering Bachelor's Degrees

In 2018, Missouri passed a law that allows Missouri's community colleges to offer baccalaureate degrees under the following conditions:

- the level of education required in a field for accreditation or licensure increases to the baccalaureate level or,
- in the case of applied bachelor's degrees, the level of education required for employment in a field increases to that level, and
- when doing so would not unnecessarily duplicate an existing program, collaboration with a university is not feasible or the approach is not a viable means of meeting the needs of students and employers.³

Based upon changes of the CoARC accreditation standards to only accredit new programs which offer a baccalaureate degree or higher, Ozarks Technical Community College seeks to offer a bachelor of science in respiratory therapy. This condition meets the letter of Senate Bill 807.

Phase II Proposal

Ozarks Technical Community College seeks to offer a bachelor of science in Respiratory Therapy. If approved, OTC will open a satellite location at the Waynesville Education Center, which will serve an additional 10 students each year. The bachelor's degree will be available at both the Springfield campus and the Waynesville Education Center location. The Springfield campus anticipates serving an additional 10-20 students each year.

This document is organized according to the outline provided in **6 CSR 10-4.010 (C) Comprehensive Review.**

³ Senate Bills Nos 807 and 577. 2018. <https://www.senate.mo.gov/18info/pdf-bill/tat/SB807.pdf>

A. Evidence that the proposing institution has explored the feasibility of collaboration with other institutions.

Ozarks Technical Community college has made outreach to several colleges and universities in its service region:

- Drury University
- Evangel University
- Southwest Baptist University
- Missouri State University

OTC also contacted the only entry-to-practice bachelor's degree program in the state, the University of Missouri - Columbia. Documentation of these conversations is offered in Appendix A.

With the exception of Missouri State University, none were interested in engaging in a collaborative arrangement. After several productive meetings with MSU's provost, dean of health and human services and associate dean of health and human services, it was determined that a collaboration would not be feasible. This is documented in the letter from MSU in Appendix A.

OTC continues its close and highly-valued relationship with MSU. OTC's bachelor's degree will have a clinical and research focus and will not duplicate MSU's degree-advancement bachelor's degree, which focuses on education, leadership, and management. OTC will continue to refer students who seek career advancement in those areas to MSU's program, as it has done for many years.

B. Alignment with Blueprint for Higher Education goals.

OTC has been an important partner in Missouri's Big Goal that 60 percent of adults have a two- or four-year degree or certificate by 2025. This proposal aligns with the goals set forth in the *Blueprint for Higher Education*.

Attainment

OTC already contributes significantly to Missouri's Big Goal through its service to citizens within its service region. According to Fall 2020 data from the Missouri Department of Higher Education and Workforce Development for OTC's 12-county service region, OTC serves:

- 63% of all students attending a higher education institution in Missouri
- 94% of all students attending a two-year institution in Missouri.

This proposal will allow OTC to expand its capacity to train more respiratory therapists, thus

helping more Missouri citizens earn a college degree. However, without approval to offer the respiratory therapy degree at the baccalaureate level, this increased capacity will not be achieved. We anticipate serving an additional 20-30 students annually once approved to offer the bachelor's degree. This moves Missouri closer to its goal, and fills an important workforce need.

Affordability

OTC offers affordable educational opportunities to students. OTC has a three-tiered system for tuition, with the highest cost programs offered at the Tier III per-credit-hour rate. All OTC healthcare programs fall into Tier III, and the bachelor's degree in Respiratory Therapy will be no exception. Currently, this rate is **\$130 per credit hour (in-district) or \$179 per credit hour (out-of-district)**.⁴

Even at OTC's highest tuition tier, this is still lower than the average per credit hour rate for Missouri. According to the Missouri Comprehensive Fee Survey for Public Institutions of Higher Education (FY 2020), the **average per credit hour tuition rate among Missouri's four-year institutions is \$258**.⁵

Quality

OTC has become known as a strong driver of southwest Missouri's economy. The college has a consistent track record of offering high-quality education and training opportunities. A 2017 economic impact study found that OTC generated \$234 million in added income to the OTC Service Area economy. The same study noted that an average annual return on investment for students is 18.5%; for local taxpayers, 13.4%; and for state and local taxpayers, 15.8%.⁶

OTC is recognized for quality, not only regionally and statewide, but nationally as well. In addition to being fully accredited by the Higher Learning Commission, the college has been named among the top 150 community colleges in the United States in multiple years by the prestigious Aspen Institute, most recently in 2019.⁷

OTC is known for helping educate and support a qualified and highly skilled workforce. The existing Respiratory Therapy program at OTC is no exception. As evidence of this, **OTC's respiratory therapy program is the only associate-level program in the United States to receive the CoARC Distinguished RRT Credentialing Success Award for the last nine years in a row**. Below is data from the 2019 and 2020 *Report on Current Status*⁸ as evidence of OTC's

⁴ "Required Tuition and Fees." <https://services.otc.edu/finance/tuition-fees/>

⁵ Missouri Comprehensive Fee Survey for Public Institutions of Higher Education (2021). https://dhewd.mo.gov/data/documents/CompFee_FY2021_summary.pdf

⁶ "Ozarks Technical Community College Fact Sheet: The Economic Value of Ozarks Technical Community College (August 2017). <https://research.otc.edu/media/uploads/2017/10/OTC-Economic-Impact-Study-Fact-Sheet.pdf>

⁷ "OTC Named Finalist for Aspen Prize for Community College Excellence." (2019) <https://news.otc.edu/otc-named-finalist-aspen-prize/>

⁸ Report of Current Status (RCS) <https://coarc.com/Students/Programmatic-Outcome-Data.aspx>

program quality:

	Retention	Job Placement	RRT Credentialing	TMC High Cut Score Pass Rate	Employer Satisfaction	Graduate Satisfaction
2019	91%	100%	100%	100%	100%	100%
2020	93%	98%	94%	96%	100%	100%

(These data reflect a rolling three-year average.)

The CoARC Entry-to-Practice Accreditation Standards state the following in regards to the qualifications of faculty in a bachelor’s or master’s respiratory care program:⁹

Standards 2.02/2.08: The Program Director (PD) and Director of Clinical Education (DCE) of a bachelor’s or master’s program must have earned at least a master’s degree from an academic institution accredited by a regional or national accrediting agency recognized by the U.S. Department of Education (USDE).

OTC employs two full-time faculty in the Respiratory Therapy program who **meet or exceed** these standards:

Dr. Aaron Light, DHSc., RRT-ACCS, serves as program director. Dr. Light’s credentials include:

- Doctorate of Health Science**
Nova Southeastern University
- Master of Science - Respiratory Care Leadership**
Northeastern University
- Bachelor of Science - Respiratory Therapy**
Missouri State University
- Bachelor of Science - Management**
Missouri State University
- Associate of Applied Science - Respiratory Therapy**
Ozarks Technical Community College

⁹ “Accreditation Standards for Entry into Respiratory Care Professional Practice” Commission on Accreditation for Respiratory Care. 2020. <https://www.coarc.com/News-and-Events/CoARC-Entry-Standards-7-1-2020.aspx>

Brandon Burk, MS, RRT-ACCS, serves as Director of Clinical Education. Mr. Burk's credentials include:

Master of Science - Respiratory Care Leadership

Northeastern University

Bachelor of Science - Respiratory Therapy

Missouri State University

Associate of Applied Science - Respiratory Therapy

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OTC also currently employs five part-time faculty in the respiratory therapy program. **All meet or exceed** the requirements for teaching at the associate-degree level.

Standards 2.03/2.09: The PD and DCE must hold a valid Registered Respiratory Therapist (RRT) credential and current state license; have a minimum of four (4) years' experience as a Registered Respiratory Therapist with at least two (2) years in clinical respiratory care; have a minimum of two (2) years' experience teaching either as an appointed faculty member in a CoARC accredited respiratory care program or as a clinical instructor/preceptor for students of such programs; complete the CoARC key personnel training program.

OTC's current respiratory therapy program faculty **meet or exceed** the required levels of education and experience to teach at the baccalaureate level:

Dr. Light holds credentials as a Registered Respiratory Therapist and Adult Critical Care Specialist. He worked as a respiratory therapist for nearly 14 years in adult ICUs, neonatal intensive care, and pediatric intensive care. He has taught at OTC since 2003.

Mr. Burk holds credentials as a Registered Respiratory Therapist and Adult Critical Care Specialist. He worked as a respiratory therapist for three years and served as the Educational Coordinator for the Respiratory Care at Mercy-Springfield before joining OTC as an educator in 2015.

Both Dr. Light and Mr. Burk are published researchers and regularly present at professional conferences. Both hold memberships in several professional organizations, including the Missouri Society of Respiratory Care (MSRC) and the American Association of Respiratory Care (AARC). Dr. Light serves on the board of the AARC.

Faculty added to the respiratory therapy program will also meet or exceed the CoARC standards for teaching in a baccalaureate degree program.

Research and Innovation

Research is an important component of existing respiratory therapy programs. According to the *AARC Issue Paper - Entry to Practice in Respiratory Therapy*,

“Advances in technology, disease management, telemedicine, patient navigation, disease protocols, evidence-based medicine, palliative care, and clinical research now are mainstays in medicine and clinical practice. The future demands respiratory therapists to be well versed in these areas of patient care in order to remain relevant members of the interprofessional health care team.”¹⁰

The AARC organized a series of conferences (2015 and Beyond Conferences) to address many issues including the roles and responsibilities of respiratory therapists in the future as well as the competencies required for RTs to succeed. In the article related to competencies that would be required of RTs, the following is stated:

“The information age of the future will be replete with changes in the scope of practice. The science of respiratory care will continue to expand at the same pace as medicine. Projections regarding the profession must incorporate new technology, new therapeutic approaches, and data management skills, which the future RT will need to be successful in the workplace. Clinical decisions will be increasingly data driven; with evidence-based medicine guiding the activities of the therapist. The need for therapists to be actively involved in research will continue to grow. The use of protocols to guide respiratory care within and outside the intensive care unit (ICU) will continue to expand.”¹¹

One of the major competency areas determined essential was Competency Area III: Evidence-Based Medicine and Respiratory Care Protocols, which includes the ability of respiratory therapists to review and critique published research, explain the meaning of general statistical tests, and apply evidence-based medicine to clinical practice.

Though OTC’s existing respiratory therapy program integrates research opportunities for students, current restrictions on credit hours in an associate-level respiratory care program make it difficult to provide students the necessary time to learn and practice these critical research skills. OTC’s bachelor’s program will include dedicated research coursework to advance research in the field of respiratory care. The proposed curriculum is detailed in Appendix C.

Investment, Advocacy and Partnerships

Healthcare providers across southwest Missouri are enthusiastic supporters of this proposal. They are in the difficult position of trying to provide the best level of care to their patients, yet they are hurting due to the shortage of qualified respiratory therapists. Health care organizations and hospitals - from large to small – are seeking help to develop a pipeline of

¹⁰ “Issue Paper: Entry to Respiratory Therapy Practice 2030” American Association for Respiratory Care. September 2019. <https://www.aarc.org/wp-content/uploads/2019/09/issue-paper-executive-summary-entry-to-respiratory-therapy-practice-2030.pdf>

¹¹ Barnes, Thomas; Gale, David; Kacmarek, Robert, Kageler, Woody. “Competencies Needed by Graduate Respiratory Therapists 2015 and Beyond” *Respiratory Care*. May 2010. American Association for Respiratory Care. https://www.aarc.org/wp-content/uploads/2013/07/2015_competencies_needed.pdf

skilled professionals but OTC is, at the present time, unable to respond to that need. Letters of support in Appendix B are evidence of their need and their support.

Evidence of Institutional Capacity

(I). Assessment of the institution's capacity to offer the new program in terms of general, academic, and student service support, including faculty resources that are appropriate for the program being proposed (e.g., faculty credentials, use of adjunct faculty, and faculty teaching workloads):

General

OTC is accredited by the Higher Learning Commission (HLC), which establishes standards for academic and student support services, as well as faculty credentials. The HLC requires accredited institutions to provide regular evidence to indicate compliance with its Assumed Practices and Criteria for Accreditation. Institutions must demonstrate that they have the resources, structures, and processes sufficient to fulfill their missions, improve the quality of their educational offerings, and respond to future challenges and opportunities (Criteria for Accreditation 5). They must also ensure that they have sufficient numbers and continuity of faculty members to carry out both the classroom and the non- classroom roles of faculty, including oversight of the curriculum and expectations for student performance, assessment of student learning, and establishment of academic credentials for instructional staff (Criteria for Accreditation 3.C.1) and that all instructors and student services staff are appropriately qualified (Criteria for Accreditation 3.C.3/3.C.7). All institutions must demonstrate responsibility for the quality of their educational programs, learning environments, and support services, and evaluate their effectiveness for student learning through processes designed to promote continuous improvement (Criteria for Accreditation 4).¹²

OTC has already been in contact with the HLC about submission of a New Program Substantive Change application, which would grant approval for OTC to offer a baccalaureate degree. If OTC obtains CBHE approval of this proposal, the college is ready to engage in this process with the HLC.

In addition, **OTC's Respiratory Therapy program is accredited by the Commission on Accreditation for Respiratory Care (CoARC)**. CoARC accreditation standards require accredited institutions to demonstrate their capacity to meet academic and student support needs. The CoARC standard 2.01 Institutional Resources Interpretive Guideline states that sponsor institutions "should have the financial resources required to develop and sustain the program on a continuing basis" and that this includes academic support resources, in addition to qualified faculty.¹³

¹² "HLC Policy: Current Criteria for Accreditation" Higher Learning Commission. June 2014.

<https://www.hlcommission.org/Policies/criteria-through-august-31-2020.html>

¹³ "Entry into Practice Standards" [https://www.coarc.com/getattachment/Accreditation/Entry-into-Practice-Standards/CoARC-Entry-Standards-7-1-2020-\(1\).pdf.aspx?lang=en-US](https://www.coarc.com/getattachment/Accreditation/Entry-into-Practice-Standards/CoARC-Entry-Standards-7-1-2020-(1).pdf.aspx?lang=en-US)

Academic and Student Support Services

OTC has approached academic and student support in a holistic manner. The college is in the process of implementing a Student Success model which assigns a designated navigator to each student upon application to the institution. Navigators serve as the central point of contact for the student from application through graduation. These individuals guide the student to success by pointing the student to college services that will benefit them and their unique circumstances. Some of the comprehensive academic and student supports in place include:

- Free academic tutoring in nearly every general education course offered at the college, as well as some Allied Health and Technical Education offerings. This includes a dedicated Writing Center. All academic tutoring is offered in-person and virtually through Zoom.
- A comprehensive library featuring diverse collections, interlibrary loan services, MOBIUS access, and research databases that are discipline-specific, such as Allied Health Search, CINAHL, and Nursing Reference Center Plus.
- Dedicated disability support services staff that foster an environment in which individuals are viewed on the basis of ability, not disability.

Faculty Resources

All faculty teaching at OTC, part-time or full-time, meet the credentialing requirements set forth by the HLC for their discipline. All general education faculty possess a minimum of a master's degree with at least 18 graduate credit hours in the discipline they teach. The Respiratory Therapy program employs two full-time faculty and five part-time faculty. To support a bachelor's level program, OTC plans to add two full-time Respiratory Therapy faculty who will possess the required credentials. One will serve as the program site coordinator at the Waynesville Education Center.

