Proposed Program:

Bachelor of Science Degree – Respiratory Care

Phase II Proposal

Submitted by:

St. Louis Community College

November 2020

Executive Summary

St. Louis Community College seeks approval to offer the baccalaureate of science degree in respiratory care. We have the personnel, facilities, equipment, and experience to offer this premium program. This statement is supported in the following language taken from the letter of support offered by our four-year transfer partners (Appendix A):

> "OTC and STLCC provide evidence of their ability to provide high quality education and training in respiratory care [...] OTC and STLCC have made a convincing case, and we believe they meet the statutory criteria" (pg. 2).

The St. Louis, MO-Illinois metropolitan statistical area (MSA) needs more respiratory therapists. The demand for respiratory therapists is expected to increase each year for the region in the next seven years (Appendix C). The recent coronavirus pandemic has highlighted the crucial role these professionals play in the health of the St. Louis Metropolitan area. An external market analysis, along with engagement from our local employers, supports the need for more respiratory therapists.

Furthermore, accreditation standards for respiratory care education programs, as established by the Commission on Accreditation for Respiratory Care (CoARC), have changed. Beginning July 1, 2018, community colleges who seek to establish <u>new</u> or expand <u>existing</u> respiratory therapy programs at another location must now offer baccalaureate degrees. As a result, community colleges are unable to adequately respond to Missouri's hospitals and health systems experiencing a serious shortage of qualified respiratory therapists.

In addition, the American Association of Respiratory Care has established a goal of the baccalaureate degree being the entry requirement to the respiratory care profession by 2030.

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 care profession present the exact set of conditions that exemplify why this legislation was passed. Community colleges have been long-trusted partners in developing the state's workforce by offering high-quality, affordable educational opportunities. In 2019, community colleges served 37% of Missouri's college students.

St. Louis Community College is an integral part of the talent pipeline providing affordable educational opportunities. These opportunities are aligned with the workforce needs of the local region.

Rationale for the Proposal

<u>State of Respiratory Therapy Education in the United States</u>

Across the nation today, the respiratory education model is in a state of transition. Respiratory 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 levels. 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 on July 1, 2018:

> 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]

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[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-therafter.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-Reguirements-1-28-16-rev-12-1-17.pdf

While the CoARC states that <u>existing</u> associate degree programs will be supported and may remain accredited, it will no longer offer accreditation to any newly established associate degree program. In addition, any expansion of an existing program is considered a new program and must graduate students with bachelor's degrees. Given this restriction, community colleges in Missouri cannot establish new or expand existing programs in another location, even within their service areas.

<u>Respiratory Therapy Education in Missouri</u>
The table below lists Missouri institutions with respiratory therapy education programs, the degree offered, and the CoARC accreditation status:

Institution	Degree	CoARC accredited
Cape Girardeau Career and Technical Center	AS	Yes
University of Missouri-Columbia	BS - entry to practice	Yes
St. Louis College of Health Careers	AAS	Yes
St. Louis College of Health Careers	BS - degree advancement	Yes
Missouri Southern State University	AS	Yes
Concorde Career College	AS	Yes
Ozarks Technical Community College	AAS	Yes
St. Louis Community College - Forest Park	AAS	Yes
University of Missouri at Mercy Hospital	BS - Satellite	Yes
Missouri Southern State University	BS - degree advancement	No
Missouri State University	BS - degree advancement	No

<u>Legislation Regarding Missouri Community Colleges Offering Bachelor's Degrees</u>
In 2018, Missouri passed legislation 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, St. Louis Community College seeks to offer baccalaureate degrees in respiratory care. This condition meets the letter of Senate Bill 807.

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

Phase II Proposal

St. Louis Community College seeks to offer a Bachelor of Science in Respiratory Care. If approved, STLCC will open this new program in Respiratory Care at the Florissant Valley campus. This new program will serve 15 new students each year.

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

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

St. Louis Community College was strategic in our approach to collaboration opportunities. The University of Missouri System (UM) offers the only accredited entry to practice bachelor's level program in respiratory therapy in the state. With Mizzou having a satellite location in St. Louis and UMSL being STLCC's largest transfer partner, it made sense to determine if a collaboration was feasible within the UM system. No other institution in our area would have the mission, faculty, equipment, or accreditation necessary to make this collaboration worthwhile.

After discussion about the opportunities for collaboration with Dr. Steve Graham (Sr. Assoc. VP for Academic Affairs, UM), it was determined that a collaboration was not feasible. See the attached letter from Steve Graham (Appendix B).

B. Alignment with Blueprint for Higher Education goals.

Alignment with the *Blueprint for Higher Education* was satisfactorily addressed in the phase one proposal, and this information is largely repeated here for ease of reference.

Missouri's community colleges have been crucial partners in Missouri's Big Goal that 60 percent of adults have a two- or four-year degree or certificate by 2025. In 2019, community college enrollments accounted for 37% of Missouri's college students.[4] The goals of the *Blueprint for Higher Education* align with the elements of this proposal.

Attainment
St. Louis Community College wishes to expand their capacity to train more respiratory therapists and serve the areas of the state where these professionals are needed most. However, without approval to offer respiratory therapy degrees at the baccalaureate level, this increased capacity will not be achieved. We anticipate providing a minimum of an additional 15

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[4] "Trends in Headcount Enrollment, Fall 2014-2019: Public Institutions." Missouri Department of Higher Education and Workforce Development. https://dhewd.mo.gov/data/documents/Fall2019enrollmentreport_fin.xlsx

seats annually once approved to offer a bachelor's degree in this discipline. This moves Missouri closer to its goal and fills an important workforce need.

Affordability

St. Louis Community College will offer the Bachelor of Science in Respiratory Care at regular per-credit-hour tuition rates. These rates are currently $116.50/credit hour for in-district students and $165.50/credit hour for other students in the state. These are among the lowest credit hour costs in the state. According to the Missouri Comprehensive Fee Survey for Public Institutions of Higher Education (FY 2020), Missouri's community colleges consistently offer affordable educational opportunities to students. The average total tuition and required fees charged to a typical full-time, in-district student is $3,985 per year. The average annual total tuition and required fees charged to a typical full-time, resident student at a four-year, public institution in Missouri is more than double that at $8,653 per year. Community colleges can become the linchpin in filling the skills gap for respiratory therapists across the state in the most cost-effective manner.

Quality

St. Louis Community College is a strong driver of the local economy. The college has a consistent track record offering high-quality education and training opportunities to produce a qualified and highly skilled workforce. According to Emsi (2019), "St. Louis Community College has an annual impact of $2.5 billion on the St. Louis economy by supporting 32,371 jobs.[5]

The existing respiratory care program at STLCC is no exception. STLCC's respiratory care program is long-standing and was started in 1967 with a move to the Forest Park campus in 1973 from St. Mary's Hospital. It was the fiftieth entry to practice program that offered a degree in respiratory therapy in the United States. The respiratory care program at St. Louis Community College continues its legacy of excellence and has recently met the standards required to achieve the CoARC Distinguished RRT Credentialing Success Award. Below is data from the 2019 and 2020 *Report on Current Status* as evidence of program quality:

St. Louis Community College

	Retention	Job Placement	RRT Credentialing	TMC High Cut Score Pass Rate	Employer Satisfaction	Graduate Satisfaction
2019	85%	83%	87%	91%	100%	100%
2020	83%	84%	92%	96%	100%	100%

(These data reflect a rolling three-year average)

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[5] "The Economic Value of St. Louis Community College: Executive Summary." Emsi. 1 Sept. 2019. https://docs.stlcc.edu/docs/Documents/Divisions-Departments/Cosand%20Center/VC%20Education/Research%20and%20Planning/STLCC2017-18ExecutiveSummary.pdf

The CoARC Entry-to-Practice Accreditation Standards state the following in regard to the qualifications of faculty in a bachelor's or master's respiratory care program:[6]

> **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).

St. Louis Community College employs two full-time faculty in the Respiratory Care program.

Lindsay Fox, MEd, RRT, RRT-ACCS, RRT-NPS, serves as the program director. Mrs. Fox's credentials include the following:
- Master's in Education, University of Missouri – Columbia
- Bachelor's of Health Science in Respiratory Therapy, University of Missouri – Columbia

Blake Anyan, BHS, RRT, RRT-ACCS, serves as the Director of Clinical Education. Mr. Anyan is currently enrolled at Missouri Southern State University, seeking a Master's degree in Curriculum and Instruction. His graduation date is August 2021. Mr. Anyan's credentials include:
- Bachelor's of Health Science in Respiratory Therapy, Missouri Southern State University
- Associate's of Applied Science in Respiratory Therapy, St. Louis Community College

St. Louis Community College employs two adjunct instructors: Dr. Kurtis Sobush, the medical director of the program who is a pediatric pulmonologist, and Mrs. Danielle Gutierrez, BHS, RRT. Mrs. Gutierrez is currently enrolled at Saint Louis University, seeking a Master's of Science in Nursing.

> **Standards 2.03/2.09**: The PD and DCE must:
> 1. hold a valid Registered Respiratory Therapist (RRT) credential and current state license;
> 2. have a minimum of four (4) years' experience as a Registered Respiratory Therapist with at least two (2) years in clinical respiratory care;
> 3. 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;
> 4. complete the CoARC key personnel training program

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[6] "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

St. Louis Community College's respiratory care program faculty will meet or exceed the required levels of experience to teach at the baccalaureate level by Fall 2021:

Lindsay Fox holds the Registered Respiratory Therapist (RRT) credential, as well as advanced credentials for neonatal/pediatric specialists (NPS) and adult critical care specialist (ACCS). She has six years working as a respiratory therapist and clinical educator at the bedside in neonatal, pediatric, and adult critical care units. She has taught full-time for thirteen years at two universities and two community colleges. She has been with St. Louis Community College since 2014.

Furthermore, Mrs. Fox is an active board member of the Missouri Society for Respiratory Care and has been the treasurer of the MSRC since July 2017. Mrs. Fox has served on the CoARC board as a commissioner since 2018 and has been a CoARC site visitor since 2014.

Blake Anyan holds the Registered Respiratory Therapist (RRT) credential as well as the advanced credential of adult critical care specialist (ACCS). Mr. Anyan has ten years of experience working in adult critical care, has three years of part-time teaching experience, and has two years of full-time teaching experience at St. Louis Community College.

Faculty hired to teach in the Bachelor of Science in Respiratory Care 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 care 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.[7]

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:

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[7] "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

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.[8]

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.

Although STLCC's current AAS in respiratory care program currently integrates research 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. STLCC's bachelor's program will include dedicated research coursework in health literacy, statistics, and healthcare research to advance research in the field of respiratory care. The proposed curriculum is detailed in Appendix H.