Full-time faculty at OTC teach a base load of 15 credit hours per semester. In Allied Health programs, full-time faculty teach between 15-25 contact hours weekly. Program directors teach 10-15 contact hours each week, and the director of clinical education in Respiratory Therapy is responsible for 10-15 contact hours of instruction per week. The site coordinator will have a teaching load of 15-20 contact hours each week.

All faculty members at OTC are supported by the Center for Academic Innovation (CAI). The CAI exists to provide faculty development, including curriculum development support and strategies for teaching improvement. New faculty are supported through a year-long assimilation and support program, the New Faculty Institute. Each new faculty member is assigned a seasoned faculty mentor during the first year of their employment.

(II). Comprehensive cost/revenue analysis summarizing the actual costs for the program and information about how the institution intends to fund and sustain the program

It is important to note that most healthcare training programs are costly to implement and sustain, and they are not offered as profit centers for the college. They are offered to serve the

region’s need for a skilled healthcare workforce, consistent with OTC’s mission. As the need exists for a credentialed respiratory therapy workforce in our region, the college understands and commits the resources necessary to supplement and support all academic program costs, both directly and indirectly.

Respiratory Therapy Instructional Program – 3-Year Revenue/Expense Analysis

RESPIRATORY THERAPY INSTRUCTIONAL PROGRAM - 3-Year Revenue/Expense Analysis				
	BS - YEAR 1 PROJECTION	(AAS only) FY20	(AAS only) FY19	(Incremental Costs of the 30-New Student Cohort only)
Tuition & Fees	456,300	143,520	138,000	312,780
Salaries & Benefits	471,995	215,595	198,913	256,400
Professional Development	10,975	4,878	3,123	6,097
Accreditations	5,650	2,100	2,100	3,550
Supplies & Services	15,500	6,881	6,408	8,619
Equipment *	72,750	0	23,564	72,750
Program Expenses	576,870	229,454	234,108	347,416
NET	(120,570)	(85,934)	(96,108)	(34,636)

Budget Narrative

Tuition and Fees: For FY20, OTC capacity in respiratory therapy is 24 students. These students are enrolled in approximately 46 credit hours (excluding general education courses) at \$130 per credit hour.

Adding an estimated 30-student cohort for the BS degree, will bring the total students served to 54 enrolled in 65 respiratory therapy credit hours. At \$130 per credit hour, this equals \$456,300.

Program fees are not included on this budget since they go directly to pay for student supplies. These fees are adjusted as needed.

Salaries and Benefits: Currently, two full-time faculty support the existing AAS program. Current salary and fringe benefits expenses is \$190,000 (approximately 36% fringe benefits). Additional part-time faculty are employed at an annual cost of \$26,000.

For the BS cohort, three additional full-time Respiratory Therapy faculty will be added. This equals \$224,400 in added personnel expenses (approximately \$55,000 plus fringes for each). It is anticipated that additional part-time faculty will need to be employed as well at an annual cost of \$32,000 (2.25 times existing expense). This totals \$471,995.

Other Direct Program Costs: *(projected costs were determined by calculating 2.25 times existing expenses)*

Professional Development: OTC budgets allow for faculty to engage in important professional development opportunities to maintain currency with the profession.

Accreditations: Costs associated with accreditation fees. The CoARC accreditation of the satellite location will be added.

Supplies and Services: Necessary supplies needed for support of instructional activities. This includes office supply costs for faculty.

Equipment: Necessary equipment needed for support of instructional activities. Equipment costs needed for the new cohort total \$291,000. Equipment purchases are reimbursed through state grant funding up to 75% of cost, or \$72,750. This is a first-year cost only.

The existing classroom and lab space at the Springfield campus is adequate to accommodate the additional BS student cohort. At the Waynesville Education Center, one classroom will be remodeled as a respiratory therapy lab space, creating an educational environment for Waynesville students that is equitable in space and equipment to the Springfield lab. This is an additional one-time cost of approximately \$11,000 that the college has adequate funds to cover and is not a program expense.

Other direct costs, such as administrative, academic and student services, and marketing costs can be absorbed into existing budgets with no increase.

(III). Evidence indicating there is sufficient student interest and capacity to support the program, and, where applicable, sufficient capacity for students to participate in clinical or other external learning requirements, including library resources, physical facilities and instruction equipment;

The following data are specific to the state of Missouri and can be found in CoARC's 2019 *Report on Accreditation in Respiratory Care Education* and the 2020 *Report of Current Status* attached as Appendix D.

APPLICATIONS

Respiratory Care Applications in Missouri:

	2018	2017	2016	2015
Associate's	170	103	132	164
Bachelor's	25	25	19	28

Respiratory Care Applications at OTC:

	2020	2019	2018	2017	2016	2015
Associate's	35	30	45	35	20	25
Bachelor's	NA	NA	NA	NA	NA	NA

ENROLLMENTS

New Enrollments in Missouri:

	2018 Max Capacity	2018	2017	2016	2015
Associate's	243	126	78	86	120
Bachelor's	24	19	22	10	21

New Enrollments at OTC:

	2020 Max Capacity	2020	2019	2018	2017	2016	2015
Associate's	24	20	15	22	18	14	19
Bachelor's	NA	NA	NA	NA	NA	NA	NA

GRADUATES

Total Graduates of Respiratory Therapy programs in Missouri:

	2018	2017	2016	2015
Associate's	98	92	96	118
Bachelor's	8	20	15	11

Total Graduates of Respiratory Therapy at OTC:

	2020	2019	2018	2017	2016	2015
Associate's	0	12	18	14	13	15
Bachelor's	NA	NA	NA	NA	NA	NA

These applicant, enrollment, and graduate numbers are instructive in the following ways:

- Missouri’s community colleges have historically been the primary producers of qualified respiratory therapists in the state.
- The total number of graduates from respiratory therapy programs in Missouri the estimated 220 annual vacancies. The number of graduates from OTC is not enough to fill the estimated 40 vacancies in our service region.
- As the profession moves to a bachelor’s for entry requirement, those who aspire to become respiratory therapists will be required to obtain a baccalaureate degree.
- Respiratory therapy program applicants and enrollments are on the uptick again after a periodic lull. *Note:* The pandemic and COVID-related concerns caused some students who were admitted to OTC’s program to decline enrollment in 2020.
- Increased applicant numbers indicate increasing interest in the field of respiratory care. However, a more concerted effort to increase awareness of the respiratory care profession is needed. The recent global pandemic has brought greater awareness of the profession where little may have previously existed.

As respiratory care pushes further toward the requirement of a bachelor’s degree for entry to the profession, there is indication that the number of therapists who have or desire to attain a bachelor’s degree is increasing. The most recent AARC Human Resource Survey of 19,281 therapists reported these key findings:

- The percentage of respondents reporting a bachelor’s degree or higher went from 40.5% in 2014 to 43.2% in 2017.
- 11.9% of respondents in the associate’s degree category in the 2017 survey said they were working on a higher academic degree.
- The percentage of respondents who reported that they were pursuing a higher degree to advance their career in respiratory care increased from 2014 to 2017.
- Further analysis of the results led the authors to conclude that 55–56% of respondents either had or may have been working toward a bachelor’s degree in 2017.¹⁴

(IV). Description of accreditation requirements.

In order to practice as a respiratory therapist in 49 out of 50 states (except Alaska), a state license is required. To become licensed, respiratory therapy graduates must pass the National Board for Respiratory Care (NBRC) board exams. Admission requirements for the NBRC board exams state that applicants must be graduates of a program accredited by the Commission on Accreditation for Respiratory Care (CoARC).¹⁵ As stated previously, the mission of the CoARC is to ensure that high quality educational programs prepare competent respiratory therapists for practice, education, research, and service.

Beginning January 1, 2018, the CoARC updated its Standard 1.01, which is still current in its

¹⁴ AARC Respiratory Therapist Human Resource Study. 2017. <https://www.aarc.org/resources/tools-software/aarc-respiratory-therapist-human-resource-study-2014/>

¹⁵ Examinations. The National Board for Respiratory Care. June 2020. <https://www.nbrc.org/examinations/>

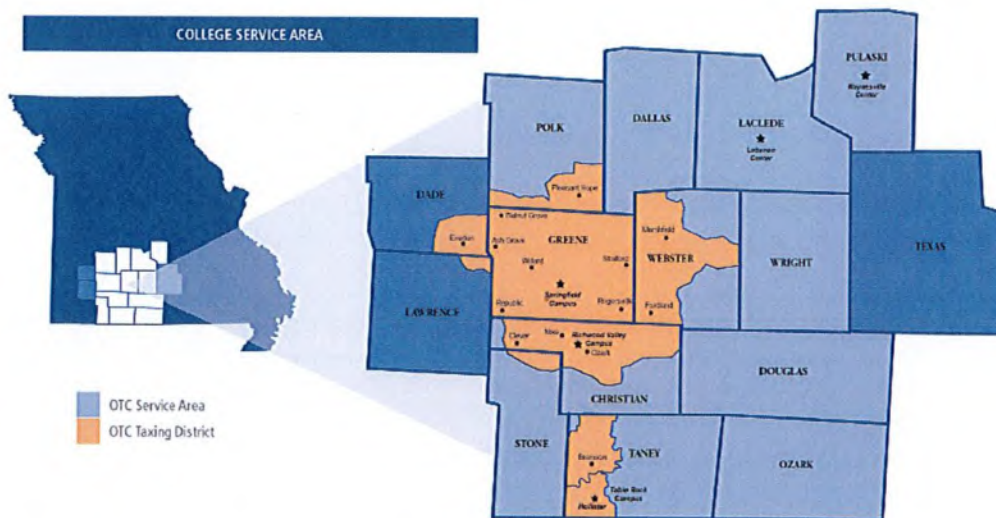
most recent update in the 2020 Entry to Respiratory Care Practice Standards:

Standard 1.01: Except as provided in the following paragraphs, an educational sponsor must be a post-secondary academic institution accredited by a regional or national accrediting agency recognized by the U.S. Department of Education (USDE) and must award program graduates a baccalaureate or graduate degree.

Associate degree programs that were accredited prior to January 1, 2018, or that applied for accreditation prior to January 1, 2018 and have subsequently received accreditation, may continue to award program graduates an associate degree as long as they remain accredited by the CoARC. Sponsors of these programs must be post-secondary academic institutions accredited by a regional or national accrediting agency recognized by the USDE and must award program graduates an associate degree.¹⁶

C. Evidence that the Proposed Program is Needed

(I). Documentation demonstrating that the program does not unnecessarily duplicate other programs in the applicable geographic area.



OTC offers the only CoARC-accredited respiratory therapy program in its 12-county service region. Missouri State University in Springfield offers a degree advancement bachelor's degree in Respiratory Therapy for those who already hold a Registered Respiratory Therapist credential; however, the program is not CoARC accredited.

¹⁶ "Accreditation Standards for Entry into Respiratory Care Professional Practice" Commission on Accreditation for Respiratory Care. 2020. <https://www.coarc.com/News-and-Events/CoARC-Entry-Standards-7-1-2020.aspx>

The OTC service region encompasses approximately 140 miles and serves a large rural student population. Internal research indicates that nearly half of OTC students reside in a rural area. Many of these students are place-bound due to family or financial obligations, so access to educational opportunities is limited. Sixty-five percent of OTC students receive some form of financial aid.¹⁷ OTC's strategic placement of campuses and education centers throughout our service region, as well as the low cost of attendance, provide greater access for education and job training.

The capacity to delivery respiratory therapy curriculum online is limited due to the required hands-on, skills-based lab and clinical component. Also, accreditation requirements and the parameters placed upon satellite programs are limiting in terms of distance between sites and personnel required at each location. There is no unnecessary duplication of other programs within the geographic area of OTC's service region.

(II) Rigorous analysis demonstrating strong and compelling workforce need;

The U.S. Bureau of Labor Statistics estimates that the demand for respiratory therapists will grow 21% from 2018 to 2028, much faster than the average for all occupations. The aging population will lead to an increased demand for respiratory therapy services and treatments. The most need for respiratory therapists will be in rural areas.¹⁸

The Missouri Economic Research and Information Center (MERIC) reports that healthcare is the top industry in the state; unfortunately, the demand for qualified healthcare providers outpaces supply. This is true for respiratory therapists as well. MERIC data indicate that the demand in Missouri for skilled respiratory therapists will grow nearly 28% by 2026, with annual vacancies numbering 220 statewide.¹⁹ The Ozark Region anticipates a 38.5% growth.²⁰ In fact, MERIC identifies Respiratory Therapy as a "Top Grade Career" in the Ozark Region of the state.

However, for the last three years of IPEDS completion data, Missouri institutions have produced an average of only 163 respiratory therapy graduates annually. If OTC is approved to offer a bachelor's in respiratory therapy, there is potential to help narrow the workforce pipeline gap in this industry.

Additionally, respiratory therapy is a well-paying occupation. According to MERIC, the average entry-level salary for Respiratory Therapists is \$45,020 with an average annual wage of \$56,340.

It is important to note that these data were compiled before the recent novel coronavirus

¹⁷ Fall 2019 Fact Sheet. <https://research.otc.edu/media/uploads/2020/02/2019-Fast-Facts.pdf>

¹⁸ Occupational Outlook Handbook: Respiratory Therapists. Bureau of Labor Statistics. June 2020. <https://www.bls.gov/ooh/healthcare/respiratory-therapists.htm>

¹⁹ Real Time Labor Market Data. Missouri Economic Research and Information Center. June 2020. <https://meric.mo.gov/media/pdf/real-time-labor-market-summary>

²⁰ Regional Profiles. Missouri Economic Research and Information Center. June 2020. <https://meric.mo.gov/regional-profiles>

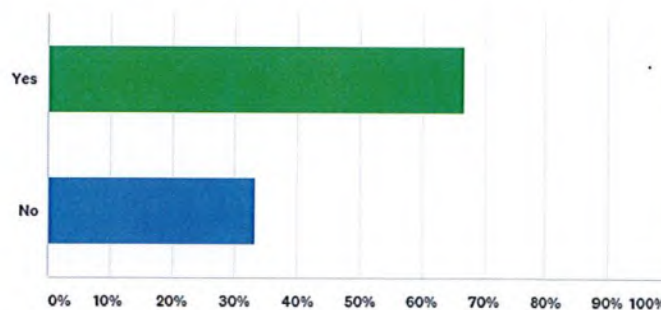
pandemic, which has highlighted the need for skilled and highly-trained respiratory therapists who work on the frontlines of the fight against this illness. Burnout is reported to be extremely high in the profession due to the stress of long hours, shortage of ventilators, and lack of adequate personal protective equipment.²¹

Statewide, the demand for respiratory therapists is outpacing supply. This is especially true in the Ozark Region of Missouri, which anticipates a nearly 40% increase in the need for respiratory therapists by 2026.²² A survey of currently-posted job openings at hospitals within OTC's service region shows nearly 40 respiratory care vacancies; at the present time, OTC is approved to serve only 24 students.

An external market analysis was conducted by BKD, which confirms that job posting and employment metrics show growth and score at the 77th percentile of all academic programs in the OTC service area; job postings show a 90th percentile score over the last 12 months in the aggregate of southwest Missouri counties. The market analysis also shows that student demand reported in the 86th percentile of all academic programs in OTC's service area counties, and in the 81st percentile of all academic programs in southwest Missouri. BKD's full market analysis can be found in Appendix E.

In 2018, the Missouri Society for Respiratory Care (MSRC) sent out a survey to all members asking therapists in the state if a BS degree should be the entry to the profession. This was a statewide survey conducted in response to the AARC's position statement. It was sent to AARC members via an email link placed on the MSRC social media pages and promoted by MSRC board members. As demonstrated by the chart below, subjects were asked, "Do you feel that the move to BS entry is the correct move for Respiratory Therapy?" The survey received 135 responses from across the state; 68.89% (93) stated "Yes," and 31.11% (42) stated "No."

Q2 Do you feel that the move to BS entry is the correct move for Respiratory Therapy?



An expansion to the northern part of our service area in Waynesville will help supply that

²¹ "Even After the Coronavirus Pandemic, America Can't Breathe Easy." US News and World Report. 1 April 2020. <https://www.usnews.com/news/healthiest-communities/articles/2020-04-01/coronavirus-pandemic-exposes-need-for-respiratory-therapists>

²² Regional Profiles. Missouri Economic Research and Information Center. June 2020. <https://meric.mo.gov/regional-profiles>

region with a pipeline of skilled therapists. OTC also has an established presence on-site at Fort Leonard Wood, and there has been an indication of interest in this program among service members and their families. The OTC Waynesville location's close proximity to Fort Leonard Wood will benefit our military student population who wish to pursue this degree.

(III) Clear plan to meet the articulated workforce need

(a) Aligned curriculum with specific knowledge and competencies needed to work in the field

Due to the quality of OTC's program as documented earlier in this proposal, the OTC Respiratory Therapy program boasts a 100% placement rate for its graduates. The CoARC standards for respiratory therapy curriculum are consistently followed and the curriculum will be adapted for offering at the bachelor's level.

The CoARC addresses its program goals in Standard 3.01:

"The program must have the following goal defining minimum expectations: "To prepare graduates with demonstrated competence in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains of respiratory care practice as performed by registered respiratory therapists (RRTs)." ²³

It further stipulates additional requirements for bachelor's degrees or higher:

"For programs offering a bachelor's or master's degree, the program must have the following additional goal defining minimum expectations: "To prepare leaders for the field of respiratory care by including curricular content that includes objectives related to acquisition of skills in one or more of the following: management, education, research, advanced clinical practice (which may include an area of clinical specialization)." ²⁴

Standard 4.01 more specifically defines minimum course content:

"The curriculum must include content in the following areas: oral and written communication skills, social/behavioral sciences, biomedical/natural sciences, and respiratory care. This content must be integrated in a manner that promotes achievement of the curriculum's defined competencies." ²⁵

Standard 4.02 further explains the requirements, specifically for bachelor's programs or higher:

"The curriculum must include preparation for practice as a respiratory therapist with

²³ "Statement of Program Goals, 3.01." <https://www.coarc.com/CoARC/media/Documents/CoARC-Entry-Standards-1-1-18.pdf>

²⁴ "Statement of Program Goals, 3.01." <https://www.coarc.com/CoARC/media/Documents/CoARC-Entry-Standards-1-1-18.pdf>

²⁵ "Curriculum: Minimum Course Content, 4.01." <https://www.coarc.com/CoARC/media/Documents/CoARC-Entry-Standards-1-1-18.pdf>

exposure to a broad variety of practice settings (e.g., hospital, long-term care, home care, clinic/physician office).

For programs offering a bachelor's or master's degree, the program must include content related to leadership development in management, education, research AND/OR advanced clinical practice (which may include an area of clinical specialization)."²⁶

Standards 4.04 through 4.07 further define the competencies required of a Registered Respiratory Therapist, including diagnostic and therapeutic procedures, team and interpersonal communication skills, critical thinking and problem-solving, and ethical decision-making.²⁷

OTC's proposed bachelor's degree in respiratory therapy has been developed with alignment to these standards in mind. A draft of the proposed program is included in Appendix C, which incorporates all the elements required by the CoARC standards. The program is designed to have a heavy clinical focus and includes five semesters with a clinical component. It is also designed with a focus on research. These emphases serve to provide students with the necessary knowledge and skills to be exceptional clinicians, but also provides them with a solid educational foundation should they desire to progress to a master's degree.

Further, AARC respiratory care competencies include collection of diagnostic information, disease management, evidence-based medicine and respiratory care protocols, patient assessment, leadership, emergency and critical care, assessment of therapeutics, application of therapeutics, and post-acute care.²⁸

Student learning outcomes will be based upon the necessary skills, knowledge, and professional behaviors required of a Registered Respiratory Therapist with a bachelor's degree as stipulated by the CoARC and the AARC. The credentialing organization, the National Board for Respiratory Care (NBRC) has created a matrix of the two required board exams for the RRT credential that align with a nationwide job analysis performed every five years. The last update was in January 2020. The proposed curriculum in Appendix C has been aligned with the NBRC matrix in Appendix F.

²⁶ "Curriculum: Minimum Course Content, 4.02." <https://www.coarc.com/CoARC/media/Documents/CoARC-Entry-Standards-1-1-18.pdf>

²⁷ "Curriculum: Minimum Course Content, 4.04-4.07." <https://www.coarc.com/CoARC/media/Documents/CoARC-Entry-Standards-1-1-18.pdf>

²⁸ "Respiratory Care Competencies." <https://www.aarc.org/wp-content/uploads/2017/02/respiratory-care-competencies.pdf>

(b) Providing students with external learning experiences to increase probability they will remain in the southwest Missouri region after graduation

It is common for students pursuing a career in health care to go to work in settings in which they have had a good clinical experience. OTC's Respiratory Therapy program has several established clinical sites in the OTC service region:

- CoxHealth – Springfield
- CoxHealth Home Support – Springfield
- CoxHealth – Branson
- Mercy – Springfield
- Select Specialty Hospital – Springfield
- Citizen's Memorial Hospital – Bolivar

In addition, Phelps County Regional Medical Center in Rolla has pledged to support clinical placements, as well as Lake Regional Hospital in Osage Beach. Other sites are being considered for expansion, including Capitol Regional Medical Center in Jefferson City, CoxHealth in Monett, and Mercy Hospital in Lebanon.

While OTC cannot ensure that graduates will stay within the service region, it has been our experience that supporting students with quality clinical opportunities increases that likelihood. Most of OTC's students stay in Missouri post-graduation, and this is true of Respiratory Therapy graduates as well.

(c) A plan for assessing the extent to which the new program meets workforce need when implemented

Each year, Respiratory Therapy programs provide the CoARC a report of their assessment surveys and outcomes data for their program. The assessment piece includes surveys from employers of graduates, graduates, current students and program faculty (including the Advisory Committee). Last year, the OTC associate degree program received passing marks in all areas of the survey assessment except for one low rating (one respondent) that mentioned the temperature of the classroom. The full report and survey questions in the included 2020 annual report are submitted as Appendix D. Some key outcomes of the 2017-2019 cohorts:

- The OTC associate degree program received a **100% overall graduate satisfaction** rating from the 2017, 2018, and 2019 graduates.
- During those same years, **employers reported a 100% overall satisfaction** with the graduates.
- The outcome data for OTC associate degree program includes a **94% pass rate on the RRT (Registered Respiratory Therapist)** for program graduates, with 96% of them passing the Therapist Multiple Choice exam at the high cut score.
- Even though the program is a rigorous one with high demands of excellence, the program **maintained a 93% retention rate**.
- During that time frame, graduates reported a **98% job placement rate** with only one

- During that time frame, graduates reported a **98% job placement rate** with only one graduate not working in the field.

The success of the program on outcome measurements has led the program to receive the CoARC Distinguished RRT Credentialing Success Award nine times and receive the CoARC Excellence in Respiratory Care Education Award in 2009 (CoARC only awarded this award in 2009). Only three programs in the United States have received the CoARC Distinguished Credentialing Success Award nine times, and OTC is the only associate-level program in that group.

In addition to the annual report that assesses the respiratory therapy program, program faculty review the results of student exit exams and the current NBRC matrix every year. Students in the spring semester of the program must take and pass mock board exams that are purchased from the NBRC for school testing purposes. The results of these exams are broken down into categories associated with the NBRC matrix and faculty will assess where students need more work in the program. Additionally, the graduates' actual NBRC board examinations are assessed for the same areas of improvement for the program.

In addition to these outcomes metrics, the Respiratory Therapy program relies heavily upon its advisory committee for feedback. This group is comprised of regional respiratory therapy industry professionals, college faculty, the program's medical director, and students. Their input guides the revision and development of curriculum and instruction to ensure that graduates are highly competent and valuable employees for area health care providers.

Once the bachelor's-level program is started, OTC will use the same methods of assessment to ensure that workforce needs are being met.

Appendix A

Correspondence Regarding Collaborations with Four-Year Institutions in Missouri

June 25, 2020

Commissioner Zora Mulligan
Missouri Department of Higher Education and Workforce Development
P.O. Box 1469
Jefferson City, MO 65101

Dear Commissioner Mulligan:

In May 2020, the University of Missouri System (UM) was notified by Ozark Technical College (OTC) and St. Louis Community College (STLCC) of their intent to submit a preliminary proposal to offer a baccalaureate degree in respiratory care. Both institutions expressed interest in exploring the feasibility of a collaboration with UM. MU currently offers an accredited bachelor's degree program in respiratory therapy. Following internal discussions and a conversation with the vice chancellors for academic affairs at OTC and STLCC, UM has concluded that at this point we are not interested in developing a collaborative bachelor's program with either institution.

Policy changes initiated by the Commission on Accreditation for Respiratory Care (CoARC) were amended and OTC and STLCC would require the authorization to offer the baccalaureate-level program to start a new or expand an existing respiratory care program. The developing COVID-19 pandemic makes the value of further investments in respiratory therapists obvious, and it is likely there will be workforce demand in both Springfield and St. Louis.

OTC and SLCC are unique from the other community colleges currently expressing interest in starting bachelor's programs. Both OTC and SLCC have existing accredited RT programs at the associate degree level and likely have the necessary equipment and faculty who could offer the program. However, we have significant concerns about other community colleges who do not have existing RT programs related to the actual market need and the necessary resources. We also have reservations about the conditions required for a collaborative partner in the original inquiries. Some of the "terms" outlined in the original inquiry were not reasonable and not in the spirit of the legislation or the DHEWD administrative rules (e.g., maximum of 30 hours of coursework from the four-year institutions and the four-year university coursework offered at community college rates).



MISSOURI
SYSTEM

We appreciate that OTC and STLCC reached out and engaged with us from the beginning. This is an integral part of the process as outlined by statute and, just as importantly, an important way to foster productive relationships between two- and four-year institutions. Even though MU is not interested in a collaboration at this point, OTC and STLCC may want to seek opportunities with other four-institutions to see if they are interested in creating a collaborative partnership.

A handwritten signature in cursive script that reads "Steve Graham".

Steve Graham
Senior Associate Vice President for Academic Affairs
University of Missouri System
grahams@umsystem.edu | (573) 882-3119



Missouri State.
U N I V E R S I T Y

November 12, 2020

Tracy McGrady, Provost
Ozark Technical Community College
Springfield, MO 65807

CONCERNING: OTC Proposal to develop a bachelor's degree in Respiratory Care

Dear Dr. McGrady:

The background for this letter is that over the last six months Missouri State University (MSU) and Ozark Technical Community College (OTC) have been in active discussions focused on developing a joint program between our institutions to deliver a B.S. in Respiratory Care. However, since at this point we have not been able to reach an agreement that provides for MSU to offer a reasonable amount of the course work for the proposed bachelor's degree, we do not object to you submitting a program proposal that OTC intends to offer this degree without MSU as a collaborating partner.

We remain committed to working with OTC in the many other collaborative efforts that have been successful and efficient for both of our institutions. I trust that as in prior years some students from MSU will desire to enter the clinical curriculum at OTC that is required for licensure to work in the field of Respiratory Therapy. Likewise, we anticipate and welcome OTC Respiratory Therapy students enrolling at MSU when they wish to take advantage of specialized health-care, business, leadership and other upper division courses or graduate programs that they may see as advantageous to them in their career pathway.

Sincerely,

Frank Einhellig
Provost

C: Clif Smart, President
Missouri State University

Office of the Provost

901 S. National Ave. • Springfield, Missouri 65997
417-836-4589 • Fax 417-836-8432

missouristate.edu/provost • provost@missouristate.edu

An Equal Opportunity/Affirmative Action/Minority/Female/Veteran/Disability/Sexual Orientation/Gender Identity Employer and Institution

MCGRADY, TRACY M.

From: Beth Harville <bharville@drury.edu>
Sent: Wednesday, April 29, 2020 10:55 AM
To: MCGRADY, TRACY M.
Subject: Re: Respiratory Therapy - Collaboration Opportunity

Tracy,

Thank you for reaching out about a collaboration to offer a bachelor's degree in respiratory care. We greatly value the articulation agreements we have with OTC and want to continue to partner with you in the future. I have talked with Dr. Cloyd and unfortunately we will not be able to partner with OTC on this degree at this time.

I hope you and your faculty are doing well.

Beth

Beth Harville, PhD
Provost
Drury University

From: MCGRADY, TRACY M. <mcgradyt@otc.edu>
Sent: Tuesday, April 28, 2020 11:29 AM
To: Beth Harville <bharville@drury.edu>
Subject: Respiratory Therapy - Collaboration Opportunity

Good morning, Beth –

You may be aware that some of Missouri's community colleges will be submitting a preliminary proposal to MDHEWD seeking permission to offer a bachelor's degree in respiratory care. This is the result of the Commission on Accreditation for Respiratory Care (CoARC) standards changing to offer accreditation to new programs *only* if they offer the bachelor's degree or higher. CoARC has affirmed their commitment to support currently-accredited associate-level programs, but any expansion we seek to do, even within our own service area, is considered a "new" program by CoARC standards. While legislation passed in Missouri a few years ago opens the door for community colleges to offer bachelor's degree when accreditation or licensure changes mandate it, it also requires attempted collaboration with four-year institutions.

If COVID-19 has taught us anything, it's the importance of a robust number of highly-skilled and qualified health care workers – especially respiratory therapists. Missouri hospitals have suffered from a shortage for several years now. While OTC (and other colleges) would like to assist in creating a strong talent pool, it is impossible to do that with our current capacity. Expansion (or creation of new programs) will be required.

The community colleges are approaching their transfer partner institutions to assess who might be interested in collaboration. Terms are: 1) up to 30 hours of coursework can be completed at the partner university; 2) the coursework is offered according to the partner community college tuition and fee structure; and 3) the degree is conferred by the community college, though a joint conferral will be considered.

Please let me know if you are interested in discussing a collaboration with OTC. Because time is of the essence, I'd request to know your interest level no later than **May 8**.

Thank you! I hope you are well.

Tracy M. McGrady, Ed.D.

Provost and Vice Chancellor for Academic Affairs

Ozarks Technical Community College

1001 E. Chestnut Expressway

Springfield, MO 65802

417.447.8152

mcgradyt@otc.edu

MCGRADY, TRACY M.

From: MCGRADY, TRACY M.
Sent: Wednesday, May 6, 2020 2:11 PM
To: McCorcleM@evangel.edu
Subject: FW: Respiratory Therapy - Collaboration Opportunity

Hi Mike,

Just following up on my email from last week. I know you're busy, so if I haven't heard from you by the end of the week, I'll just assume that Evangel is not interested in this type of collaboration at this time. But if you are interested in discussing it, please let me know by then.

Thank you!