Investment, Advocacy and Partnerships
Healthcare providers across Missouri are enthusiastic supporters of this proposal. They are in the difficult position of trying to provide the best level of care to Missourians, yet they are hurting due to the shortage of qualified respiratory therapists. This need is highlighted by Marla Overy from St. Louis Children's Hospital in her letter of support (Appendix D) where she notes, "Currently our department has a hiring gap of 18.37 FTE's with having to fill some of this gap with contingent workers." The needs of one hospital nearly outweigh the number of graduates in the current associate degree program. With 38 hospitals in the St. Louis metropolitan area, the shortage of qualified respiratory therapists is exacerbated. Health care organizations and hospitals - from large to small - continually ask community colleges to help develop a pipeline of skilled professionals by expanding existing or beginning new programs, but community colleges are now unable to respond to that need. Letters of support in Appendix D are evidence of their need and their support.

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[8] 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

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
STLCC is accredited by the Higher Learning Commission, which establishes standards for academic and student support services and faculty credentials. The Higher Learning Commission 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).[9]

STLCC has consulted with the HLC and will be prepared to meet the requirements for external accreditation by this body upon approval by the CBHE.

In addition, STLCC's Respiratory Care Program is accredited by CoARC. The program completed a self-study and site visit in 2019/2020 and have been awarded another ten years of continuing accreditation, valid until July 31, 2030.

CoARC accreditation Standard 2.01 requires the sponsor of the accredited program to "ensure that fiscal, academic and physical resources are sufficient to achieve the program's goals, as defined in Standard III, for all program locations, regardless of the instructional methodology used." The program must, at least annually, use the CoARC Resource Assessment Surveys to assess these resources described in Standard II. Surveys are completed by all enrolled students, personnel, the advisory committee, and medical director. Survey data results are correlated into the Resource Assessment Matrix (RAM) to include in the annual report to CoARC. According to Standard 2.16, "The results of the resource assessment must be part of the

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[9] "HLC Policy: Current Criteria for Accreditation" Higher Learning Commission. June 2014.
https://www.hlcommission.org/Policies/criteria-through-august-31-2020.html

Program Director's continuous analysis of the program and used to make appropriate changes to program resources. Identification of any deficiency requires development of an action plan, documentation of its implementation, and evaluation of its effectiveness by ongoing resource assessment."

Financial Resources

Financial resources must be sufficient to develop and sustain the program on a continuing basis. This includes the ability to recruit and retain qualified faculty as well as purchase and maintain the equipment needed to adequately cover the curriculum in a high-quality manner. Healthcare innovation and changes require that the sponsor plan for annual budget needs for advancing technology that is necessary to reflect the current concepts of respiratory care. Please see Appendix G for the draft budget for the Bachelor of Science in Respiratory Care degree program at STLCC.

Academic and Student Support Services

STLCC uses a case-load approach to student advising. Each student is assigned their own academic success advisor so that the student will receive communication throughout the semester to direct the student to processes and supports to ensure their success. In addition to this support, the Academic Success and Tutoring centers on each campus provide free academic tutoring services. Included in this area are Writing Centers. All of these services are offered both virtually and on the campuses.

Students also have access to library resources on each campus as well as virtually. The libraries contain diverse collections, interlibrary loan services, MOBIUS access, and research databases.

The STLCC Access Offices support students and staff, so that an equitable and accessible environment is provided for learning. The Access Office takes an individualized approach to empower each student with the knowledge to make informed decisions in order to reach their fullest academic potential.

Faculty Resources

The adjunct and full-time faculty at STLCC meet the credentialing requirements of the Higher Learning Commission. All general education faculty possess a minimum of a master's degree with at least 18 graduate credit hours in the discipline in which they teach. STLCC plans to hire three full-time faculty to support the Bachelor of Science in Respiratory Care program who will possess the required credentials.

Full-time faculty at STLCC teach a base load of 15 credit hours per semester. Program coordinators receive 26% release from their teaching load to coordinate the program. Clinical coordinators receive 20% release time from their teaching load to coordinate the clinical education for the program.

Each campus has a Center for Teaching and Learning coordinator who provides faculty development experiences. A library guide was developed as a repository for faculty development materials so that these items can be easily accessed by faculty. New faculty go through an intensive one-week orientation followed by a year-long training experience. The year-long training experience is done in a learning community format that builds strong bonds within the group, so that they can serve as support for each other in their work at the college. In addition, each full-time faculty member has a guaranteed $1000 per year for professional development funding for their use in skill acquisition and maintenance.

(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 health science training programs are expensive to implement and sustain. However, they are offered to serve the region's need for a skilled healthcare workforce, consistent with the community college mission. Most of these programs do not cover their own costs, but are supplemented with revenue from other, more profitable programs. STLCC commits to supplement and support both the start-up costs and the ongoing costs of this new program.

Respiratory Care Bachelor of Science Revenue/Expense Analysis
The proposed budget for the Bachelor of Science in Respiratory Care Degree program can be found in Appendix G.

Budget Narrative
Tuition and Fees: For FY20, the cost to attend St. Louis Community College is $116.50 per credit hour for in-district students and $165.50 for out-of-district students. The average number of credit hours each year in the proposed bachelor's degree program will be 30 credit hours. Expected enrollment in the bachelor's degree program will be eight students in year one, 12 students in year 2, and 15 students in each year after that. Maintenance fees generated by an estimated 45 students in year five using in-district rates will equal $157,275. Each individual student will produce $13,900 in maintenance fees over 120 credit hours in the program.

Personnel costs: Three additional full-time Respiratory Care faculty will be added to serve the new bachelor's degree program. Additional adjunct faculty will also be needed for this program. A shared secretarial position (20%) will be used to help with administrative needs of the program. These costs will be implemented over the course of five years for a total cost of $409,665.06 when fully implemented.

Expenses: Other expenses that are projected for the implementation of this program include accreditation costs, build-out of the spaces on the Florissant Valley campus, furniture and equipment for these spaces, marketing of the new program, operating expenses, and professional development for the faculty.

Accreditation: Year one accreditation costs include additional Letter of Intent and provisional fees. Annual accreditation fees outside of these additional costs are $1000 per year.

Construction: Spaces at the Florissant Valley campus have been identified for laboratory and simulation build-outs. These costs are estimated at $460,000 in year one.

Furniture: New furniture will be needed in these spaces at a cost of $15,000 in year one.

Equipment: Simulation and other laboratory equipment will be purchased for these spaces at an estimated cost of $700,000 in year one.

Marketing/Recruiting: In years one and two, an estimated $5000 per year will be used to promote the program and recruit students.

General Expenses: General operating expenses are expected to be greater in year one, but will be $6800 each year after that.

Professional Development: The faculty contract at STLCC provides for $1000 per full-time faculty member each year. Total cost for three additional full-time faculty will be $3000 per year.

(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*[10]

Applications

Respiratory Care Applications in Missouri

	2018	**2017**	**2016**	**2015**	**2014**	**2013**
Associate's	170	103	132	164	219	242
Bachelor's	25	25	19	28	23	20

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[10] "2019 Report on Accreditation in Respiratory Care Education." Commission on Accreditation for Respiratory Care. 20 May 2020. https://www.coarc.com/

Respiratory Care Applications at STLCC

	2020	**2019**	**2018**	**2017**	**2016**	**2015**
Associate's	26	20	18	21	20	30
Bachelor's	n/a	n/a	n/a	n/a	n/a	n/a

Enrollment

New Enrollments in Missouri

	2018 Max Capacity	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**
Associate's	243	126	78	86	120	145	149
Bachelor's	24	19	22	10	21	15	11

New Enrollments at STLCC

	2020 Max Capacity	**2020**	**2019**	**2018**	**2017**	**2016**	**2015**
Associate's	25	24	18	16	18	18	15
Bachelor's	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Graduates

Total Graduates in Missouri

	2018	**2017**	**2016**	**2015**	**2014**	**2013**
Associate's	98	92	96	118	110	146
Bachelor's	8	20	15	11	11	10

Total Graduates at STLCC

	2020	**2019**	**2018**	**2017**	**2016**	**2015**
Associate's	11	14	15	20	11	22
Bachelor's	n/a	n/a	n/a	n/a	n/a	n/a

These applicant, enrollment, and graduate numbers are instructive in the following ways:
- Missouri's respiratory therapy program applicants and enrollments have increased this past year in response to the current economic and healthcare crisis. This indicates 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.

- Missouri's community colleges have historically been the primary producers of qualified respiratory therapists in the state.
- The total number of graduates in Missouri is not enough to fill the estimated 220 annual vacancies.
- 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.

(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 care 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).[11] 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 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.[12]

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[11] Examinations. The National Board for Respiratory Care. June 2020. https://www.nbrc.org/examinations/
[12] "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

Evidence that the Proposed Program is Needed

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

St. Louis Community College offers a high-quality, accredited AAS degree in the new Center for Nursing and Health Science facility located at the Forest Park Campus in the City of St. Louis.

The University of Missouri has a BS satellite program in the St. Louis region at Mercy Hospital, and St. Louis College of Health Careers (SLCHC) offers both an AAS and a BS degree advancement program in the St. Louis Region (Fenton).

According to our external workforce report (Appendix C) there were only 8 bachelor's level graduates in the St. Louis area in all of 2019 (all from SLCHC), and there were 43 job postings in the last six months seeking this credential.

There is not enough RT programming for the demand/needs in the St. Louis region. In addition, there is significant demand in north St. Louis County as evidenced by the letter of support from Christian Hospital (Appendix D). Placing this program at the Florissant Valley campus of St. Louis Community College will not lead to unnecessary duplication, but rather, additional opportunity for our students to meet the demands of the workforce.

Virtual course delivery methods for this program are limited due to the hands-on skilled learning outcomes that must be accomplished to meet accreditation standards. Therefore, establishing the bachelor's degree program at the Florissant Valley campus will not duplicate the program at the Forest Park campus of St. Louis Community College.

(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 care services. The greatest need for respiratory care practitioners will be in rural areas.[13]

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

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

vacancies numbering 220 statewide.[14] Respiratory therapy was identified as the sixth fastest-growing occupation in the St. Louis Region in 2017-2019 with an expected need of 50 additional respiratory therapists in that region alone.[15] The Kansas City Region indicates a 25% growth in the demand for respiratory therapists, and the Ozark Region anticipates a 38.5% growth.[16] In fact, MERIC identifies respiratory therapy as a "Top Grade Career" in every region in the state of Missouri.

However, for the last three years of IPEDS completion data, Missouri institutions have produced an average of only 163 respiratory therapy graduates annually. If the community colleges expand or offer new programs, there is potential to fill the workforce pipeline gap in this industry.

Additionally, respiratory care 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 pandemic, which has highlighted the need for skilled and highly trained respiratory therapists who work on the frontlines of the fight against this illness. Further, 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.[17]

The St. Louis region mirrors the state and the country with respect to need for these trained professionals. Attached is a market analysis provided by an external data and analytics company, Chmura Economics & Analytics (Appendix C). Also attached are several letters from St. Louis area employers concerning the need for, or support of, STLCC's request to expand this programming in respiratory care (Appendix D).