Tracy M. McGrady, Ed.D.
Provost and Vice Chancellor for Academic Affairs
Ozarks Technical Community College
1001 E. Chestnut Expressway
Springfield, MO 65802
417.447.8152
mcgradyt@otc.edu

From: MCGRADY, TRACY M.
Sent: Tuesday, April 28, 2020 11:33 AM
To: McCorcleM@evangel.edu
Subject: Respiratory Therapy - Collaboration Opportunity

Good morning, Mike -

You may be aware that some of Missouri's community colleges will be submitting a preliminary proposal to MDHEWD seeking permission to offer a bachelor's degree in respiratory care. This is the result of the Commission on Accreditation for Respiratory Care (CoARC) standards changing to offer accreditation to new programs *only* if they offer the bachelor's degree or higher. CoARC has affirmed their commitment to support currently-accredited associate-level programs, but any expansion we seek to do, even within our own service area, is considered a "new" program by CoARC standards. While legislation passed in Missouri a few years ago opens the door for community colleges to offer bachelor's degree when accreditation or licensure changes mandate it, it also requires attempted collaboration with four-year institutions.

If COVID-19 has taught us anything, it's the importance of a robust number of highly-skilled and qualified health care workers – especially respiratory therapists. Missouri hospitals have suffered from a shortage for several years now. While OTC (and other colleges) would like to assist in creating a strong talent pool, it is impossible to do that with our current capacity. Expansion (or creation of new programs) will be required.

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Please let me know if you are interested in discussing a collaboration with OTC. Because time is of the essence, I'd request to know your interest level no later than **May 8**.

Thank you! Hope you are well.

Tracy M. McGrady, Ed.D.

Provost and Vice Chancellor for Academic Affairs

Ozarks Technical Community College

1001 E. Chestnut Expressway

Springfield, MO 65802

417.447.8152

mcgradyt@otc.edu



Southwest Baptist University
Office of the Provost

June 23, 2020

Dr. Tracy M. McGrady:

It was a privilege speaking with you about the Respiratory Therapy program at OTC. As I understand the discipline is making a push to the bachelor level. In our discussion we looked at what a partnership might look like. We are willing to explore this further but would have many obstacles to look at to accomplish this task: how are faculty resources split, how is revenue collected and distributed, how are faculty selected (we have different hiring criteria as a faith based institution), etc. It seems that OTC is well equipped to handle the transition and has faculty resources that would be capable of accomplishing this level change. For this particular degree program given the resources that are in place and the fact that partnership could prove problematic, we would lend support to your offering the Respiratory Therapy degree at the bachelor level.

Sincerely,

Dr. J. Lee Skinkle
Provost

Appendix B

**Letters of Support
from
Southwest Missouri Hospitals and
the Commission on Accreditation for Respiratory Care**



April 21, 2020

Hal Higdon, Ph.D.
Chancellor
Ozarks Technical Community College
1001 E Chestnut Expressway
Springfield, MO 65802

Dear Dr. Higdon:

CoxHealth is pleased to support Ozarks Technical Community College's (OTC) proposal for the expansion of respiratory therapy program to the bachelor's degree through the Missouri Department of Higher Education. The College's proposed expansion of its health professions workforce programs is a timely and practical way to address the critical shortage of health care professionals in the Southwest Missouri area.

CoxHealth is a not-for-profit, community hospital and the largest employer in Springfield MO, an area leader in healthcare and community involvement, with six hospitals, more than 80 clinics and five ERs throughout twenty-five counties in Southwest MO. As an employer of more than 12,000 health care professionals, we can attest to the dire need for qualified registered respiratory therapists.

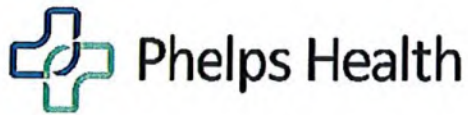
CoxHealth will actively support OTC in this endeavor by offering clinical locations, and interviewing qualified candidates who complete.

The discernment and ability to be nimble to adequately meet the needs of the healthcare workforce, is something that OTC has been at the forefront of in our community and truly in our state. With healthcare and education noted to be the two most important drivers of our local economy we look forward to supporting this program, and working with OTC as they continue to address our region's health sciences workforce pipeline issues.

Sincerely,

A handwritten signature in black ink that reads "Steven D. Edwards".

Steven D. Edwards
President and CEO



June 29, 2020

Tracy M. McGrady, Ed.D.
Provost & Vice Chancellor for Academic Affairs
Ozarks Technical Community College
1001 E. Chestnut Expressway
Springfield, MO 65802

Dear Dr. McGrady

It is my pleasure to write a letter in support of community colleges being able to provide baccalaureate degrees in respiratory therapy. This ability will enable new RT programs to open throughout the state of Missouri.

As a respiratory therapist, I have always made it a priority to collaborate with area respiratory therapy programs by offering my skills as a specialty lecturer and by providing clinical rotations to students. As a respiratory care manager, I was interested in the evidence showing baccalaureate degree educational programs provide improved opportunities for development of the psychosocial, critical thinking, and critical decision-making skills that are essential for RTs to improve the quality and effectiveness of the care they provide to patients. Finally, as a board member for the American Association for Respiratory Care (AARC), I collaborated with my colleagues to recommend that respiratory therapists entering into practice beginning in 2030 must obtain a minimum of a baccalaureate degree in respiratory therapy or health sciences with a concentration in respiratory therapy.

There are 8 accredited programs in Missouri, only 2 of which offer a Baccalaureate degree. Missouri H.B. 1465 allows the Missouri Coordinating Board for Higher Education to authorize community colleges to offer bachelor's programs when such degrees are necessary to meet accreditation, licensure, or employment requirements. With the AARC leadership calling for baccalaureate prepared therapists and the Commission on Accreditation of Respiratory Care (CoARC) mandating that all new respiratory care programs must offer baccalaureate degrees, now is the ideal time for Missouri to authorize community colleges to award baccalaureate degrees in respiratory care.

I fully support Ozarks Technical College in the development and implementation of a baccalaureate degree program for respiratory care. In today's uncertain health care environment the need for the specialized care provided by respiratory therapists is critical. Baccalaureate degree programs that can prepare respiratory therapists to become better leaders and make better care decisions will benefit our patients and our communities at large.

Cheryl A. Hoerr MBA, BSRT, FAARC
Vice President – Internal Affairs, American Association for Respiratory Care
Director, Respiratory & Sleep Services
Phelps Health
1000 W. 10th Street
Rolla, Missouri 65401



Mercy
Springfield
1235 E. Cherokee
Springfield, MO 65804
phone 417-820-2000
www.mercy.net

June 19, 2020

Hal Higdon, Ph.D.
Chancellor
Ozarks Technical Community College
1001 E Chestnut Expressway
Springfield, MO 65802

Dear Dr. Higdon:

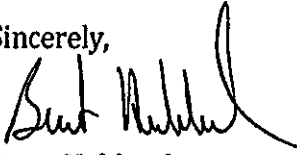
Mercy Hospital Springfield is pleased to support Ozarks Technical Community College's (OTC) proposal for the expansion of the respiratory therapy program to the bachelor's degree through the Missouri Department of Higher Education. This is a timely and practical way to address the critical shortage of health care professionals in the Southwest Missouri area.

Mercy Springfield Communities is comprised of Mercy Hospital Springfield, an 866-bed referral center; an orthopedic hospital; a rehab hospital; a children's hospital; four regional hospitals in Lebanon, Aurora, Cassville, and Mountain View, Missouri; and Mercy Clinic, a physician clinic with nearly 700 doctors and locations throughout the region. It is part of [Mercy](#), named one of the top five large U.S. health systems for four consecutive years (2016 to 2019) by IBM Watson Health, which serves millions annually. Mercy includes more than 40 acute care, managed and specialty (heart, children's, orthopedic and rehab) hospitals, 900 physician practices and outpatient facilities, 45,000 co-workers and 2,400 Mercy Clinic physicians in Arkansas, Kansas, Missouri and Oklahoma. Mercy also has clinics, outpatient services and outreach ministries in Arkansas, Louisiana, Mississippi and Texas. In addition, Mercy's IT division, [Mercy Technology Services](#), and [Mercy Virtual](#) commercially serve providers and patients from coast to coast.

OTC has actively worked to meet the needs of our healthcare workforce in our community and state. With healthcare and education as primary industries in our

area, we look to continue our collaboration and support of this and other health science programs offered through OTC.

Sincerely,

A handwritten signature in black ink, appearing to read "Brent Hubbard". The signature is fluid and cursive, with a large initial "B" and a long, sweeping underline.

Brent Hubbard

President/COO

Mercy Hospital Springfield Communities

November 17, 2020

Tracy M. McGrady, Ed.D.
Provost & Vice Chancellor for Academic Affairs
Ozarks Technical Community College
1001 E. Chestnut Expressway
Springfield, MO 65802

Dear Dr. McGrady

It is my pleasure to write a letter in support of community colleges being able to provide baccalaureate degrees in respiratory therapy. This ability will enable new RT programs to open throughout the state of Missouri.

Citizens Memorial Hospital collaborates with area Respiratory programs to provide a place for the students to learn from seasoned Respiratory Therapists in a clinical setting.

Additionally, we support the evidence showing baccalaureate degree educational programs provide improved opportunities for critical thinking, and critical decision-making skills that are essential for RTs to improve the quality and effectiveness of the care they provide to patients.

There are 8 accredited programs in Missouri, only 2 of which offer a Baccalaureate degree. Missouri H.B. 1465 allows the Missouri Coordinating Board for Higher Education to authorize community colleges to offer bachelor's programs when such degrees are necessary to meet accreditation, licensure, or employment requirements. With the AARC leadership calling for baccalaureate prepared therapists and the Commission on Accreditation of Respiratory Care (CoARC) mandating that all new respiratory care programs must offer baccalaureate degrees, now is the ideal time for Missouri to authorize community colleges to award baccalaureate degrees in respiratory care.

We fully support Ozarks Technical College in the development and implementation of a baccalaureate degree program for respiratory care. In today's uncertain health care environment the need for the specialized care provided by respiratory therapists is critical. Baccalaureate degree programs that can prepare respiratory therapists to become better leaders and make better care decisions will benefit our patients and our communities at large.

Cristy Hiser, BSRT, RRT, RCP
Director of Respiratory Services
Citizens Memorial Hospital



Sarah Hanak, RN, MSN, SCRNP
Chief Nursing Officer
Citizens Memorial Hospital





To Whom It May Concern,

Respiratory therapy is a unique profession. A profession that is filled with joy and pain, wins and losses and many emergent moments. Respiratory therapists are heroes. They possess an amazing care set of abilities. Often called to intervene and save. And what a time to be saving lives! Covid-19 has brought the once quiet and unknown profession to the forefront. Respiratory therapists are the frontline for Covid-19 and quite honestly, many other life-threatening diseases and situations with the potential for other respiratory viruses to emerge on the forefront.

As a respiratory therapy director, the concern is palpable. In the middle of a pandemic there is a massive shortage for respiratory therapists. The problem? The profession needs schools to provide these highly skilled professionals. This has been an ever-evolving problem as development of new programs has been needed. And the demand of respiratory therapists has not been accommodated by an increase in educational programs.

Ozarks Technical Center provides those highly skilled professionals. The school has an honored tradition of developing outstanding professionals. These individuals are known for their professionalism and knowledge. The director of the program insists on excellence while providing the support to these students to build an amazing professional.

A Bachelor's of Respiratory Therapy Program at the Waynesville campus will provide those professionals to an area in Missouri that is desperate for respiratory therapists. The values of Ozarks Technical Center and Aaron Light will be represented in the program. Hospitals in the Mid-Missouri region are at terrifying critical shortages for respiratory therapists. The program would be an asset to individuals looking for an amazing and rewarding career and an asset to the sustainability of respiratory therapists for Mid-Missouri hospitals.

Regards,

Lauren Toman, MAOM, RRT
Director of Respiratory, Sleep, Pulmonary Rehab and the STEMI Coordinator
Texas County Memorial Hospital
ltoman@tcmh.org
417.967.1397 Work
573.247.1219 Cell



COMMISSION ON ACCREDITATION FOR
RESPIRATORY CARE

April 21, 2020

Aaron Light DHSc, RRT-ACCS, FAARC
Program Director – Respiratory Care
Ozarks Technical Community College
Springfield, MO 65802
417-447-8824

Dear Dr. Light,

In reference to the tri-partite statement (available at www.aarc.org) from the Commission on Accreditation for Respiratory Care (CoARC), the American Association for Respiratory Care (AARC), and the National Board for Respiratory Care (NBRC), the CoARC reaffirms its support of the development of baccalaureate and graduate education in respiratory care and encourages respiratory therapists to pursue advanced levels of education.

The CoARC currently accredits your associate degree program and will consider your application for substantive change to a baccalaureate degree, after the college has been approved by the state agency and/or institutional accrediting agency to award the BS degree.

Best wishes with your program development and please feel free to contact me if I can be of any assistance.

Sincerely,

Tom Smalling, PhD, RRT, RRT-SDS, RPFT, RPSGT, FAARC
Chief Executive Officer

Appendix C

**Draft of OTC's Proposed
Bachelor of Science in Respiratory Therapy**

DRAFT - Proposed Bachelor of Science in Respiratory Therapy

(Note: Courses in blue are existing OTC courses. Courses in blue in years 3 and 4 are existing but will be adapted for junior- and senior-level coursework.)

1 st semester	Credit Hrs	2 nd semester	Credit Hrs
BCS 132 Nutrition	3	BCS 165 Anatomy	4
CHM 101 Intro to Chem	3	BCS 200 Microbiology	4
PLS 101 Political Science	3	ENG 101 English I	3
MTH 128 Contemporary Math	3	HSC 120 Medical Terminology	3
PSY 110 Psychology	3		
Total	15		14

3 rd semester	Credit Hrs	4 th semester	Credit Hrs
BCS 205 Physiology	4	RST 105 Cardiopulmonary	3
ENG 102 English II	3	BCS 210 Pathophysiology	4
MTH 210 Stat Methods	3	PHL 105 Ethics	3
BIO 100 Life Science	4	Humanities elective	3
COM 100 Communication	3	Elective	3
Total	17		15

Student will have earned the Associate of Applied Science in Bioclinical Sciences

Respiratory Therapy Program			
Fall Semester Year 3	Credit Hrs	Spring Semester Year 3	Credit Hrs
Pharmacology	3	Diagnostic I	3
Equipment	3	Mechanical Ventilation	4
Equipment Lab	1	Research Evaluation	2
Pulmonary Disease	3	Clinical	6
Clinical	3		
Total	13		15

Summer Semester Year 3	Credit Hrs
Neonatal	2
Pediatrics	2
Research Methods	2
Clinical	3
Total	9

Fall Semester Year 4	Credit Hrs	Spring Semester Year 4	Credit Hrs
Diagnostic II	3	Exam Prep Course	2
Critical Care Concepts	4	Communication & Patient Education	1
Clinical	6	Leadership & Management	3
Research Capstone	1	Clinical	6
		Externship	2
Total	14		14

Program total: **126 credit hours**

Appendix D

CoARC 2020 Report of Current Status



2020 Report of Current Status
Community College or Junior College
Base Entry
200351



Ozarks Technical Community College - Base Entry

Address 1	1001 E Chestnut Expressway
Address 2	-
City	Springfield
Zip Code	65802
State/Territory	Missouri
Phone	4174477500
Program URL	https://academics.otc.edu/alliedhealth/respiratory-therapy/
Outcomes URL	https://academics.otc.edu/alliedhealth/respiratory-therapy/about-the-program/
CoARC Program ID	200351
Program Status	Accreditation
Degree Offered	AAS Degree
Degree Name	-
Institution Control	Public/Not-For-Profit
Institution Type	Community College or Junior College
Max Annual Enrollment	24
Curriculum Delivery	Traditional/Blended
Show CRT/RRT Exams on Outcomes	Yes
Baccalaureate Degree Eligible	No

Personnel

Full Name	Dr. Aaron Light
Credentials	RRT-ACCS
Highest Degree Earned	DHSc
Email	lighta@otc.edu
Phone	(417) 447-8824

Director of Clinical Ed.