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 survey done in response to the AARC's position statement. 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."

[14] Real Time Labor Market Data. Missouri Economic Research and Information Center. June 2020.
https://meric.mo.gov/media/pdf/real-time-labor-market-summary
[15] St Louis Region Fastest Growing Occupations 2017-2019. Missouri Economic Research and Information Center. March 2018.
https://meric.mo.gov/sites/meric/files/library/fastest_growing_stl_2017-2019.pdf
[16] Regional Profiles. Missouri Economic Research and Information Center. June 2020.
https://meric.mo.gov/regional-profiles
[17] "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

This was a statewide survey and was pushed out to AARC members via an email link placed on MSRC social media pages and promoted by the MSRC board members.

As mentioned earlier, the current pandemic conditions have impacted the need for trained specialists in respiratory care. According to analysis by Chmura, in a six-month period (180 days ending on 10/20/2020), there were almost 400 job postings for respiratory therapists – almost double the number in the entire 2017 year (205 postings, 2017 RT Real-Time Intelligence Report, Appendix E).

While it is important to consider the current pandemic conditions and the resultant immediate need for respiratory therapists, it is even more important to consider the ongoing job growth and subsequent need for employees in this specialty after the pandemic subsides. The Chmura report (Appendix C), along with our internal analytics, show a year-over-year increase in the number of respiratory therapy jobs in the St. Louis region. The economists at Chmura forecast growth based on historical information and not simply current conditions. While the expected annual growth of 1.1% may seem small, it is vital to understand the volume of jobs this reflects and whether the pipeline of graduates into those jobs is sufficient. Within the next seven years, it is projected that this growth will result in 119 additional jobs in the area (Appendix C, pg. 6). Also indicated in the report, employers in the St. Louis area may have difficulty filling jobs in respiratory therapy and may be required to recruit employees from outside the region (Appendix C, pg. 13). This analysis clearly indicates a labor market shortage of respiratory therapists in the area that could be remediated by additional graduates from accredited programs.

This report also points to the increased demand for respiratory therapists with bachelor's degrees. Using analytics on job postings for respiratory therapists, Chmura identified that 43 out of 189 job postings requested a bachelor's degree as the minimum education level for the opening (page 17). This reflects 24% of the postings that had an identifiable minimum education level. This data is based on recent postings – a 180-day period ending October 20, 2020. To understand the magnitude of this increase, it is important to note that this rate was only 18% in 2017 (Appendix E).

Christian Hospital in north St. Louis County has a shortage of trained respiratory therapists. North St. Louis County has been disproportionately impacted by the current pandemic. In the past six months (180-day period ending 11/16/2020), thirteen job postings for respiratory therapists were made by Christian Hospital with eight of the thirteen (62%) requiring a minimum of a bachelor's degree (Appendix F).

(III). Clear plan to meet the articulated workforce need

a. Aligned curriculum with specific knowledge and competencies needed to work in the field
St. Louis Community College's Respiratory Care Program has been the leading choice of healthcare employers in the St. Louis area for almost fifty years. Due to the quality of the program and its strong ties to the community, the placement rate was 86% for the years 2017-2019. The CoARC Entry to Practice standards for curriculum will be used to adapt the curricular components of the baccalaureate program.
Program Goal:

> **CoARC 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)"

In addition, the Standard 3.01 requires that an additional goal for programs at the baccalaureate or master's level be as follows:

> 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)."

To prepare graduates with the cognitive, psychomotor, and affective behavior domains, the Bachelor's in Science in Respiratory Care curriculum will correlate with the most recent National Board for Respiratory Care (NBRC) examination matrices as well as the required affective behaviors as stated in the AARC Respiratory Code of Conduct.   To prepare leaders of the field of respiratory care, the curriculum will include coursework in management, health literacy, statistics, research, and health education. The St. Louis region offers premier clinical opportunities for clinical specialization which will be offered in the last semester of the curriculum.

Student Learning Outcomes

Student learning outcomes (SLOs) will be based on the necessary knowledge, skills, and affective behavior required by that of a Registered Respiratory Therapist with a baccalaureate degree. The National Board for Respiratory Care (NBRC) is the credentialing agency and has created a matrix of the two required board exams for the RRT credential that align with a

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nation-wide job analysis performed every five years. The last update was in January of 2020. The proposed curriculum (Appendix H) will cover the information in these matrices (Appendix I). Furthermore, to ensure that the second part of the program goal is achieved, there will be student learning outcomes centered around the acquisition of skills in management, education, research, and advanced clinical practice.

Minimum Course Content

According to the Commission on Accreditation for Respiratory Care (CoARC) standards 4.01, the program must have minimum course content that includes "content in oral and written communication skills, social/behavioral sciences and biomedical/natural sciences as well as respiratory care." Our proposed curriculum includes general education courses in English composition and communication courses that will provide students opportunities to gain competency in writing as well as communicating across different cultures. These outcomes will also be assessed within respiratory care coursework utilizing simulation and clinical training. Social and behavioral sciences will include general education courses such as general psychology and sociology. Because respiratory therapists' jobs include assessing patients for brain death as well as performing terminal weans from the mechanical ventilator, there will also be a psychology course about death and dying. Biomedical and natural science coursework will include biology, anatomy and physiology, microbiology, and physics.

According to CoARC Standard 4.02, "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 to advanced clinical practice (which may include an area of clinical specialization)." The proposed curriculum will include three courses revolving around the area of research. First, students will take an introduction to statistics course. Next, students will take a health literacy course to understand how to obtain and read evidence-based medicine literature. Lastly, during the last semester of the program, students will take a healthcare research class in which they will use information from these two previous courses to complete a research capstone project. A healthcare management course will be provided within the last semester of the program in which students will learn about management structures of healthcare as well as leadership skills they can use in any position. A healthcare education course will provide information on community and patient education, focusing on disease management. This course will also provide information regarding formal education in the field of respiratory care. Lastly, in regard to clinical specialization, there will be opportunities for a clinical externship and clinical electives students may choose to gain experience in these specialty areas that require a baccalaureate degree or higher.

Core Competencies

The CoARC accreditation standards also list core competencies for respiratory care programs. These include Standards 4.04 through 4.07.

Standard 4.04: Graduates must be competent to perform all diagnostic and therapeutic procedures required of a Registered Respiratory Therapist entering the profession.

The Bachelor of Science in Respiratory Care program will include five separate lab courses, totaling 6 credit hours, which is equaled to 9,000 hours in lab. One-third of these hours include a lab for neonatal and pediatric respiratory care and advanced critical care techniques that will only be delivered in the bachelor's program. Students will be assessed on these skills during lab, simulation, and during clinical training.

Standard 4.05: Graduates must be able to function proficiently within inter-professional teams and communicate effectively with diverse populations. The curriculum must prepare students to work with, and care for, a variety of populations including, but not limited to, individuals of various ages, abilities, and ethnicities.

Prior to starting the professional coursework of the program, students will be required to complete COM:200 Communication Across Cultures in which students will examine communication topics such as barriers, language, and culture shock and develop skills utilizing cultural research and case studies. Within the program, the respiratory care students will have opportunities to practice working within inter-professional teams in the simulation center. The Health Science division at St. Louis Community College includes programs in nursing, EMS, paramedic, diagnostic imaging, surgical technology, clinical laboratory science, and physical and occupational therapy assistants. Students can also collaborate with students and faculty in behavioral health, biomedical electronic technology, deaf communication studies, and other programs housed at the Florissant Valley campus.

Standard 4.06: Program graduates must exhibit adequate critical thinking skills and be competent in the application of problem-solving strategies in the patient care setting.

The first two years of this program will be in general education courses that will provide a foundation for students as they enter the professional courses and utilize these principles as they will be asked to apply theories and analyze data. Many respiratory care courses will incorporate problem-based learning strategies in order to engage students to critically think through patient case studies. These assignments will be used to assess the students' critical thinking skills during didactic and lab activities. Evidence-based medicine guidelines will be taught throughout the program, requiring students to analyze data provided to make clinical decisions at the bedside during lab, simulation, and especially in the clinical setting. Paid clinical instructors will be taking students into the clinical setting with set objectives for each week. These objectives will include tasks revolving around critical thinking and decision

making. The clinical instructors will assess the students' abilities to perform these competencies daily in clinical.

> **Standard 4.07:** Graduates must demonstrate ethical decision-making skills and an understanding of professional responsibility.

A requirement of the program will be the completion of a medical ethics course in which students will analyze a range of moral issues related to the fields of medicine from the standpoint of philosophical ethical theories. The students will have an opportunity to put these theories to practice through clinical simulations and clinical training.

STLCC's proposed Bachelor of Science in Respiratory Care degree program has been developed following these standards. A draft of the proposed program is located in Appendix H.

b. Providing students with external learning experiences to increase the probability that they will remain in the applicable geographic area after graduation

The Bachelor of Science in Respiratory Care program will include five semesters of clinical coursework that will begin the first semester of the students' professional coursework. The clinical courses will include:

- Clinical Practice I – students will spend one day a week during the last 8 weeks of the first semester being introduced to the healthcare setting. The student learning objectives will be centered around communication, documentation, comprehending patient histories, and performing physical assessments at the bedside. This clinical rotation will be an estimated 32 hours.
- Clinical Practice II – students will spend one day a week in the hospital setting providing care on the general floors. Students will assess patients and use protocols to make clinical decisions that will treat the patients in need of respiratory care. They will be required to assemble and troubleshoot equipment used to provide general respiratory care. This clinical rotation will be an estimated 128 hours.
- Clinical Practice III – students will be introduced to the intensive care units and emergency departments of the hospital to learn about the care of critically ill patients. They will assess, perform diagnostic tests, and treat patients in neurological, surgical, cardiovascular, and medical ICUs. They will be introduced to the care of the patient who is receiving mechanical ventilation via an artificial airway. They will practice critical care skills of airway management such as suctioning, assisting intubation, tracheostomy care, and extubation. This clinical rotation will be an estimated 192 hours.
- Clinical Practice IV – students will spend this rotation working with critically ill patients in the ICU and emergency departments to increase their level of knowledge, skill, and confidence working in this setting. They will become more independent and will be able to take on more regarding patient workload. Students will spend time in rounds with

the healthcare team and physicians, gaining experience in interprofessional and collaborative healthcare. The student will be expected to communicate with these healthcare professionals to discuss their patients' current plan and changes that need to be made to that plan. Advanced techniques of the baccalaureate therapist will be introduced during this rotation regarding ventilator management, advanced diagnostics, and cutting-edge therapeutics. This clinical rotation will be an estimated 256 hours.

- Clinical Practice V – during the last semester of the program students will be able to complete clinical externships in which they may provide their top choices of healthcare facilities in which they would like to work. The student will then be paired with a respiratory therapist at that site and will work their schedule with them throughout the semester. The goal of an externship experience will be to match a student with his or her future employer to make the transition from student to graduate a seamless one. This clinical rotation will be an estimated 192 hours.