Full Name	Mr. Brandon Burk
Credentials	RRT-ACCS
Highest Degree Earned	MS
Email	Burkb@otc.edu
Phone	(417) 447-8823

Medical Director

Full Name	Dr. Brent Bergen
Credentials	-
Highest Degree Earned	MD
Email	Brent.bergen@coxhealth.com
Phone	(417) 875-3160

Clinical Affiliates

Mercy Hospital	Springfield	Missouri	65804
CoxHealth - Cox South	Springfield	Missouri	65804
CoxHealth - Branson	Branson	Missouri	65616
Citizen's Memorial Hospital	Bolivar	Missouri	65613

Current Program Statistics

Enrollment Year	Enrollment Date	On-Time Graduation Date	Estimated Number of Applicants	Maximum Number of Students	Number Initially Enrolled	Number Enrolled After Class Start	Total Enrollment Number	"In Progress" to-date	Number of Students that Dropped Out	Percent Retention	# Grads to Date
2006	6/5/2006	5/20/2007	16	20	16	0	16	0	1	94%	15
2007	6/4/2007	5/18/2008	19	20	16	0	16	0	2	88%	14
2008	6/2/2008	5/14/2009	38	22	20	0	20	0	4	80%	16
2009	6/1/2009	5/13/2010	40	24	23	0	23	0	2	92%	19
2010	6/7/2010	5/19/2011	40	20	18	0	18	0	3	84%	10
2011	6/6/2011	5/17/2012	35	20	20	0	20	0	2	90%	18
2012	6/4/2012	5/16/2013	40	20	20	0	20	0	2	90%	17
2013	6/3/2013	5/15/2014	40	20	16	0	16	0	4	75%	12
2014	6/2/2014	5/20/2015	30	20	18	0	18	0	2	89%	16
2015	6/1/2015	5/12/2016	25	20	19	0	19	0	4	79%	15
2016	6/6/2016	5/18/2017	20	20	14	0	14	0	1	93%	13
2017	6/5/2017	5/17/2018	35	22	18	0	18	0	2	89%	14
2018	6/4/2018	5/16/2019	45	24	22	0	22	0	2	91%	18
2019	6/3/2019	5/14/2020	30	20	15	0	15	2	0	100%	12
2020	6/8/2020	5/13/2021	35	24	20	0	20	20	0	100%	0

Graduates by Enrollment Cohort

Enrollment Year	Enrollment Date	On-time Graduation Date	2020	2019	2018	2017	2016	2015	# Graduates to Date
2006	6/5/2006	5/20/2007							15
2007	6/4/2007	5/18/2008							14
2008	6/2/2008	5/14/2009							16
2009	6/1/2009	5/13/2010							19
2010	6/7/2010	5/19/2011							10
2011	6/6/2011	5/17/2012							18
2012	6/4/2012	5/16/2013							17
2013	6/3/2013	5/15/2014						1	12
2014	6/2/2014	5/20/2015						16	16
2015	6/1/2015	5/12/2016				2	13		15
2016	6/6/2016	5/18/2017			4	9			13
2017	6/5/2017	5/17/2018		2	12				14
2018	6/4/2018	5/16/2019		18					18
2019	6/3/2019	5/14/2020	12						12
2020	6/8/2020	5/13/2021							0

Outcomes

RRT

	2019	2018	2017
Graduates	20	16	11
Passed RRT	17	16	11
% Passed RRT	85%	100%	100%
Threshold	0 %	0 %	0 %

2017 - 2019 Avg: 94 %

Comments

TMC High Cut Score

	2019	2018	2017
Graduates	20	16	11
Passed High Cut Score	18	16	11
% Passed	90%	100%	100%
Threshold	60 %	60 %	60 %

2017 - 2019 Avg: 96 %

Comments

TMC Sub Scores by Content Category

Completion of this section provides documentation towards demonstrating compliance with CoARC Standards 3.05 and 4.03.

Analysis

Only category that was less than 85% of the mean was 2B and we scored a 1.2 with mean being 1.5 on new candidates.

Action Plan

This ensuring infection prevention will be addressed with the additional training on infection prevention via in program education and use of AARC NBRC prep materials focused on this section.

CSE Sub Scores by Content Category

Completion of this section provides documentation towards demonstrating compliance with CoARC Standards 3.05 and 4.03.

Analysis

No section was below 85% of the national mean

Action Plan

Retention

	2019	2018	2017
Students Enrolled	15	22	18
Dropped Out	0	2	2
% Retention	100%	91%	89%
Threshold	70 %	70 %	70 %

2017 - 2019 Avg: 93 %

Analysis

Action Plan

Job Placement

	2019	2018	2017
Graduates	20	16	11
Employed	19	16	11
% Placement	95%	100%	100%
Threshold	0 %	0 %	0 %

2017 - 2019 Avg: 98 %

Comments

Employer Satisfaction

	2019	2018	2017
Graduates	20	16	11
Employed	19	16	11
Surveys Returned	12	13	10
Positive Survey Items	10	10	10
% Positive Items	100%	100%	100%
Threshold	80 %	80 %	80 %

2017 - 2019 Avg: 100 %

Analysis

Action Plan

Graduate Satisfaction

	2019	2018	2017
Graduates	20	16	11
Employed	19	16	11
Surveys Returned	14	10	10
Positive Survey Items	10	9	9
% Positive Items	100%	100%	100%
Threshold	80 %	80 %	80 %

2017 - 2019 Avg: 100 %

Analysis

Action Plan

Outcome Summary

	2019	2018	2017	2016	2015	2014	2013	2012	Threshold	Current Period 3 year average 2019-2017	Previous Period 3 year average 2018-2016
Retention	100%	91%	89%	93%	79%	89%	75%	90%	70%	93%	91%
Job Placement	95%	100%	100%	100%	100%	100%	100%	100%	0%	98%	100%
RRT Credentialing Success	85%	100%	100%	100%	100%	92%	93%	94%	0%	94%	100%
TMC High Cut Score Pass Rate	90%	100%	100%	100%	94%	N/A	N/A	N/A	60%	96%	100%
Overall Employer Satisfaction	100%	100%	100%	100%	100%	100%	100%	100%	80%	100%	100%
Overall Graduate Satisfaction	100%	100%	100%	100%	100%	100%	100%	100%	80%	100%	100%

	2019	2018	2017	2016	2015	2014	2013	2012	Total
Graduates	20	16	11	13	17	13	15	18	135
Enrollment	15	22	18	14	19	18	16	20	162

RAM Resources

Annual Report Year : 2020

The total number of enrolled students that were sent the Student Resource Survey

12

The total number of paid program faculty (FT, PT, and Per-Diem), medical director(s) and Advisory Committee members that were sent the Program Resource Survey

14

	Total Surveys Sent	Total Surveys Returned	Return Rate
Student	12	12	100 %
Personnel	14	11	78 %

Resource

Personnel

Purpose

To ensure the program has sufficient number of effective laboratory, classroom, and clinical instructors. (2.06/2.10/2.11/2.13)

Measurement System

- 1) Student resource surveys *
- 2) Personnel resource surveys *
- 3) Other

Date of Measurement

- 1) Jun-15-2020
- 2) Jun-15-2020
- 3)

Results & Analyses

All were 3 or higher

All were 3 or higher

Action Plan & Follow-up

NA

Resource

Facilities

Purpose

To provide adequate classroom, laboratory and accommodations to ensure effective instruction.(2.01)

Measurement System

- 1) Student resource surveys *
- 2) Personnel resource surveys *
- 3) Other

Date of Measurement

- 1) Jun-15-2020
- 2) Jun-15-2020
- 3)

Results & Analyses

All received 3 or higher, except light/ventilation received one 2 rating for classroom

All were 3 or higher

Action Plan & Follow-up

Cold room is a reported problem in the classroom and has been shared with administration.

Resource

Laboratory

Purpose

To provide students with the equipment and exercises that will adequately prepare them for clinical practice.(2.01 / 4.08)

Measurement System

- 1) Student resource surveys *
- 2) Personnel resource surveys *
- 3) Other

Date of Measurement

- 1) Jun-15-2020
- 2) Jun-15-2020
- 3)

Results & Analyses

All received 3 or higher, except light/ventilation received one 2 rating for classroom

All were 3 or higher

Action Plan & Follow-up

Cold room is a reported problem in the classroom and has been shared with administration.

Resource

Academic Support

Purpose

To support student needs for supplemental reading, electronic and print reference materials, and research and computer resources. (2.01/2.15/5.11)

Measurement System

- 1) Student resource surveys *
- 2) Personnel resource surveys *
- 3) Other

Date of Measurement

- 1) Jun-15-2020
- 2) Jun-15-2020
- 3)

Results & Analyses

All were 3 or higher

All were 3 or higher

Action Plan & Follow-up

NA

Resource

Clinical

Purpose

To provide a sufficient variety of tasks and procedures for instruction to allow for student mastery of the program's required clinical competencies.(2.13 / 3.12 / 4.08 / 4.09)

Measurement System

- 1) Student resource surveys *
- 2) Personnel resource surveys *
- 3) Other

Date of Measurement

- 1) Jun-15-2020
- 2) Jun-15-2020
- 3)

Results & Analyses

All were 3 or higher

All were 3 or higher

Action Plan & Follow-up

NA

Resource

Financial

Purpose

To provide adequate fiscal support for the retention of personnel and the acquisition and maintenance of equipment and supplies.(2.01)

Measurement System

- 1) Program Budget Review *
- 2) Personnel resource surveys *
- 3) Other

Date of Measurement

- 1) Jun-15-2020
- 2) Jun-15-2020
- 3)

Results & Analyses

All were 3 or higher

All were 3 or higher

Action Plan & Follow-up

NA

Resource

Program Satellites Only

Purpose

To ensure that resources, services, and faculty at the satellite campus(es) are adequate and equivalent to those on the main campus. (1.05/2.14)

Measurement System

- 1) Student resource surveys *
- 2) Personnel resource surveys
- 3) Other

Date of Measurement

- 1)
- 2)
- 3)

Results & Analyses

NA

NA

Action Plan & Follow-up

NA

Appendix E

BKD Market Analysis: Respiratory Therapy Program Report



Respiratory Therapy Program Report

As of December 1, 2020

Ozarks Technical Community College

BKD
CPAs & Advisors

bkd.com

Table of Contents

Ozarks Technical Community College

Respiratory Therapy Program Report

December 1, 2020

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Report Letter

Mr. Matthew Simpson
Ozarks Technical Community College
Springfield, MO

We have performed the procedures enumerated in Section II Scope and Methodology of this report, which were agreed to by Ozarks Technical Community College (College) pursuant to our engagement letter, dated October 13, 2020, solely to assist you with respect to your analysis of a Respiratory Therapy Program. The management of the College is responsible for any decisions regarding its academic portfolio and should be based on all relevant facts and information available. Had we performed additional procedures, other findings of significance may have been reported to you. The sufficiency of the procedures is solely the responsibility of the parties specified in this report. Consequently, we make no representation regarding the sufficiency of the procedures described in Section II of this report for the purpose for which this report has been requested or for any other purpose.

The findings and observations in connection with the procedures performed, are located in Sections V and VI.

We were not engaged to, and did not, conduct an examination, the objective of which would be the expression of an opinion on the viability of the Respiratory Therapy program. Accordingly, we do not express such an opinion. Our report is intended for use only by management solely for reporting findings with respect to the procedures performed by us. This report is not intended to be, and should not be, used by anyone other than these specified parties.

We wish to take this opportunity to thank the College's management and staff members who contributed positively to our efforts. We would be pleased to further discuss any of the items in this report at your convenience.

BKD, LLP

Fort Wayne, Indiana
December 1, 2020

II. Scope and Methodology

The College engaged BKD to provide a workforce assessment of the Respiratory Therapy program at the bachelor's degree level. The assessment also includes student demand and competitive intensity metrics to create an overall program score and ranking among all available academic programs. Workforce and other demand metrics were based upon defined geographic markets to provide timely and relevant data. The methodology is described through the remainder of this section.

The Respiratory Therapy program (CIP 51.0908), is defined by the US Department of Education's National Center for Education Statistics (NCES) as follows:

A program that prepares individuals, under the supervision of physicians, to assist in developing respiratory care plans, administer respiratory care procedures, supervise personnel and equipment operation, maintain records and consult with other health care team members. Includes instruction in the applied basic biomedical sciences; anatomy, physiology, and pathology of the respiratory system; clinical medicine; therapeutic procedures; clinical expressions; data collection and record-keeping; patient communication; equipment operation and maintenance; personnel supervision; and procedures for special population groups.

This program report is designed to provide supporting data and analysis for making data-informed decisions on academic programs by gathering data on student demand, employment demand and competitive intensity. The database scores a variety of metrics to create an overall program score. Scoring is based on a scoring rubric and weighted strength factor to evaluate academic programs by geographic markets.

Based on the three data categories, the College has weighted the scoring rubric with the following strength factors:

Student Demand	30%
Employment	50%
Competitive Intensity	20%

The scoring rubric uses these strength factors to place emphasis on which category of data is more significant for the institution. The College's strength factors fall within a reasonable range for a community college.

Scoring for the employment segment follows a crosswalk between the program CIP code and the Standard Occupation Code (SOC) used by the Bureau of Labor Statistics (BLS). The CIP to SOC crosswalk matches job posting data and BLS employment and wage data to the academic program. There are two indicators of how closely the CIP is linked with an associated SOC: 1) CIP Share of SOC employees and 2) SOC Share of CIP graduates. The first indicates how important a program is as a contributor of graduates to the occupation. The latter indicates how important the occupation is as a destination for graduates of the program.

II. Scope and Methodology

The Program aligns at the highest level with the 29-1126 SOC Code (figure 1). Based on this relationship, employment data linked to SOC 29-1126 is reviewed for the Program study. Job postings metrics, job growth metrics, wage data and employment outlook are aligned between the CIP and the SOC codes.

Figure 1. CIP to SOC Crosswalk

CIP-SOC Crosswalk

CIP	CIP Title	SOC Code	SOC Title	SOC Share of CIP Graduates	CIP share of SOC employees
51.0908	Respiratory Care Therapy	29-1126	Respiratory Therapists	1-High	1-High
51.0908	Respiratory Care Therapy	29-1199	Health Diagnosing and Treating Practitioners, All Other	3-Low	3-Low

Scoring on each of the data components is aggregated into a single program score and ranked among all available programs within the CIP database. Scores are unique for each market defined by the institution as described in Section III of this report. Additionally, scoring is measured with both the raw data, and the percentile ranking of the weighted scores to provide an overview of the entire academic portfolio.

Recent respiratory therapy job postings in the state of Missouri (as aligned with the CIP-SOC crosswalk) have increased over the past three months from 11 in August to 67 during October. A majority of job postings do not specify educational qualifications, however, the bachelor degree is the preferred qualification followed by the associate degree.