- Clinical Practice VI – during the last semester of the program, students will be able to spend time in specialty areas that are specific to respiratory therapists with a bachelor's degree. These areas of specialization can include interventional radiology, bronchoscopy, ECMO specialist, formal education, management, physician clinics, home care, pulmonary function testing, and pulmonary rehabilitation. Students will be able to choose specialty areas in which they are most interested so that the experience is individualized. This clinical rotation will be an estimated 128 hours.

Overall, the clinical education portion of the baccalaureate program will be an estimated 928 hours, compared to the 832 hours in the associate's program. This is an 11.5% increase in clinical hours, with the additional opportunities for externships and specialization. The clinical education will be delivered in a high-quality manner using paid clinical instructors instead of volunteer preceptors provided by the hospitals. Implementing a paid clinical instructor model will ensure consistent and meaningful instruction of the students at the bedside. This a drastic difference from the volunteer preceptor model in which the therapists' priority is patient care.

c. A plan for assessing the extent to which the new program meets that need when implemented

Assessment of the Bachelor's in Applied Science in Respiratory Care will include the evaluation of program resources, evaluation of the program goals and student learning outcomes, and evaluation of the program through the annual assessment required by the Commission on Accreditation for Respiratory Care of outcome thresholds.

> **Assessment of Program Resources, CoARC Standard 2.16:** The program must, at least annually, use the CoARC Resource Assessment Surveys to assess the resources described in Standard II. Survey data must be documented in the CoARC Resource Assessment Matrix (RAM). The results of resource assessment must be part of the Program Director's continuous analysis of the program and

used to make appropriate changes to program resources. Identification of any deficiency requires development of an action plan, documentation of its implementation, and evaluation of its effectiveness by ongoing resource assessment.

Assessment of Program Goals and Student Learning Outcomes, CoARC Standard 3.03: Program goals must be the basis for continuous program planning, implementation, evaluation and revision. The program must formulate a systematic assessment process to evaluate the achievement of its goal(s) and expected student learning outcomes.

To demonstrate compliance, programs must document annual review and analysis of the program curriculum using sub score data by content domain of the NBCR TMC and CSE board exams. If any content area falls below 85% of the national mean, an action plan and follow up will be required. This information will be shared with the STLCC BASRT Advisory Committee.

For baccalaureate and master's programs, the program must develop outcome measures to assess the accomplishment of the required additional goal of competencies in leadership, research, education, and/or clinical specialization.

Assessment of Program Outcomes

Regardless of the degree awarded, all programs must, at a minimum, meet the thresholds established by CoARC for all mandated outcome measures at all program locations, notwithstanding the instructional methodology used. Program outcomes must be submitted to the CoARC annually, on or before the mandated deadline, using the Report of Current Status (RCS) format.

Evidence of Compliance will include the outcomes data of a three-year average completed in the annual RCS accepted by CoARC.

Outcomes reported will be the following:
1. Credentialing exam performance is evaluated by NBRC TMC High Cut Score success and NBRC RRT credentialing success, which is the percentage of program graduates (not the percentage of those taking the test) achieving the NBRC's High Cut Score and earning the RRT credential, respectively. The established threshold for TMC High Cut Score Success is 60%. There is no threshold for RRT Credentialing Success; however, programs are still required to provide RRT outcomes data on annual reports.
2. Retention is defined as the number of students who were formally enrolled in a respiratory care program and graduated from the program after completing all programmatic and graduation requirements, calculated as a percentage of the total number of students initially enrolled in that class. The established threshold for

retention is 70%, and the basis for CoARC action is a subthreshold retention average for a given three-year cycle.

3. Graduate and employer satisfaction surveys must be administered six (6) to twelve (12) months after graduation. The established threshold for these surveys is that for each question at least 80% of returned graduate and employer surveys rate overall satisfaction 3 or higher on a 5-point Likert scale. The basis for CoARC action is a subthreshold average of satisfactory responses for a given three-year cycle.

4. Job placement is also reported, but there is no threshold for CoARC. St. Louis Community College will utilize graduate surveys to provide information regarding the positions held by baccalaureate program.

The STLCC Respiratory Care Advisory Committee is made up of students, graduates, faculty, college administration, employers, physicians, and a member of the public; the committee meets twice a year. Program outcomes, resource assessment data, substantive changes, assessment of curriculum, and technical standards are reviewed and discussed, and all changes are voted upon by the committee. STLCC has an active and engaged advisory committee. The last meeting was held on October 12, 2020. The committee voted unanimously in support of STLCC offering a Bachelor of Science in Respiratory Care at the Florissant Valley campus.

The information provided in this Phase Two proposal demonstrates how STLCC has met both the legislated criteria and the departmental rules for approval to offer a Bachelor of Science in Degree in Respiratory Care. In addition to the workforce need and our institutional capacity to offer this program, we also have the support of our local employers and our public college colleagues to offer this program. We thank you for your consideration.

Appendix A:
Letter of Support from Four-Year Publics

July 24, 2020

Zora Mulligan, Commissioner of Higher Education
Missouri Department of Higher Education and Workforce Development
301 W. High Street
P.O. Box 1469
Jefferson City, MO 65201-1469

Commissioner Mulligan,

Thank you for the opportunity to provide input on this important Phase I proposal for eight community college bachelor's degrees in the field of respiratory care. This is a very important discussion, particularly due to the ongoing pandemic. In addition, how we approach this review will set precedent for future comprehensive reviews. We appreciate your consideration of our feedback and look forward to opportunities for further discussion beyond written comments.

Some four-year institutions became aware of the community colleges' intent to submit this proposal in May, when the community colleges expressed an interest in exploring the feasibility of a collaboration. Further definition of, and decision about, what it means for a community college to make "a good-faith effort" to explore a collaboration with a four-year partner and to look at multiple potential options for degree offerings is needed. This element needs clarification in the administrative rules and the process needs to define acceptable parameters moving forward.

We feel that OTC and STLCC are unique from the other six community colleges included in this proposal. Both have existing accredited respiratory therapy programs at the associate level and potentially have the necessary equipment and faculty necessary to offer the program at a high quality especially if they follow the guidelines for collaboration. This Phase I proposal further supports that conclusion, and both institutions should be afforded the opportunity to dive deeper with a Phase II proposal and external review.

We have serious concerns, however, regarding the remaining six institutions. For the sake of efficiency, we have no complaints if a collective of community colleges submits one, comprehensive document. For example, all eight institutions would likely want to lean on statewide workforce trends to support their cases, and it makes sense to communicate that information once, as opposed to eight separate times. However, the submission of a single document should not obfuscate the fact that these are eight separate proposals, with each individual institution needing to provide a standalone case for why it should be approved to offer a baccalaureate degree, per the department's *Plan for Comprehensive Review of Academic Program Proposals* (attached). Specifically, this should include the information requested in the department's *Elements of a Complete Proposal for Comprehensive Review*.

In the current proposal, only OTC and STLCC provide the requested information, while the others provide little-to-no evidence supporting a standalone case for why they can and should be authorized to offer this degree. In fact, the other six institutions are directly referenced in the proposal only once—on the cover page. Specific examples of our concerns are included below:

- In the section dedicated to ensuring program quality (pp. 7-8), only OTC and STLCC provide evidence of their ability to provide high-quality education and training in respiratory care. The other institutions should be required to provide similar evidence.

- The institutional capacity section (pp. 9-10) begins with a note that each community college will provide this information in Phase II, but this information—regarding academic and student support, faculty resources, a comprehensive cost/revenue analysis, student interest, and clinical capacity—is explicitly requested in the Phase I proposal. Using Higher Learning Commission (HLC) accreditation as primary evidence of institutional capacity is insufficient and sidesteps the department's requirements. Again, only OTC and STLCC provide additional information.

- Letters of support included in Appendix B (p. 16) should provide at least some evidence of relevant employer support for each individual institution's efforts. While there is greater institutional diversity in the letters of support (i.e., they are not limited to OTC and STLCC), three institutions have no letters of support.

Overall, we believe there is potential for a limited number of community college bachelor's degrees in respiratory care. OTC and STLCC have made a convincing case, and we believe they meet the statutory criteria. Our primary concern is that evidence of these institutions' readiness will be confused for that of the other six institutions for which very little or no evidence is provided. To allow those six institutions to proceed to Phase II at this point would set damaging precedent and undermine the integrity of the process. The required evidence to propose offering a bachelor's degree is not apparent and has certainly not been adequately articulated.

Sincerely,

Michael Godard
Provost
Southeast Missouri State University

Doug Davenport
Provost and Vice President for Academic Affairs
Missouri Western State University

Paula Carson
Provost and Vice President of Academic Affairs
Missouri Southern State University

Frank Einhellig
Provost
Missouri State University

Janet Gooch
Provost
Truman State University

Jamie Hooyman
Provost
Northwest Missouri State University

Steve Graham
Sr. Associate Vice President for Academic Affairs
University of Missouri System

LaTonia Collins Smith
Vice President, Academic Affairs
Harris-Stowe State University

Vicki Schwinke
Vice President of Academic Affairs
State Technical College

Alphonso Sanders
Provost and Vice President
Lincoln University

Phil Bridgmon
Provost and Vice President for Academic Affairs
University of Central Missouri
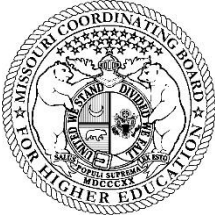
Tab 12

Plan for Comprehensive Review of Academic Program Proposals

Coordinating Board for Higher Education
June 7, 2018

BACKGROUND

The Higher Education System Review Task Force in its report to the Coordinating Board recommended the process for reviewing and approving proposals for new academic programs be updated to allow institutions to meet state workforce needs. MDHE staff and institutional representatives developed a three-tiered approach to new academic program review, which included a comprehensive review path for institutions to propose programs outside their mission. In anticipation of pending legislation removing certain statutory restrictions on degrees offered at public institutions of higher education being enacted, MDHE staff has developed guidelines for submitting proposals under the comprehensive review umbrella. These guidelines discussed below have been excerpted from 6 CSR 10-4.010, which the Coordinating Board approved in December 2016 and is now in the final stages of the rulemaking process.

CURRENT STATUS

The 2018-2019 review cycle commences on July 1, 2018, and institutions must submit preliminary proposals for new academic programs requiring comprehensive review by that date. As this is year two of the revised program review process, the CBHE will consider as many as five proposals, with no more than three proposals from either public universities or public two-year institutions.

Preliminary Proposals

In order to avoid unnecessary expenses associated with a full comprehensive review, institutions will submit by July 1, 2018, a preliminary proposal for consideration. The preliminary proposal is a statement of the institution's intent and provides MDHE staff an opportunity to assess which programs should be considered for a full comprehensive review. The CBHE, in its sole discretion and in consultation with MDHE staff, will determine by its September meeting which of the preliminary proposals to evaluate through a full comprehensive review. Proposals selected for a full comprehensive review will submit the additional elements to submit a complete proposal for comprehensive review. The Coordinating Board will take action on these proposals in March 2019.

Timeline for Conducting Comprehensive Reviews

May-June	MDHE strongly encourages institutions to notify the Assistant Commissioner for Academic Affairs prior to submitting a preliminary proposal for comprehensive review to assess informally the appropriateness of the institution's request and its capacity to comply with the requirements and expectations of the comprehensive review.
July 1	Preliminary proposals for new academic programs requiring comprehensive review due to the MDHE.
July-September	MDHE staff will determine which five proposals of those submitted received will be evaluated fully through the comprehensive review process.
September-February	MDHE staff will work with each institution with a proposal undergoing comprehensive review to ensure the proposal is complete and the CBHE has all the information and data necessary to approve or disapprove the proposed program.
March	The Coordinating Board for Higher Education will take action on the proposals considered through comprehensive review.

Elements of a Complete Proposal for Comprehensive Review

Each institution seeking approval for a program requiring comprehensive review will submit a complete proposal for the Coordinating Board's approval. A complete proposal will be submitted and reviewed over two phases, a preliminary and final phase.

Phase I

An institution seeking approval for an academic program requiring a comprehensive review will first submit a preliminary proposal to MDHE staff by July 1, 2018. The MDHE will provide forms for this initial step. The preliminary proposal will include the following:

A. Evidence that the proposing institution has explored the feasibility of collaboration with other institutions whose mission or service region encompasses the proposed program. At a minimum, the proposing institution must include letters from the chief academic officers of both the proposing institution and other institutions involved in exploring the feasibility of collaboration attesting to the nature of the discussions and explaining why collaboration in this instance is not feasible.

B. The proposal should identify and explain in detail which of the Blueprint for Higher Education goals the new program will advance.

C. The proposal must include evidence that the institution has the capacity to launch the program in a high-quality manner. This should include:

1. An assessment of the offering 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);

2. A comprehensive cost/revenue analysis summarizing the actual costs for the program and information about how the institution intends to fund and sustain the program;

3. 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; and

4. Where applicable, a description of accreditation requirements for the new program and the institution's plans for seeking accreditation.

Phase II

If the proposal is accepted for further evaluation, the institution will be asked to prepare materials for a complete proposal.

A. The proposing institution will consult with MDHE staff to identify an external review conducted by a team that includes faculty experts in the discipline of the program to be offered and administrators from institutions already offering programs in the discipline and at the degree level proposed. If appropriate, the external review team may include employer or industry experts. The exact size of the external review team may vary depending on the nature of the proposed program but generally will consist of five to nine individuals. The proposing institution will bear all costs associated with the external review.

B. The proposal must provide clear and compelling evidence that the proposed program is needed. This will include:

1. An explanation with supporting documentation demonstrating that the program does not unnecessarily duplicate other programs in the applicable geographic area, as described in subsection (10)(C) of the administrative rule;

2. In consultation with MDHE staff and with consideration of input offered by the external review team described above, the proposing institution will present a rigorous analysis demonstrating a strong and compelling workforce need for the program, which might include data from a credible source, an analysis of changing program requirements, the current and future workforce and other needs of the state, and letters of support from local or regional businesses indicating a genuine need for the program;

3. The institution will provide a clear plan to meet the articulated workforce need, including:

   a. Aligning curriculum with specific knowledge and competencies needed to work in the field(s) or occupation(s) described in the workforce need analysis in part (II) of this subparagraph;

   b. Providing students with external learning experiences to increase the probability that they will remain in the applicable geographic area after graduation; and

   c. A plan for assessing the extent to which the new program meets that need when implemented.

The Coordinating Board will apply the same comprehensive review criteria and standards used to approve baccalaureate degree programs at four-year public institutions in the comprehensive review process when considering proposals from two-year institutions to offer baccalaureate degrees.

RECOMMENDATION

This is an information item only.

Appendix B:
Steve Graham Letter

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).

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.

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

Appendix C:
Market Analysis – Workforce Report CHMURA

October 29, 2020

To Whom It May Concern:

St. Louis Community College is seeking to create a bachelor's degree program to train respiratory therapists. As part of this process, the college must demonstrate market demand for such a program. This letter is intended to provide context and key points for the attached market demand report for respiratory therapists. The St. Louis, MO-IL metropolitan statistical area (MSA) is the region under consideration for market demand. Two questions must be considered when determining market demand for this program:

1. What is the long-term outlook for demand for respiratory therapists in the St. Louis region?
2. What is the trend in entry-level training required for respiratory therapists?

In considering the first question, skills and occupations that are in demand today may not be in demand in the months or years ahead when a student finishes a training program or education. For that reason, long-term gaps need to be considered in conjunction with current gaps. The Occupation Snapshot section of the attached report shows the JobsEQ® forecast of annual demand for 119 new respiratory therapists over the next seven years due to growth in the region's industries. Including demand from people exiting the labor market (includes individuals who are retiring) or transferring to other occupations, total demand for respiratory therapists in the region is expected to exceed 700 over the next seven years. This occupation is expected to grow at an average annual rate of 1.1% compared with the average forecast decline of 0.1% each year for the region overall.

The Training Concentration section provides further evidence of a potential shortfall in training for respiratory therapists. Training Concentration analysis considers output from related training programs in the region against a baseline of national awards output for a given occupation. In comparison with the national norm, the St. Louis region has an estimated shortfall of 13 postsecondary awards for respiratory therapists each year. Taken together, these sections show a current training gap for respiratory therapists and forecast long-term market demand for this occupation.

The second question relates to the need for a bachelor's program in addition to existing associate programs in the region. As shown in the Education Profile section, the typical entry-level education requirement for respiratory therapists determined by the Bureau of Labor Statistics is an associate degree, held by 56% of workers in this occupation, suggesting a two-year award would be sufficient.

However, several trends indicate the training requirements for respiratory therapists are increasing. Nationally, associate awards for respiratory therapists have fallen 22% from 2010 to 2019, while bachelor's awards nearly doubled (up 93%) over this period (see figure to the right). The share of bachelor's degrees as a percent of total awards in respiratory care has steadily increased from 10% in 2010 to 22% in 2019.

Respiratory Therapist Awards in USA
(Index 2010 = 100)
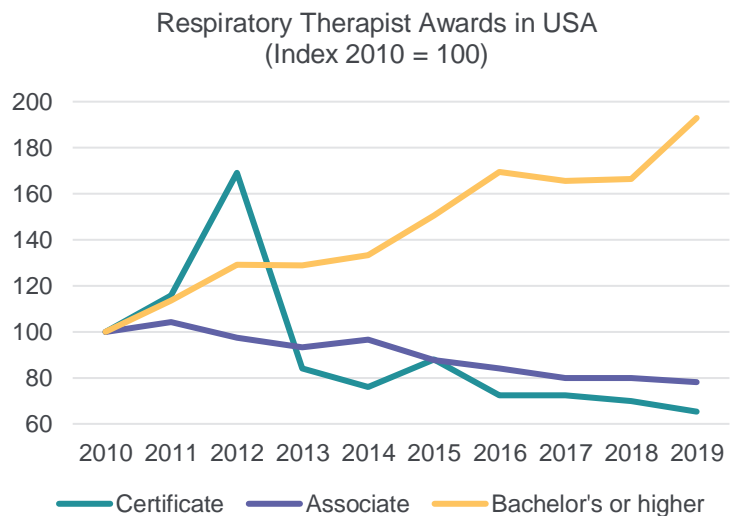
Source: NCES, JobsEQ by Chmura

This increasing demand for bachelor's degrees is expected to continue for both students and employers over the next decade. The American Association for Respiratory Care (AARC), the foremost professional association promoting respiratory therapists, issued an updated position statement on entry-level training requirements for the profession in 2019. "To achieve consistency in practice and the provision of safe, efficient, and effective care," AARC recommends a requirement for entry of a bachelor's degree in respiratory therapy or related health sciences and a Registered Respirator Therapist (RRT) certification for all new respiratory therapists beginning by at least 2030.[1]

Finally, data from online job postings provide further evidence of the current demand for respiratory therapists with a bachelor's degree. As shown in the RTI (Job Postings) section of the attached report, nearly 400 online job ads have been posted for respiratory therapists in the MSA over the last six months. Of those that provided a minimum education level in the ad, 43 (or 24%) requested a bachelor's degree. In contrast, only eight bachelor's degrees were awarded in 2019 for respiratory therapists in the region, all from the private St. Louis College of Health Careers.

In summary, the market analysis shows evidence of current gaps and strong demand in the future for a bachelor's degree for respiratory therapists in the St. Louis MSA.

Sincerely,

Patrick Clapp

Economist

Chmura Economics & Analytics

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[1] Source: https://www.aarc.org/wp-content/uploads/2019/09/issue-paper-entry-to-respiratory-therapy-practice-2030.pdf

Occupation Report

Respiratory Therapists

St. Louis, MO-IL MSA
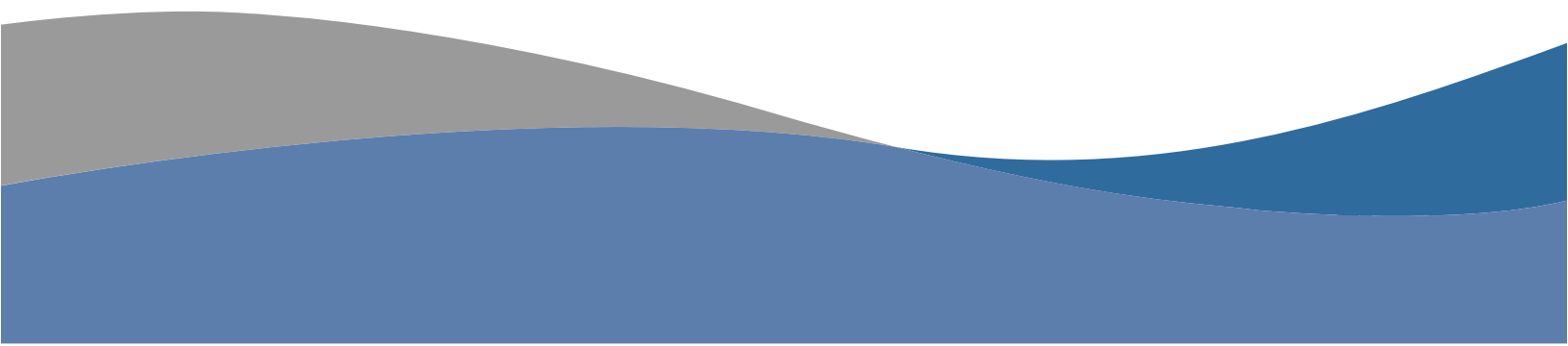
Definition of Respiratory Therapists, SOC 29-1126

Assess, treat, and care for patients with breathing disorders. Assume primary responsibility for all respiratory care modalities, including the supervision of respiratory therapy technicians. Initiate and conduct therapeutic procedures; maintain patient records; and select, assemble, check, and operate equipment.