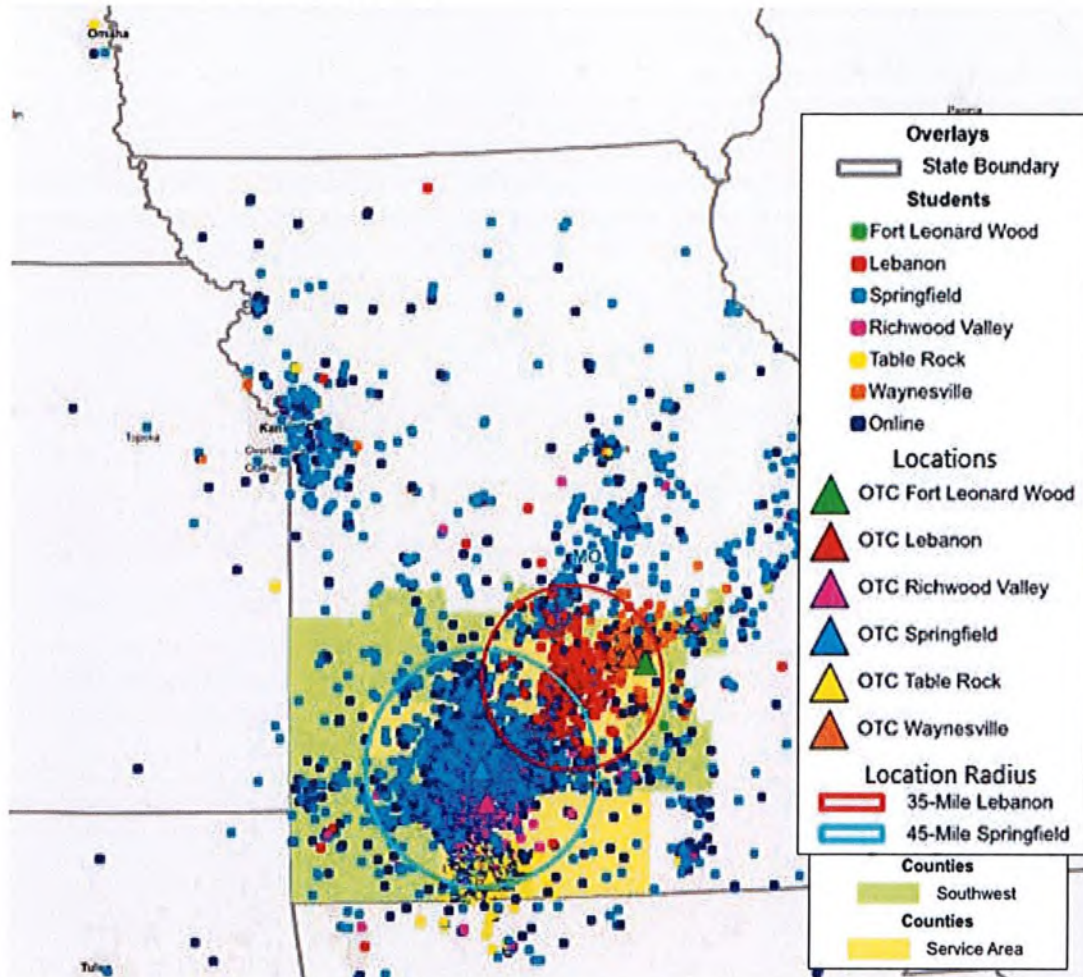
The top skills and abilities required for respiratory therapy jobs according to Skills Engine include: problem sensitivity, deductive reasoning, complex problem solving, critical thinking and a service orientation. Based on these requirements, the top occupational skills fit with the Respiratory Therapy, Registered Nursing and Medical Assistants professions.

Lastly, it is relevant to note that the Respiratory Therapy program has strong workforce demand. Employment demand at the national level, scored in the 94th percentile of all bachelor's degrees. This national trend may help continue a growth in the local Missouri region.

III. Market Definitions

Scoring for each data component is presented based on a geographic market definition. The analysis focuses on two markets defined by management as “Service Area” counties and “Southwest Missouri” counties as illustrated in Figure 2. The yellow area represents the Service Area counties and the green area represents the Southwest Missouri counties.

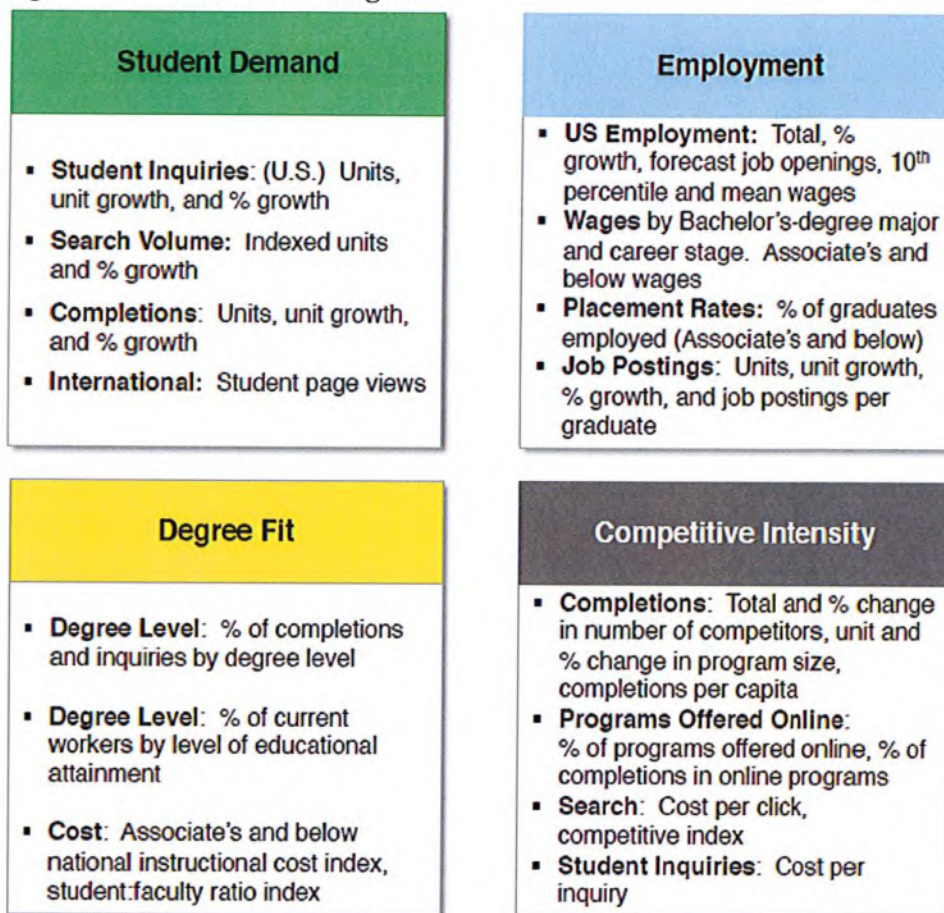
Figure 2. Ozarks Market Definition Map



IV. Data Definitions

The College's program scoring is derived from student demand, employment demand and competitive intensity. Degree fit is also used to validate the proper level of study based on workforce needs and student completion data. Figure 4 provides a brief overview of data sources for each measurement category.

Figure 4 – Measurement Categories



Data on each of these categories was pulled from multiple data sources and compiled into a single scorecard per market. Section V and VI of this report detail the scoring and data by each market definition at the bachelor's level. The program scoring considers student demand, employment demand, and competitive intensity.

Student demand. The Student Demand metrics included in the Program quantify student interest in academic programs by location, degree level, and modality. The study includes several data sources to triangulate on total volume and trends in student demand. The most authoritative and complete source is Integrated Postsecondary Education Data System (IPEDS), which includes data on completions by program for all Title IV institutions. It tracks completion data by program and degree level and indicates how big a program is and whether it has been growing.

IV. Data Definitions

In addition to IPEDS data, the study incorporates a dataset of over 70 million inquiries that includes information on the student's location, degree level sought, program of interest and whether they want to take it online or on-campus. The study also tracks Google search volumes for the largest 200 programs to identify student interest in programs that are not captured by aggregator channels.

The system includes all current data for these metrics, as well as year-over-year changes, so you can see if demand is trending up or down in each category.

Employment. The employment opportunities data in the scorecard quantifies labor market data for all academic programs in a geographic market. The study compiles data from several sources, including a proprietary job postings database, BLS employment and wage data, American Community Survey (ACS) wages and Gainful Employment wages. Data is categorized by current jobs, job growth, and job market saturation. We also analyze future job growth using BLS' estimated compound annual growth rate for employment. Employment wages for those under 30-years of age and between 30 and 60 to track both short and long-term employment outcomes.

Data also incorporates metrics such as Job Postings per Graduate and job posting data by the count of annual job postings. The data is current (to the most recent quarter) and tracks actual postings, rather than survey data.

Competitive intensity. The study includes several sources of data on competitors. The study tracks completions in all markets and average and median program size. Metrics assess market saturation and competitive intensity using data from IPEDS, Google, inquiries and the Census.

The data also tracks national online completions for the program, including the number of institutions nationally that offer the program online and the number of institutions with in-market graduates. The study provides the name, degree level, and number of completions for every competitor for the last five years (including online). Institutional and demographic data is also available, such as sector, tuition rates, selectivity metrics, graduation rates, student body composition and school rankings.

Degree fit. The degree fit data set is used in the scoring as a 'knock-out' score to highlight a mismatch between the degree level and workforce educational attainment. The Program is heavily weighted toward the associate's level with a 55 percent representation of the national workforce educational attainment. The Program has a 27 percent representation at the bachelor's level.

At a national level, the Program is represented by 75 percent of associate degrees and 23% of bachelor degrees.

V. Program Dashboard – Service Area Counties

CIP: 51.0908 Respiratory Care Therapy Market: Service Area Modality: All Award Level: Bachelors Current Programs Export to PNG

79 Percentile 51.0908 Respiratory Care Therapy [2 Score]

Student Demand [6 Score]

Category	Pctil	Criterion	Value	Score
Inquiry	0	Inquiry Volume (12 Months)	0	0
	0	Int'l Page Views (12 Months)	0	NS
	22	Google Search Volume (12 Months)*	92	1
Size	90	On-ground Completions at In-Market Institutions	2	2
	95	Online Completions by In-Market Students	1	3
Growth	90	Sum of On-ground and Online Completions	3	2
	95	Inquiry Volume %Yr Change (Units)	0	0
	3	Google Search %Yr Change (Units)*	-82	-1
Completion	3	Completion Volume %Yr Change (%)	-1	-1
	0	Inquiry Volume %Yr Change (%)	N/A	NS
	22	Google Search %Yr Change %Yr Change (%)	-47%	-1
		Completion Volume %Yr Change (%)	-33%	0

Employment [6 Score]

Category	Pctil	Criterion	Value	Score
Size (Direct Prep)	90	Job Postings Total (12 Months)*	32	4
	88	BLS Current Employment*	354	2
Size (Greenleaf)	87	BLS Annual Job Openings*	29	0
	83	BLS Share of Greenleaf Employment*	9	0
Growth (Direct Prep)	75	BLS 1-Year Historical Growth (C-IDR)*	14%	1
	23	BLS 3-Year Historic Growth (C-IDR)*	7%	-1
Prep (Direct)	97	BLS 10-Year Future Growth (C-IDR)*	2.6%	NS
	43	Job Postings per Graduate*	1.4	-1
Prep (Greenleaf)	39	BLS Job Openings per Graduate*	1.4	-1
	69	BLS 10th-Percentile Wages*	\$38,615	2
Prep (Greenleaf)	59	BLS Mean Wages*	\$49,210	0
	65	HATI ACS Wages (Age < 30)	\$45,432	NS
National	47	HATI ACS Wages (Age 30-49)	\$54,200	NS
	27	HATI ACS % with an Associate Degree	25%	NS
American Community Survey	11	HATI ACS % with Masters	15%	NS
	58	HATI ACS % with Doctoral Degree	10%	NS
Bachelors Outcomes	21	HATI ACS % Unemp. (Age < 30)**	2%	NS
	17	HATI ACS % Unemp. (Age 30-49)**	2%	NS
	61	HATI ACS % in Direct Prep Jobs	5%	NS

National Completions by Level [0 Score]

Award Level	Completions (National)	Completions (Market)	Inquiries (Market)
Certificate	0%	0%	N/A
Associate	75%	87%	N/A
Bachelors	23%	13%	N/A
Postsecondary Certificate	0%	0%	N/A
Masters	1%	0%	N/A
Post-masters Certificate	0%	0%	N/A
Doctoral	0%	0%	N/A
Unknown	0%	0%	N/A

National Workforce Ed. Attainment [0 Score]

Award Level	BLS Educational Attainment
No College	1%
Some College	13%
Associate	55%
Bachelors	27%
Masters	3%
Doctoral	1%

Competitive Intensity [9 Score]

Category	Pctil	Criterion	Value	Score
Campus with Graduates**	95	National Online Institutions (Units)**	25	NS
	96	Institutions with Online In-Market Students**	15	NS
	99	Institutions %Yr Change (Units)**	1	-3
Market	15	Average Completions by Local Institution	2	-2
	24	Median Completions by Local Institution	2	-2
	29	%Yr Median Program Change (Units)	-2	0
Pctil	17	%Yr Median Program Change (%)	-50%	-2
	94	HATI Online % of Institutions	25%	NS
	69	HATI Online % of Completions	25%	NS
Market	0	Average Cost per Hour**	N/A	NS
	4	Google Completion Index**	0.09	1

CIP Description

A program that prepares individuals, under the supervision of physicians, to assist in developing respiratory care plans, administer respiratory care procedures, supervise personnel and equipment operation, maintain records, and consult with other health care team members. Includes instruction in the applied basic biomedical sciences, anatomy, physiology, and pathology of the respiratory system, clinical medicine, therapeutic procedures, clinical expressions, data collection and record-keeping, patient communication, equipment operation and maintenance, personnel supervision, and procedures for special population groups.



* Google search, employment data and jobs per Grad Ratio do not filter by market.
 ** Color scale in reverse.
 N/A - This data variable not currently tracked.
 NS - Not Scored in Report (Values = 0).
 Pctil - Percentile in National Programs Only.
 Pctil - Percentile



V. Program Dashboard – Service Area Counties

The Program places in the top quartile of all programs within the Service Area counties. Student demand and employment demand both place in the top quartile of demand with an 86th and a 77th percentile ranking respectively.

Student demand reported in the 86th percentile of all academic programs. Google search volume over the past three months (August, September and October 2020) was 92 searches with an overall decline from the previous year by 47 percent. Completion volume has declined by 33%. Completion data at the Associate level increased by 23 percent.

Workforce demand scored at the 77th percentile of all academic programs for this market. Job posting and employment metrics are showing growth and score in the top quartile of all programs. The BLS 1-year growth and the 10-year future growth show a 14 and 2 percent annualized growth respectively. While still below the median program ranking, the Program has a 1.4 job posting to graduate metric. Wage data is above the median for those under 30 years of age. Unemployment is shown at 2% placing the program in the lowest quartile for this category.

Direct preparation scores are most relevant for a community college (compared with a four-year liberal arts institution). It is significant to note that job postings and the 10-year BLS outlook are positive along with the one-year historical growth rate.