Occupation Snapshot

As of 2020Q2, total employment for Respiratory Therapists in the St. Louis, MO-IL MSA was 1,528. Over the past three years, this occupation added 92 jobs in the region and is expected to increase by 119 jobs over the next seven years, or at an annual average rate of 1.1%.

Respiratory Therapists in St. Louis, MO-IL MSA, 2020Q2[1]

	Current				3-Year History			7-Year Forecast				
Empl	Avg Ann Wages[2]	LQ	Unempl	Unempl Rate	Online Job Ads[3]	Empl Change	Ann %	Total Demand	Exits	Transfers	Empl Growth	Ann % Growth
1,528	$57,100	1.26	19	1.2%	139	92	2.1%	701	302	280	119	1.1%

Source: JobsEQ®
Data as of 2020Q2 unless noted otherwise
Note: Figures may not sum due to rounding.
1. Data based on a four-quarter moving average unless noted otherwise.
2. Wage data are as of 2019 and represent the average for all Covered Employment
3. Data represent found online ads active within the last thirty days in the selected region; data represents a sampling rather than the complete universe of postings. Ads lacking zip code information but designating a place (city, town, etc.) may be assigned to the zip code with greatest employment in that place for queries in this analytic. Due to alternative county-assignment algorithms, ad counts in this analytic may not match that shown in RTI (nor in the popup window ad list).

Occupation Employment in St. Louis, MO-IL MSA
Respiratory Therapists
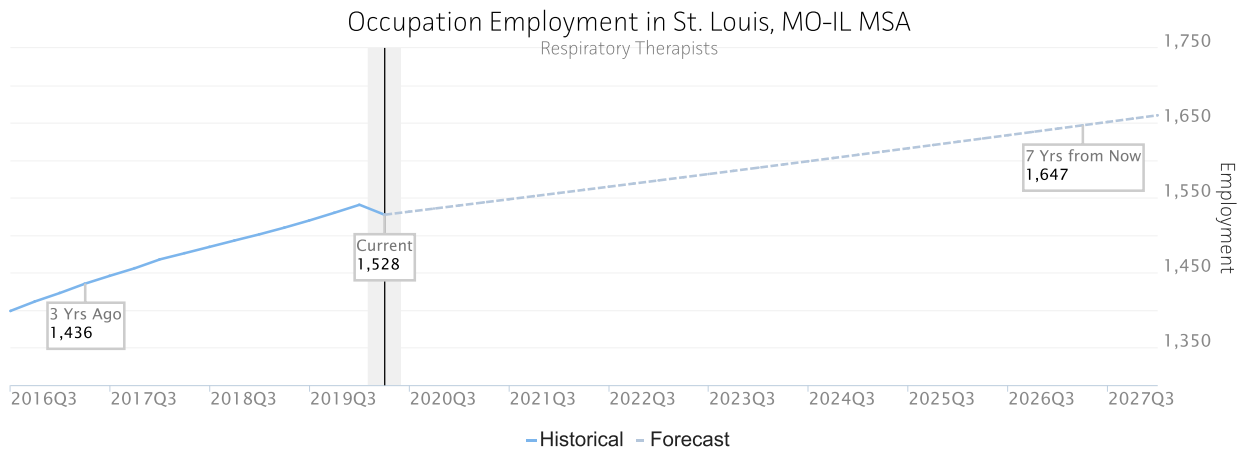
Source: JobsEQ®,Data as of 2020Q2,The shaded areas of the graph represent national recessions.

Occupation employment data are estimated via industry employment data and the industry/occupation mix. Industry employment data are derived from the Quarterly Census of Employment and Wages, provided by the Bureau of Labor Statistics and currently updated through 2019Q4, imputed where necessary with preliminary estimates updated to 2020Q2. Wages by occupation are as of 2019 provided by the BLS and imputed where necessary. Forecast employment growth uses national projections from the Bureau of Labor Statistics adapted for regional growth patterns. Occupation unemployment figures are imputed by Chmura.

Geographic Distribution

The below maps illustrate the ZCTA-level distribution of employed Respiratory Therapists in the St. Louis, MO-IL MSA. Employment is shown by place of work and by residence.

Occupation Concentration by Place of Work for Respiratory Therapists
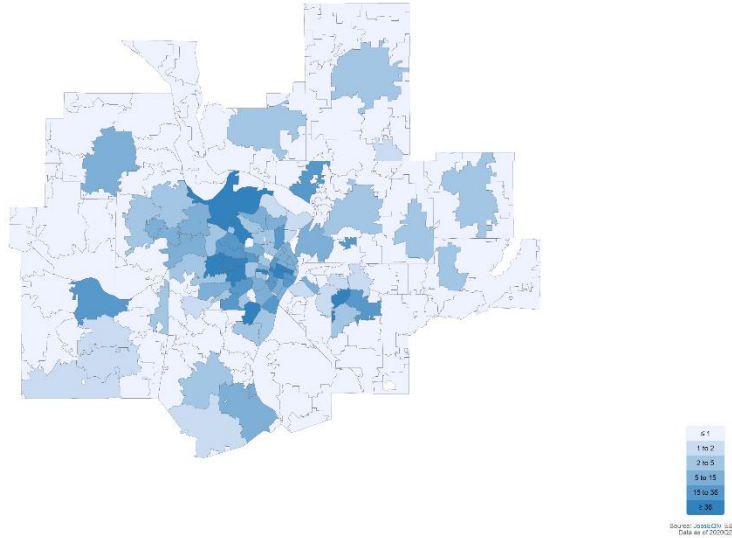
Top ZCTAs by Place of Work for Respiratory Therapists, 2020Q2

Region	Employment
ZCTA 63110	296
ZCTA 63141	76
ZCTA 63103	60
ZCTA 63017	60
ZCTA 63131	52
ZCTA 63128	51
ZCTA 63117 (St. Louis County, MO portion)	51
ZCTA 63108	44
ZCTA 63044	44
ZCTA 63301	38

Source: JobsEQ®

Occupation employment data are estimated via industry employment data and the industry/occupation mix. Industry employment data are derived from the Quarterly Census of Employment and Wages, provided by the Bureau of Labor Statistics and currently updated through 2019Q4, imputed where necessary with preliminary estimates updated to 2020Q2. Occupation by residence data are derived from the same in addition to commuting pattern data.

Top ZCTAs by Place of Residence for Respiratory Therapists, 2020Q2

Region	Employment
ZCTA 63129	62
ZCTA 63376	54
ZCTA 63031	44
ZCTA 63123 (St. Louis County, MO portion)	43
ZCTA 63033	37
ZCTA 63010	34
ZCTA 63034	32
ZCTA 63052	30
ZCTA 62226	30
ZCTA 63116	30

Source: JobsEQ®

Occupation employment data are estimated via industry employment data and the industry/occupation mix. Industry employment data are derived from the Quarterly Census of Employment and Wages, provided by the Bureau of Labor Statistics and currently updated through 2019Q4, imputed where necessary with preliminary estimates updated to 2020Q2. Occupation by residence data are derived from the same in addition to commuting pattern data.

Employment by Industry

The following table illustrates the industries in the St. Louis, MO-IL MSA which most employ Respiratory Therapists. The single industry most employing this occupation in the region is General Medical and Surgical Hospitals, NAICS 6221. This industry employs 1,236 Respiratory Therapists—employment which is expected to increase by 105 jobs over the next ten years; furthermore, 664 additional new workers in this occupation will be needed for this industry due to separation demand, that is, to replace workers in this occupation and industry that retire or move into a different occupation.

Top Industry Distribution for Respiratory Therapists (29-1126) in St. Louis, MO-IL MSA

NAICS Code	Industry Title	Current		10-Year Demand			
		% of Occ Empl	Empl	Exits	Transfers	Empl Growth	Total Demand
6221	General Medical and Surgical Hospitals	80.9%	1,236	345	319	105	769
6223	Specialty (except Psychiatric and Substance Abuse) Hospitals	6.2%	94	31	29	50	111
6231	Nursing Care Facilities (Skilled Nursing Facilities)	3.7%	57	16	14	2	32
6211	Offices of Physicians	1.5%	23	7	6	5	18
6213	Offices of Other Health Practitioners	1.1%	17	5	5	4	14
4234	Professional and Commercial Equipment and Supplies Merchant Wholesalers	1.1%	17	4	4	-2	6
4461	Health and Personal Care Stores	0.9%	14	4	3	-1	6
5324	Commercial and Industrial Machinery and Equipment Rental and Leasing	0.8%	13	4	3	1	8
5322	Consumer Goods Rental	0.7%	11	3	3	0	6
6216	Home Health Care Services	0.7%	10	3	3	4	10
6214	Outpatient Care Centers	0.6%	9	3	3	4	10
	All Others	1.8%	27	7	7	1	15

Source: JobsEQ®

Data as of 2020Q2 except wages which are as of 2019. Note that occupation-by-industry wages represent adjusted national data and may not be consistent with regional, all-industry occupation wages shown elsewhere in JobsEQ.

Note: Figures may not sum due to rounding.

Occupation employment data are estimated via industry employment data and the industry/occupation mix. Industry employment data are derived from the Quarterly Census of Employment and Wages, provided by the Bureau of Labor Statistics and currently updated through 2019Q4, imputed where necessary with preliminary estimates updated to 2020Q2. Forecast employment growth uses national projections from the Bureau of Labor Statistics adapted for regional growth patterns.

Wages

The average (mean) annual wage for Respiratory Therapists was $57,100 in the St. Louis, MO-IL MSA as of 2019. For the same year, average entry level wages were approximately $43,800 compared to an average of $63,800 for experienced workers.

Average Annual Wages
Respiratory Therapists in St. Louis, MO-IL MSA, 2019

Mean	$57,100
Entry Level	$43,800
Experienced	$63,800

Source: JobsEQ®

Percentile Wages

10th	25th	50th (median)	75th	90th
$41,900	$48,100	$56,100	$64,100	$74,600

Source: JobsEQ®
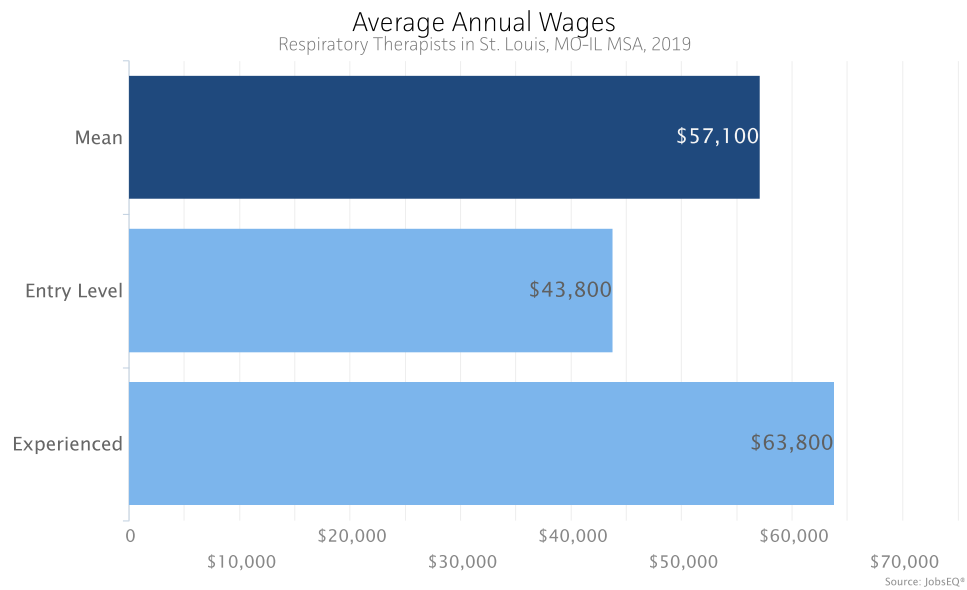
Occupation wages (mean, median, and percentiles) are as of 2019 provided by the BLS, modified and imputed by Chmura where necessary. Entry-level and experienced wages are derived from these source data, computed by Chmura.

Education Profile

Typical education and training requirements for Respiratory Therapists are described below.

Education and Training Requirements

Typical Entry-Level Education:	Associate's degree
Previous Work Experience:	None
Typical On-the-Job Training:	None

Educational Attainment Profile

Doctoral or Professional Degree 2.1%
Master's Degree 4.3%
Bachelor's Degree 27.7%
Less than High School Diploma 0.2%
High School Diploma or Equivalent 1.0%
Some College, No Degree 8.6%
Associate's Degree 56.2%
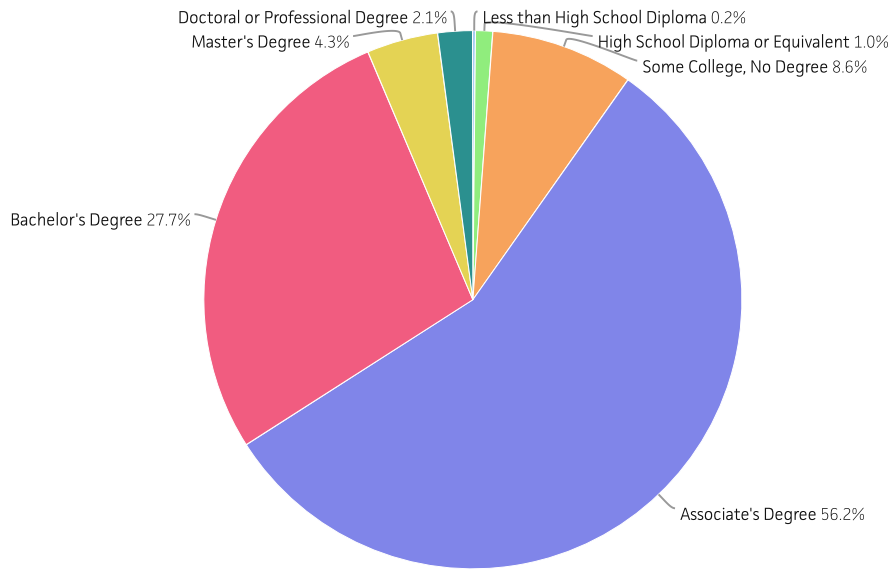
Education and training requirements are from the Bureau of Labor Statistics (BLS); educational attainment mix are regional data modeled by Chmura using Census educational attainment data projected to 2020Q2 along with source data from the BLS.

Awards

The table below is a list of postsecondary program awards that were granted by postsecondary institutions located in the St. Louis, MO-IL MSA in the 2019 academic year. These programs have been identified as providing training for Respiratory Therapists (for further details, see the source note).

Title/School	Annual Awards - St. Louis, MO-IL MSA		
	Certificates and 2yr Degrees	4yr Degrees	Postgraduate Degrees
51.0908 Respiratory Care Therapy/Therapist			
Kaskaskia College	12	0	0
Saint Louis Community College	15	0	0
Southwestern Illinois College	15	0	0
St Louis College of Health Careers-Fenton	31	8	0
Total			
Total	73	8	0

Source: JobsEQ®
Data as of the 2019 academic year
Awards data are per the National Center for Education Statistics (NCES) and JobsEQ for the 2019 academic year. Any programs shown here have been identified as being linked with the occupation being analyzed. Other existing programs may also provide training in the region for this occupation but have not been so identified by the program-occupation crosswalk (see the FAQ section at the end of this report for more details). Furthermore, any programs shown here reflect only data reported to the NCES; reporting is required of all schools participating in any federal finance assistance program authorized by Title IV of the Higher Education Act of 1965, as amended—other training providers in the region that do not report data to the NCES are not reflected in the above.

Training Concentration

In the 2018-2019 academic year, it is estimated that postsecondary schools in the St. Louis, MO-IL MSA granted awards for a potential 66 new Respiratory Therapists.[2] Given the size of this occupation in the region, this award output is below the national norm of 79 awards per year—put another way; it is at 83% of the national average.

Training concentrations above the national average can indicate that the region is an exporter of graduates for this occupation; in other words, some students may come from outside the region for this education and subsequently leave after the award to work outside the region. Training concentrations below the national average can indicate that the region is an importer of graduates for this occupation; in other words, some employers within the region who hire this occupation may need to hire workers who received this training outside of the region.

Awards versus National Norm

Source: JobsEQ®, Data as of 2020Q2
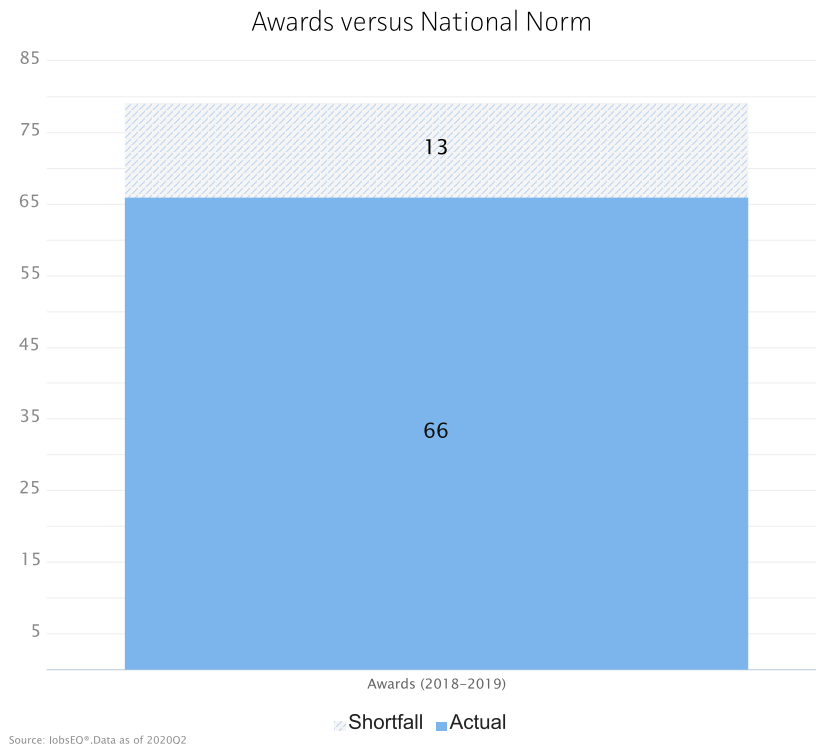
Awards data by occupation are estimates produced by JobsEQ and for the academic year 2018-2019.

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[2] This figure may not match the total awards shown in the prior section since some of those awards may flow into more than one occupation.

RTI (Job Postings)

Occupations

SOC	Occupation	Total Ads	
29-1126.00	Respiratory Therapists	393	

Locations

Location	Total Ads	
63110	51	
Saint Louis, Missouri	41	
St Louis, Missouri	35	
Fenton, Missouri	12	
63131	11	
Saint louis, Missouri 63101	11	
Saint Louis, MO 63150	10	
St. Louis, MO 63128	10	
63136	9	
Bridgeton, Missouri	8	

Employers

Employer Name	Total Ads	
SSM Health	61	
Barnes-Jewish Hospital	30	
BJC HealthCare	25	
St. Louis Children's Hospital	19	
Advanced Travel Therapy	12	
Club Staffing	12	
Kindred	11	
Missouri Baptist Medical Center	11	
CoreMedical Group	10	
Christian Hospital	9	

Source: JobsEQ®
Data reflect online job postings for the 180 day period ending 10/20/2020
Note: Data are subject to revision. Time series data can be volatile with trends unrelated to actual changes in demand; use with caution.

Certifications

Certificate Name	Total Ads	
Registered Respiratory Therapist (RRT)	44	
Basic Life Support (BLS)	41	
Advanced Cardiac Life Support Certification (ACLS)	40	
Certified Respiratory Therapist (CRT)	23	
Certification in Cardiopulmonary Resuscitation (CPR)	19	
Licensed Respiratory Care Practitioner (RCP)	8	
Registered Nurse (RN)	8	
Pediatric Advanced Life Support (PALS)	7	
Certified Nursing Assistant (CNA)	4	
Licensed Practical Nurse (LPN)	4	

Source: JobsEQ®
Data reflect online job postings for the 180 day period ending 10/20/2020
Note: Data are subject to revision. Time series data can be volatile with trends unrelated to actual changes in demand; use with caution.

Hard Skills

Skill Name	Total Ads	
Critical Care	51	
Patient Care	29	
Endotracheal Tubes	25	
Wound Care	17	
Pediatrics	14	
Intensive Care Unit (ICU)	9	
Ability to Lift 51-100 lbs.	8	
Long-Term Care	8	
Geriatric	6	
Home Health Care	6	

Source: JobsEQ®
Data reflect online job postings for the 180 day period ending 10/20/2020
Note: Data are subject to revision. Time series data can be volatile with trends unrelated to actual changes in demand; use with caution.

Soft Skills

Skill Name	Total Ads	
Supervision/Management	115	
Time Management/Time Utilization	106	
Critical Thinking	92	
Troubleshooting	86	
Cooperative/Team Player	85	
Communication (Verbal and written skills)	81	
Self-Motivated/Ability to Work Independently/Self Leadership	32	
Customer Service	21	
Accountable/Responsible/Reliable/Dependable/Trustworthy	18	
Problem Solving	17	

Source: JobsEQ®
Data reflect online job postings for the 180 day period ending 10/20/2020
Note: Data are subject to revision. Time series data can be volatile with trends unrelated to actual changes in demand; use with caution.