Direct preparation scores are most relevant for a community college (compared with a four-year liberal arts institution). The data indicates a strong job market and growth capacity for the defined market area. All three of the direct preparation size metrics and two of the three growth metrics score in the top quartile of all programs. Direct saturation (job postings per graduate) and wages indicate a difficult market for recent graduates. However, data indicates future growth for the Program based on other BLS and National ACS data points. For this market, direct preparation scores indicate a strong workforce demand with positive growth.

Competitive intensity scored low with one competitor in the market offering a bachelor's degree – Missouri State University. Over the past five years, Missouri State University has 15 graduates at the bachelor degree level. Missouri Southern State University and Ozarks Technical Community College have produced 178 graduates at the associate degree level.

The Program remains primarily an associate degree level program with 87% of the completions within this market area. The BLS workforce educational attainment, at a national level, indicates 55% of all jobs held by associate degrees and 27% holding bachelor degrees. It is relevant to note that the Respiratory Therapy program has strong workforce demand at the national level. Employment demand at the national level, scored in the 94th percentile of all bachelor's degrees. This national trend may help continue a growth in the local Service Area.

VI. Program Dashboard – Southwest Missouri Counties

CIP: 51.0908 Respiratory Care Therapy Market: Southwest Mis... Modality: All Award Level: Bachelors Current Programs Export to PNG

60 Percentile 51.0908 Respiratory Care Therapy [0 Score]

Student Demand [3 Score]

Category	Pct	Criterion	Value	Score
	0	Inquiry Volume (12 Months)	0	0
	0	Int Page Views (12 Months)	0	NS
Size	22	Google Search Volume (3 Months)	154	1
	80	On-ground Completions at In-Market Institutions	2	1
	95	Online Completions by In-Market Students	2	3
	88	Sum of On-ground and Online Completions	4	1
	94	Inquiry Volume YoY Change (Units)	0	0
	3	Google Search YoY Change (Units)	-137	-1
	4	Completion Volume YoY Change (Units)	-1	-1
Growth	0	Inquiry Volume YoY Change (%)	NA	NS
	0	Google Search YoY Change (%)	-4%	-1
	27	Completion Volume YoY Change (%)	-25%	0

Employment* [4 Score]

Category	Pct	Criterion	Value	Score
	90	Job Postings Total (12 Months)	43	4
Size (Direct Prep)	86	BLS Current Employment*	356	2
	84	BLS Annual Job Openings*	29	0
Size	83	BLS Share of Generalist Employment*	14	0
(Generalist)	83	BLS Share of Generalist Openings*	1	NS
Growth (Direct Prep)	18	BLS 1-Year Historical Growth*	-27%	-1
	16	BLS 3-Year Historic Growth (CAGR*)	-10%	-1
	97	BLS 10-Year Future Growth (CAGR*)	20%	NS
Saturation (Direct Prep)	42	Job Postings per Graduate*	1.0	-1
	34	BLS Job Openings per Graduate*	0.8	-1
Wages (Direct Prep)	68	BLS 10th-Percentile Wages*	\$37,537	2
	53	BLS Mean Wages*	\$50,107	0
	65	NATI ACS Wages (Age < 30)	\$46,432	NS
	47	NATI ACS Wages (Age 30-50)	\$94,280	NS
	27	NATI ACS % with Any Graduate Degree	25%	NS
	11	NATI ACS % with Masters	15%	NS
Bachelors	58	NATI ACS % with Doctoral Degree	10%	NS
Doctors	22	NATI ACS % Unemp. (Age <30)**	2%	NS
Outcomes	17	NATI ACS % Unemp. (Age 30-50)**	2%	NS
	61	NATI ACS % in Direct Prep Jobs	5%	NS

Degree Fit [0 Score]

Category	Pct	Criterion	Value	Score
NHEED NAH 2 Year	99	Cost Index**	2.24	NS
	29	Student Faculty Index	0.81	NS

National Completions by Level [0 Score]

Award Level	Competitions (National)	Competitions (Missouri)	Inquiries (Missouri)
Certificate	0%	0%	N/A
Associate	75%	92%	N/A
Bachelors	23%	8%	N/A
Postdoctoral/entry Certificate	0%	0%	N/A
Masters	1%	0%	N/A
Postmaster Certificate	0%	0%	N/A
Doctoral	0%	0%	N/A
Unknown	0%	0%	N/A

National Workforce Ed. Attainment [0 Score]

Award Level	BLS Educational Attainment
No College*	1%
Some College	13%
Associate	55%
Bachelors	27%
Masters	3%
Doctoral	1%

Competitive Intensity [7 Score]

Category	Pct	Criterion	Value	Score
	94	Campuses with Graduates**	1	0
	96	National Online Institutions (Units)**	25	NS
	96	Institutions with Online In-Market Students**	15	NS
	99	Institutions YoY Change (Units)**	1	-3
	15	Average Completions by Local Institutions	2	-2
Volume of Competition	21	Median Completions by Local Institution	2	-2
	31	YoY Median Program Change (Units)	-2	0
	17	YoY Median Program Change (%)	-60%	-2
	94	NATI Online % of Institutions	25%	NS
	89	NATI Online % of Completions	28%	NS
Market Saturation	0	Average Cost per Inquiry**	NA	NS
	4	Google Search * Cost per Click**	0.06	1
	4	Google Competition Index**	0.06	1

CIP Description

A program that prepares individuals, under the supervision of physicians, to assist in developing respiratory care plans, administer respiratory care procedures, supervise personnel and equipment operation, maintain records, and consult with other health care team members. Includes instruction in the applied basic biomedical sciences; anatomy, physiology, and pathology of the respiratory system; clinical medicine; therapeutic procedures; clinical exposures; data collection and record-keeping; patient communication; equipment operation and maintenance; personal supervision and procedures for special population groups.



* Google search, employment data and Job Per Grad Data do not filter by award level.
** Color scale in reverse.
NA - No data available currently tracked.
NS - Not Scored in actual values = 0.
N/A - Not Scored in actual values = 0.
PCT - Percentage
* - Average



VI. Program Dashboard – Southwest Missouri Counties

The Program places in the third quartile of all programs within the Southwest Missouri counties with an overall 60th percentile ranking. Student demand remains relatively strong with an 81st percentile ranking and employment demand scored softer at the 70th percentile.

Student demand reported in the 81st percentile of all academic programs. Google search volume over the past three months (August, September and October 2020) was 154 searches with an overall decline from the previous year by 47%. Completion volume has declined by 25%. However, completion volume increased at the associate degree level by 20 percent.

Workforce demand scored at the 70th percentile of all academic programs for this market. Job postings show positive signs with a 90th percentile score with 43 job postings over the past 12 months. Current employment and annual job openings, according to BLS, both scored in the 86th and 84th percentile. Direct saturation (job postings per graduate) and wages indicate a difficult market for recent graduates. However, data indicates future growth for the Program based on other BLS and National ACS data points. Short term growth measurements did not score well and job posting per graduate is under the median.

Direct preparation data is a key component for the Program. These scores reflect a strong job market for the area for both current employment and job openings. However, this market definition shows a weaker 1 and 3-year annualized growth rate. The long-term projection is positive and scores in the 97th percentile of all programs. The direct preparation scores indicate a strong workforce demand with softer short-term growth.

Competitive intensity scored low with one competitor in the market offering a bachelor's degree – Missouri State University. Over the past five years, Missouri State University has 15 graduates at the bachelor degree level. Missouri Southern State University and Ozarks Technical Community College have produced 178 graduates at the associate degree level.

The Program remains primarily an associate degree level program with 87% of the completions within this market area. The BLS workforce educational attainment, at a national level, indicates 55% of all jobs held by associate degrees and 27% holding bachelor degrees. It is relevant to note that the Respiratory Therapy program has strong workforce demand at the national level. Employment demand at the national level, scored in the 94th percentile of all bachelor's degrees. This national trend may help continue a growth in the local Southwest Missouri region.

Appendix F

**Proposed BS in Respiratory Therapy Alignment
with NBRC Matrix**

<p align="center">NBRC Therapist Combined Detailed Content Outline Comparison with Proposed Curriculum (Program # _____)</p>	<p align="center">List Course Number(s)</p>
I. PATIENT DATA	
A. Evaluate Data in the Patient Record	
1. Patient history , for example, <ul style="list-style-type: none"> • history of present illness (HPI) • orders • medication reconciliation • progress notes • DNR status / advance directives • social, family, and medical history 	Pharmacology Pulmonary Disease
2. Physical examination relative to the cardiopulmonary system	Pharmacology Pulmonary Disease
3. Lines, drains, and airways, for example, <ul style="list-style-type: none"> • chest tube • artificial airway •vascular lines 	Critical Care Concepts
4. Laboratory results, for example, <ul style="list-style-type: none"> • CBC • electrolytes • coagulation studies • sputum culture and sensitivities • cardiac biomarkers 	Diagnostic II Pulmonary Disease
5. Blood gas analysis and/or hemoximetry (CO-oximetry) results	Diagnostic I
6. Pulmonary function testing results, for example <ul style="list-style-type: none"> • spirometry •lung volumes •DLCO 	Diagnostic II
7. 6-minute walk test results	Pulmonary Disease
8. Imaging study results, for example, <ul style="list-style-type: none"> • chest radiograph • CT scan • ultrasonography and/or echocardiography • PET scan • ventilation / perfusion scan 	Diagnostic II Pulmonary Disease
9. Maternal and perinatal / neonatal history, for example, <ul style="list-style-type: none"> • APGAR scores • gestational age • L / S ratio 	Neo/Peds
10. Sleep study results. for example, <ul style="list-style-type: none"> • apnea-hypopnea index (AHI) 	Pulmonary Disease
11. Trends in monitoring results	
a. fluid balance	Pulmonary Disease Critical Care Concep
b. vital signs	Pharmacology Pulmonary Disease
c. intracranial pressure	Mechanical Vent.
d. ventilator liberation parameters	Mechanical Vent.
e. pulmonary mechanics	Diagnostic II Pulmonary Disease
f. <u>noninvasive</u> , for example, <ul style="list-style-type: none"> • pulse oximetry • capnography • transcutaneous 	Mechanical Vent. Critical Care Concep

<p style="text-align: center;">NBRC Therapist Combined Detailed Content Outline Comparison with Proposed Curriculum (Program # ____)</p>	<p style="text-align: center;">List Course Number(s)</p>
<p>g. cardiac evaluation/monitoring results, for •ECG •hemodynamic parameters</p>	<p>Diagnostic II Critical Care Concep.</p>
<p>12. Determination of patient's pathophysiological state</p>	
<p>B. Perform Clinical Assessment</p>	
<p>1. Interviewing a patient to assess</p>	
<p>a. level of consciousness and orientation, emotional state, and ability to cooperate</p>	<p>Pharmacology Pulmonary Disease</p>
<p>b. level of pain</p>	<p>Pharmacology Pulmonary Disease</p>
<p>c. shortness of breath, sputum production, and exercise tolerance</p>	<p>Pharmacology Pulmonary Disease</p>
<p>d. smoking history</p>	<p>Pharmacology Pulmonary Disease</p>
<p>e. environmental exposures</p>	<p>Pulmonary Disease</p>
<p>f. activities of daily living</p>	<p>Pulmonary Disease</p>
<p>g. learning needs, for example, • literacy • social/culture • preferred learning style</p>	<p>Comm &Pt Education</p>
<p>2. Performing inspection to assess</p>	
<p>a. general appearance</p>	<p>Pharmacology Pulmonary Disease</p>
<p>b. characteristics of the airway, for example, • patency • Mallampati classification • tracheal shift</p>	<p>Critical Care Concepts</p>
<p>c. cough, sputum amount and character</p>	<p>Pharmacology Pulmonary Disease</p>
<p>d. status of a neonate, for example • Apgar score • gestational age</p>	<p>Neo/Peds</p>
<p>e. skin integrity, for example, • pressure ulcers • stoma site</p>	<p>Critical Care Concepts</p>
<p>3. Palpating to assess</p>	
<p>a. pulse, rhythm, intensity</p>	<p>Pharmacology Pulmonary Disease</p>
<p>b. accessory muscle activity</p>	<p>Pharmacology Pulmonary Disease</p>

NBRC Therapist Combined Detailed Content Outline Comparison with Proposed Curriculum (Program # ____)	List Course Number(s)
c. asymmetrical chest movements, tactile fremitus, crepitus, tenderness, tactile rhonchi, and/or tracheal deviation	Diagnostic II Pulmonary Disease
4. Performing diagnostic chest percussion	Diagnostic II Pulmonary Disease
5. Auscultating to assess	
a. breath sounds	Pharmacology Pulmonary Disease
b. heart sounds and rhythm	Pharmacology Pulmonary Disease
c. blood pressure	Pharmacology Pulmonary Disease
6. Reviewing a chest radiograph to assess	
a. quality of imaging, for example, • patient positioning • penetration • lung inflation	Diagnostic II Pulmonary Disease
b. presence and position of airways, lines, and drains	Diagnostic II Pulmonary Disease
c. presence of foreign bodies	Diagnostic II Pulmonary Disease
d. heart size and position	Diagnostic II Pulmonary Disease
e. presence of, or change in,	
(i) cardiopulmonary abnormalities for example, • pneumothorax • pleural effusion • pulmonary edema • consolidation • pulmonary artery size	Diagnostic II Pulmonary Disease
(ii) diaphragm, mediastinum, and/or trachea	Diagnostic II Pulmonary Disease
C. Perform Procedures to Gather Clinical Information	
1. 12-lead ECG	Diagnostic II Critical Care Concep.
2. Noninvasive monitoring, for example, • pulse oximetry • capnography • transcutaneous	Mechanical Vent.
3. Peak flow	Pharmacology Pulmonary Disease
4. Mechanics of spontaneous ventilation linked to tidal volume, minute volume, and maximal inspiratory pressure, and vital capacity	Mechanical Vent.
5. Blood gas sample collection	Diagnostic I

NBRC Therapist Combined Detailed Content Outline Comparison with Proposed Curriculum (Program # _____)	List Course Number(s)
6. Blood gas analysis and/or hemoximetry (CO-oximetry)	Diagnostic I
7. Oxygen titration with exercise	Diagnostic I
8. Cardiopulmonary calculations, for example, • P(A-a)O ₂ • V _D / V _T • P / F • OI	Diagnostic II Mechanical Vent.
9. Hemodynamic monitoring	Critical Care Concepts
10. Pulmonary compliance and airways resistance	Mechanical Vent.
11. Plateau pressure	Mechanical Vent.
12. Auto-PEEP determination	Mechanical Vent.
13. Spontaneous breathing trial (SBT)	Mechanical Vent.
14. Apnea monitoring	Mechanical Vent.
15. Apnea test (brain death determination)	Critical Care Concepts
16. Overnight pulse oximetry	Pulmonary Disease
17. CPAP / NPPV titration during sleep	Pulmonary Disease
18. Cuff management, for example, •tracheal •laryngeal	Mechanical Vent.
19. Sputum induction	Pharmacology Pulmonary Disease
20. Cardiopulmonary stress testing	Critical Care Concepts
21. 6-minute walk test	Pulmonary Disease
22. Spirometry outside or inside a pulmonary function laboratory	Diagnostic II
23. DLCO inside a pulmonary function laboratory	Diagnostic II
24. Lung volumes inside a pulmonary function laboratory	Diagnostic II
25. Tests of respiratory muscle strength- MIP and MEP	Mechanical Vent.
26. Therapeutic bronchoscopy	Critical Care Concepts

NBRC Therapist Combined Detailed Content Outline Comparison with Proposed Curriculum (Program # _____)	List Course Number(s)
D. Evaluate Procedure Results	
1. 12-lead ECG	Diagnostic II
2. Noninvasive monitoring, for example, <ul style="list-style-type: none"> • pulse oximetry • capnography • transcutaneous 	Mechanical Vent.
3. Peak flow	Pharmacology Pulmonary Disease
4. Mechanics of spontaneous ventilation linked to tidal volume, minute volume, maximal inspiratory pressure, and vital capacity	Mechanical Vent.
5. Blood gas analysis and/or hemoximetry (CO-oximetry)	Diagnostic I
6. Oxygen titration with exercise	Diagnostic I
7. Cardiopulmonary calculations, for example, <ul style="list-style-type: none"> • P(A-a)O₂ • V_D / V_T • P / F • OI 	Diagnostic I Mechanical Vent
8. Hemodynamic monitoring	Critical Care Concepts
9. Pulmonary compliance and airways resistance	Mechanical Vent.
10. Plateau pressure	Mechanical Vent.
11. Auto-PEEP	Mechanical Vent.
12. Spontaneous breathing trial (SBT)	Mechanical Vent.
13. Apnea monitoring	Mechanical Vent.
14. Apnea test (brain death determination)	Mechanical Vent.
15. Overnight pulse oximetry	Pulmonary Disease
16. CPAP / NPPV titration during sleep	Pulmonary Disease
17. Cuff status, for example, <ul style="list-style-type: none"> • laryngeal • tracheal 	Mechanical Vent.
18. Cardiopulmonary stress testing	Critical Care Concepts
19. 6-minute walk stress testing	Critical Care Concepts
20. Spirometry outside or inside a pulmonary function laboratory	Diagnostic II

<p align="center">NBRC Therapist Combined Detailed Content Outline Comparison with Proposed Curriculum (Program # _____)</p>	<p align="center">List Course Number(s)</p>
22. DLCO inside a pulmonary function laboratory	Diagnostic II
23. Tests of respiratory muscle strength-MIP and MEP	Mechanical Vent.
<p>E. Recommend Diagnostic Procedures</p>	
1. Testing for tuberculosis	Pulmonary Disease
2. Laboratory tests, for example, • electrolytes • CBC • coagulation studies • sputum culture and sensitives • cardiac biomarkers	Diagnostic II Pulmonary Disease
3. Imaging studies	Diagnostic II Pulmonary Disease
4. Bronchoscopy	Diagnostic II Pulmonary Disease
a. diagnostic	
b. therapeutic	
5. Bronchoalveolar lavage (BAL)	Critical Care Concepts
6. Pulmonary function testing	Diagnostic II Pulmonary Disease
7. Noninvasive monitoring, for example, • pulse oximetry • capnography • transcutaneous	Pharmacology Pulmonary Disease Mechanical Vent
8. Blood gas and/or hemoximetry (CO-oximetry)	Diagnostic I Mechanical Vent
9. ECG	Diagnostic II
10. Exhaled gas analysis, for example, • CO ₂ • CO • FENO	Diagnostic II Pulmonary Disease
11. Hemodynamic monitoring	Critical Care Concepts
12. Sleep studies	Pulmonary Disease
13. Thoracentesis	Critical Care Concepts
<p align="center">II. TROUBLESHOOTING AND QUALITY CONTROL OF DEVICES, AND INFECTION CONTROL</p>	
<p>A. Assemble and Troubleshoot Equipment</p>	
1. Medical gas delivery interfaces, for example, • mask • cannula • heated high-flow nasal cannula	Equipment

<p style="text-align: center;">NBRC Therapist Combined Detailed Content Outline Comparison with Proposed Curriculum (Program # ____)</p>	<p style="text-align: center;">List Course Number(s)</p>
2. Long-term oxygen therapy	Equipment
3. Medical gas delivery, metering, and/or clinical analyzing devices, for example, •concentrator •liquid system •flowmeter •regulator •gas cylinder •blender •air compressor •gas analyzers	Equipment
4. CPAP/NPPV with patient interfaces	Equipment Mechanical Vent
5. Humidifiers	Equipment Mechanical Vent
6. Nebulizers	Equipment Pharmacology
7. Metered-dose inhalers, spacers, and valved holding chambers	Equipment Pharmacology
8. Dry powder inhalers (DPI)	Equipment Pharmacology
9. Resuscitation equipment, for example, •self-inflating resuscitator •flow-inflating resuscitator •AED	Equipment
10. Mechanical ventilators	Mechanical Vent.
11. Intubation equipment	Mechanical Vent.
10. Artificial airways	Equipment Mechanical Vent
12. Suctioning equipment, for example, • regulator • canister • tubing • catheter	Equipment Mechanical Vent
14. Blood analyzer. for example, • hemoximetry (CO-oximetry) • point-of-care • blood gas	Diagnostic I
15. Patient breathing circuits	Mechanical Vent.
16. Hyperinflation devices	Equipment
17. Secretion clearance devices	Equipment
18. Heliox delivery device	Equipment
19. Portable spirometer	Diagnostic II Pulmonary Disease
20. Testing equipment in a pulmonary function laboratory	Diagnostic II
21. Pleural drainage	Critical Care Concepts

<p align="center">NBRC Therapist Combined Detailed Content Outline Comparison with Proposed Curriculum (Program # _____)</p>	<p align="center">List Course Number(s)</p>
22.. Noninvasive monitoring, for example, <ul style="list-style-type: none"> • pulse oximeter • capnometer • transcutaneous 	Equipment Mechanical Vent
23. Bronchoscopes and light sources	Critical Care Concepts
24. Hemodynamic monitoring devices	
a. pressure transducers	Critical Care Concepts
b. catheters, for example, <ul style="list-style-type: none"> • arterial • pulmonary artery 	Critical Care Concepts
B. Ensure Infection Prevention	
1. Adhering to infection prevention policies and procedures, for example, <ul style="list-style-type: none"> • Standard Precautions • isolation • donning/doffing 	Equipment
2. Adhering to disinfection policies and procedures	Equipment
3. Proper handling of biohazardous materials	Equipment
C. Perform Quality Control Procedures	
1. Blood analyzers	Diagnostic I
2. Gas analyzers	Equipment
3. Pulmonary function equipment for testing	Diagnostic II
a. spirometry results	
b. lung volumes	
c. diffusing capacity (DLCO)	
4. Mechanical ventilators	Mechanical Vent.
5. Noninvasive monitors	Equipment
III. INITIATION AND MODIFICATION OF INTERVENTIONS	
A. Maintain a Patient Airway Including the Care of Artificial Airways	
1. Proper positioning of a patient	Mechanical Vent. Critical Care Concep.

NBRC Therapist Combined Detailed Content Outline Comparison with Proposed Curriculum (Program # ____)	List Course Number(s)
2. Recognition of a difficult airway	Mechanical Vent. Critical Care Concep.
3. Establishing and managing a patient's airway	
a. nasopharyngeal airway	Mechanical Vent. Critical Care Concep.
b. oropharyngeal airway	Mechanical Vent. Critical Care Concep.
c. esophagealtracheal tubes / supraglottic airways	Mechanical Vent. Critical Care Concep.
d. endotracheal tube	Mechanical Vent. Critical Care Concep.
e. tracheostomy tube	Mechanical Vent. Critical Care Concep.
f. laryngectomy tube	Mechanical Vent. Critical Care Concep.
g. speaking valves	Mechanical Vent. Critical Care Concep.
h. devices that assist with intubation, for example, • endotracheal tube exchanger • video laryngoscopy	Mechanical Vent. Critical Care Concep.
4. Performing tracheostomy care	Critical Care Concepts
5. Exchanging artificial airways	Critical Care Concepts
6. Maintaining adequate humidification	Mechanical Vent.
7. Initiating protocols to prevent ventilator-associated infections	Mechanical Vent.
8. Performing extubation	Mechanical Vent.
B. Perform Airway Clearance and Lung Expansion Techniques	
1. Postural drainage, percussion, or vibration	Clinical
2. Suctioning, for example, • nasotracheal • oropharyngeal	Clinical
3. Mechanical devices, for example, • high-frequency chest wall oscillation • vibratory PEP • intrapulmonary percussive ventilation • insufflation / exsufflation	Clinical
4. Assisted cough, for example, • huff • abdominal thrust	Clinical

<p style="text-align: center;">NBRC Therapist Combined Detailed Content Outline Comparison with Proposed Curriculum (Program # _____)</p>	<p style="text-align: center;">List Course Number(s)</p>
5. Hyperinflation therapy	Clinical
6. Inspiratory muscle training	Clinical
<p>C. Support Oxygenation and Ventilation</p>	
1. Initiating and adjusting oxygen therapy	Pharmacology Pulmonary Disease Mechanical Vent
2. Minimizing hypoxemia, for example, • patient positioning • secretion removal	Pharmacology Pulmonary Disease Mechanical Vent
3. Initiating and adjusting mask or nasal CPAP	Mechanical Vent.
4. Initiating and adjusting mechanical ventilation settings	
a. continuous mechanical ventilation	Mechanical Vent.
b. noninvasive ventilation	Mechanical Vent.
c. high-frequency ventilation	Mechanical Vent. Neo/Peds
d. alarms	Mechanical Vent.
5. Recognizing and correcting patient-ventilator dyssynchrony	Mechanical Vent. Critical Care Concep.
6. Utilizing ventilator graphics	Mechanical Vent. Critical Care Concep.
7. Performing lung recruitment maneuvers	Mechanical Vent. Critical Care Concep.
8. Liberating patient from mechanical ventilation	Mechanical Vent. Critical Care Concep.
<p>D. Administer Medications and Specialty Gases</p>	
1. Aerosolized preparations	
a. antimicrobials	Pharmacology Pulmonary Disease
b. pulmonary vasodilators	Pharmacology Pulmonary Disease
c. bronchodilators	Pharmacology Pulmonary Disease
d. mucolytics/proteolytics	Pharmacology Pulmonary Disease

NBRC Therapist Combined Detailed Content Outline Comparison with Proposed Curriculum (Program # _____)	List Course Number(s)
e. steroids	Pharmacology Pulmonary Disease
2.. Endotracheal instillation	Pharmacology Pulmonary Disease Mechanical Vent
3. Specialty gases, for example, • heliox • inhaled NO	Pharmacology Mechanical Vent Critical Care Concepts
E. Ensure Modifications are Made to the Respiratory Care Plan	
h. Treatment termination, for example, • life-threatening adverse event	Pharmacology Pulmonary Disease
2. Recommendations	
a. starting treatment based on patient response	Pharmacology Pulmonary Disease
b. treatment of pneumothorax	Pulmonary Disease
c. adjustment of fluid balance	Pulmonary Disease Critical Care Concep
d. adjustment of electrolyte therapy	Diagnostic II Critical Care Concep.
e. insertion or change of artificial airway	Mechanical Vent. Critical Care Concep.
f. liberating from mechanical ventilation	Mechanical Vent.
g. extubation	Mechanical Vent.
h. discontinuing treatment based on patient response	Pharmacology Pulmonary Disease
i. consultation from a physician specialist	Pharmacology Pulmonary Disease
3. Recommendations for changes	
a. patient position	Pulmonary Disease Critical Care Concep Mechanical Vent
b. oxygen therapy	Pulmonary Disease Critical Care Concep Mechanical Vent
c. humidification	Mechanical Vent.
d. airway clearance	Mechanical Vent Pulmonary Disease
e. hyperinflation	Equipment Pulmonary Disease

NBRC Therapist Combined Detailed Content Outline Comparison with Proposed Curriculum (Program # ____)	List Course Number(s)
f. mechanical ventilation	Diagnostic I Mechanical Vent
4. Recommendations for pharmacologic interventions	
a. bronchodilators	Pharmacology Pulmonary Disease
b. anti-inflammatory drugs	Pharmacology Pulmonary Disease
c. mucolytics and proteolytics	Pharmacology Pulmonary Disease
d. Aerosolized antibiotics	Pharmacology Pulmonary Disease
e. Inhaled pulmonary vasodilators	Pharmacology Pulmonary Disease
f. cardiovascular	Pharmacology Pulmonary Disease
g. antimicrobials	Pharmacology Pulmonary Disease
h. sedatives and hypnotics	Pharmacology Pulmonary Disease Mechanical Vent
i. analgesics	Pharmacology Pulmonary Disease Mechanical Vent
i. narcotic antagonists	Pharmacology Pulmonary Disease Mechanical Vent
j. benzodiazepine antagonists	Pharmacology Pulmonary Disease Mechanical Vent
l. neuromuscular blocking agents	Pharmacology Pulmonary Disease Mechanical Vent
m. diuretics	Pharmacology Pulmonary Disease Mechanical Vent
n. surfactants	Pharmacology Neo/Peds
o. changes to drug, dosage, administration, frequency, mode, or concentration	Pharmacology Pulmonary Disease Mechanical Vent
F. Utilize Evidence-Based Practice	
1. Classification of disease severity	Diagnostic II Pulmonary Disease
2. Recommendations for changes in a therapeutic plan when indicated	Mechanical Vent, Pulmonary Disease Critical Care Concepts, Neo/Peds
3. Application of guidelines, for example, • ARDSNet • NAEPP • GOLD	Mechanical Vent, Pulmonary Disease Critical Care Concepts, Neo/Peds
G. Provide Respiratory Care in High-Risk Situations	

NBRC Therapist Combined Detailed Content Outline Comparison with Proposed Curriculum (Program # ____)	List Course Number(s)
1. Emergency	
a. cardiopulmonary emergencies, excluding CPR	Clinical Critical Care Concepts
b. disaster management	Clinical Leadership/Mgt
c. medical emergency team (MET) / rapid response team	Clinical
2. Interprofessional communication	
3. Patient transport	
a. land / air between hospitals	Critical Care Concepts, Neo/Peds
b. within a hospital	Critical Care Concepts, Neo/Peds
H. Assist a Physician / Provider in Performing Procedures	
1. Intubation	Clinical Mechanical Ventilation
2. Bronchoscopy	Clinical
3. Specialized bronchoscopy, for example, <ul style="list-style-type: none"> •endobronchial ultrasound (EBUS) •navigational bronchoscopy (ENB) 	Clinical
4. Thoracentesis	Clinical Critical Care Concepts
5. Tracheostomy	Clinical Critical Care Concepts
6. Chest tube insertion	Clinical Critical Care Concepts
7. Insertion of arterial or venous catheters	Clinical
8. Moderate (conscious) sedation	Clinical
9. Cardioversion	Clinical Critical Care Concepts
10. Withdrawal of life support	Clinical Mechanical Ventilation
I. Conduct Patient and Family Education	
1. Safety and infection control	Clinical Comm and Pt Education

<p align="center">NBRC Therapist Combined Detailed Content Outline Comparison with Proposed Curriculum (Program # _____)</p>	<p align="center">List Course Number(s)</p>
<p>2. Home care and related equipment</p>	<p>Clinical Comm and Pt Education</p>
<p>3. Lifestyle changes, for example, •smoking cessation •exercise</p>	<p>Clinical Comm and Pt Education</p>
<p>4. Pulmonary rehabilitation</p>	<p>Clinical Comm and Pt Education</p>
<p>5. Disease/ condition management, for example, •asthma •COPD •CF •tracheostomy care •ventilator dependent</p>	<p>Clinical Comm and Pt Education</p>