Job Titles

Job Title	Total Ads	
Respiratory Therapist	37	
RRT	31	
Registered Respiratory Therapist, RRT	21	
PRN Registered Respiratory Therapist, RRT	20	
Respiratory Care Practitioner - RRT	12	
Registered Respiratory Therapist - (RRT)	10	
Respiratory Therapist (RT)	8	
Part-time Registered Respiratory Therapist, RRT	6	
Part-time Respiratory Care Assistant, RCA	6	
Respiratory Cardio - Registered Respiratory Therapist	5	

Source: JobsEQ®
Data reflect online job postings for the 180 day period ending 10/20/2020
Note: Data are subject to revision. Time series data can be volatile with trends unrelated to actual changes in demand; use with caution.

Education Levels

Minimum Education Level	Total Ads	
Associate's degree	146	
Bachelor's degree	43	
Unspecified/other	204	

Source: JobsEQ®
Data reflect online job postings for the 180 day period ending 10/20/2020
Note: Data are subject to revision. Time series data can be volatile with trends unrelated to actual changes in demand; use with caution.

Programs

Program Name	Total Ads	
Respiratory Therapy	26	
Science	3	
Healthcare	2	

Job Types

Type	Total Ads	
Full-Time	155	
Part-Time	65	
Temporary (unspecified)	21	
Temporary (short-term)	11	
Permanent	10	
Unspecified/other	180	

St. Louis, MO-IL MSA Regional Map
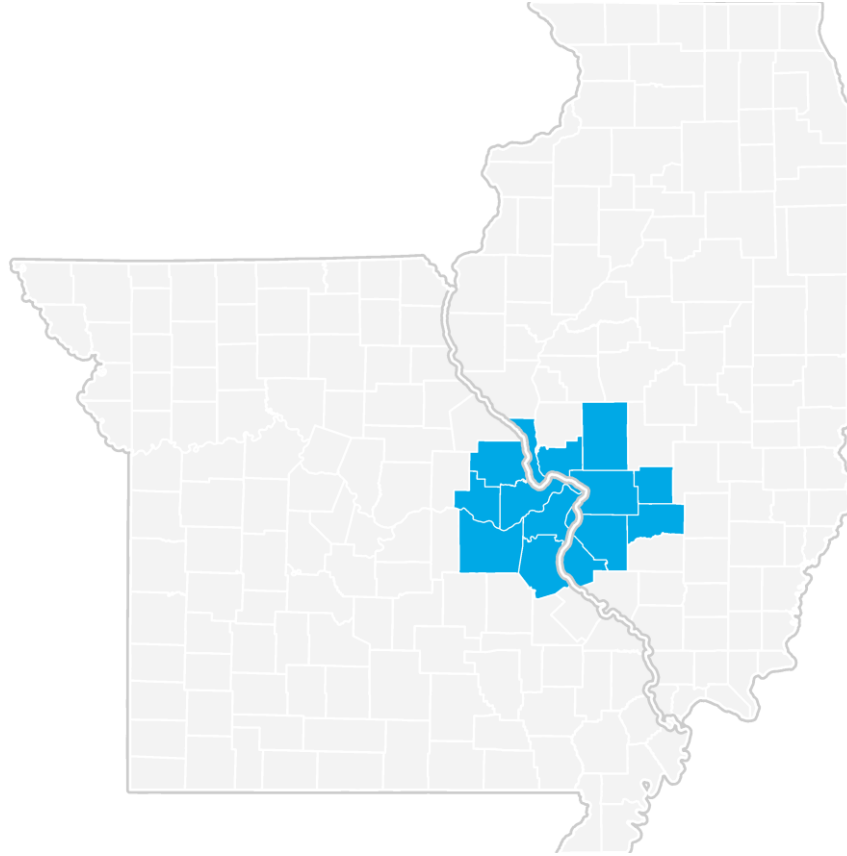
Region Definition

St. Louis, MO-IL MSA is defined as the following counties:

Bond County, Illinois	Franklin County, Missouri
Calhoun County, Illinois	Jefferson County, Missouri
Clinton County, Illinois	Lincoln County, Missouri
Jersey County, Illinois	St. Charles County, Missouri
Macoupin County, Illinois	St. Louis County, Missouri
Madison County, Illinois	Warren County, Missouri
Monroe County, Illinois	St. Louis City, Missouri
St. Clair County, Illinois	

FAQ

What is SOC?

The Standard Occupational Classification system (SOC) is used to classify workers into occupational categories. All workers are classified into one of over 804 occupations according to their occupational definition. To facilitate classification, occupations are combined to form 22 major groups, 95 minor groups, and 452 occupation groups. Each occupation group includes detailed occupations requiring similar job duties, skills, education, or experience.

What is a location quotient?

A location quotient (LQ) is a measurement of concentration in comparison to the nation. An LQ of 1.00 indicates a region has the same concentration of an occupation (or industry) as the nation. An LQ of 2.00 would mean the region has twice the expected employment compared to the nation and an LQ of 0.50 would mean the region has half the expected employment in comparison to the nation.

What is training concentration?

The training concentration analysis compares local postsecondary training output compared to the national norm. Let's consider registered nurses as an example. If in the nation, one RN award is granted for every ten RNs employed, that 1:10 ratio is the national norm. If in your region your schools also grant one RN award for every ten RNs employed, then your region will be right at the national norm, or we say at 100% of the national norm which is termed a 100% training concentration. If your region grants two RN awards for every ten employed, your region would be at twice the national norm or have a 200% training concentration. Similarly, if your region grants one RN award for every twenty employed, your region would be at half the national norm or have a 50% training concentration.

What is the program-to-occupation crosswalk?

Training programs are classified according to the Classification of Instructional Programs (CIP codes). For relating training programs, this report uses a modified version of the CIP to SOC crosswalk from the National Center for Education Statistics (NCES). While this is a very helpful crosswalk for estimating occupation production from training program awards data, the crosswalk is neither perfect nor comprehensive. Indeed, it is hard to imagine such a crosswalk being perfect since many training program graduates for one reason or another do not end up employed in occupations that are most related to the training program from which they graduated. Therefore, the education program analyses should be considered in this light.

As an example of the many scenarios that may unfold, consider a journalism degree that crosswalks into three occupations: editors, writers, and postsecondary communications teachers. Graduates with a journalism degree may get a job in one of these occupations—and that may be the most-likely scenario—but a good number of these graduates may get a job in a different occupation altogether (the job may be somewhat related, such as a reporter, or the job may be totally unrelated, such as a real estate agent). Furthermore, a graduate may stay in school or go back to school for a degree that will lead to other occupation possibilities. Still another possibility includes the graduate not entering the labor market (maybe being unemployed, being a non-participant, or moving to another region).

What is separation demand?

Separation demand is the number of jobs required due to separations—labor force exits (including retirements) and turnover resulting from workers moving from one occupation into another. Note that separation demand

does not include all turnover—it does not include when workers stay in the same occupation but switch employers. The total projected demand for an occupation is the sum of the separation demand and the growth demand (which is the increase or decrease of jobs in an occupation expected due to expansion or contraction of the overall number of jobs in that occupation).

What is NAICS?

The North American Industry Classification System (NAICS) is used to classify business establishments according to the type of economic activity. The NAICS Code comprises six levels, from the "all industry" level to the 6-digit level. The first two digits define the top level category, known as the "sector," which is the level examined in this report.

About This Report

Appendix D:
Letters of support

Saint Louis University Hospital
1201 S. Grand Blvd.
St. Louis, MO 63104

phone: 314-257-8000
ssmhealth.com/sluhospital

SSMHealth

Delores Griffin | Director – Respiratory Care and Bronchoscopy
Saint Louis University Hospital
(314) 257-1450

Letter of support for Forest Park Community College

In my capacity as Director of Respiratory Care and Bronchoscopy at SSM Health Saint Louis University Hospital, I would like to express my full support to St. Louis Community College at Forest Park in their pursuit for the option of Baccalaureate degree as part of their educational platform.

St. Louis Community College at Forest Park has been a very important resource for those of us seeking professional, qualified candidates. It is my belief that the high-quality educational goals that is set by the college will only enhance us as a profession and continue to elevate patient care in the area.

The proposed work is highly relevant and well in line with the SSMHealth commitment to exceptional care and the goals of care set within the department.

If you need any additional information, please feel free to reach out to me.

Yours sincerely,

Delores Griffin | Director – Respiratory Care and Bronchoscopy
Saint Louis University Hospital

Richard J. Liekweg
President and Chief Executive Officer

April 21, 2020

Jeff L. Pittman, Ph.D.
Chancellor
St. Louis Community College
3221 McKelvey Road
Bridgeton, MO 63044

Dear Dr. Pittman:

BJC HealthCare is pleased to support St. Louis Community College (STLCC), and its partner community colleges, proposal for the expansion of respiratory care 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 St. Louis metropolitan area.

BJC HealthCare is one of the largest nonprofit health care organizations in the United States, delivering services to residents primarily in the greater St. Louis, southern Illinois and mid-Missouri regions. Serving the health care needs of urban, suburban and rural communities, BJC includes 15 hospitals and multiple health service organizations. Services include inpatient and outpatient care, primary care, community health and wellness, workplace health, home health, community mental health, rehabilitation, long-term care and hospice. BJC's nationally recognized academic hospitals, Barnes-Jewish and St. Louis Children's hospitals, are affiliated with Washington University School of Medicine.

As an employer of more than 31,000 health care professionals, we can attest to the dire need for qualified registered respiratory therapists.

We look forward to partnering with you on this endeavor and working with you to address our region's health sciences workforce pipeline issues.

Sincerely,

Richard J. Liekweg

4901 Forest Park Avenue · St. Louis, Missouri 63108-1401 · www.bjc.org

BJC | The World's Best Medicine. Made Better.

Mercy Hospital St. Louis

Paul R. Bast, RRT, MBA

Executive Director RT Services
Administrative Lead Pulmonary Specialty Council
Mercy Hospital St. Louis
615 S. New Ballas Rd.342A St. Louis, MO 63141
Office: 314-251-5477| Fax: 314-251-5714

11/20/2020

To whom it may concern,

To educators of the state of Missouri concerning the question of the Bachelor of Science program at Forest Park Community College St Louis, MO. as a respiratory leader in the Saint Louis area for over 40 years I would like to put my support behind the proposal for a bachelor's of science program in respiratory therapy at Saint Louis Community College. The shortage of respiratory therapist in the Saint Louis market has been on-ongoing concern for the last several decades. Adding an additional program to the Saint Louis market in the form of a bachelor's degree program would be extremely beneficial to the patients and hospitals in the Saint Louis and surrounding areas. The evaluations done by our national organization the American Association for respiratory care as shown at the respiratory therapy market is one of the areas that will be in high demand over the next decade and beyond. This additional program would greatly help Saint Louis market as well as surrounding areas be able to provide quality well educated respiratory care practitioners to help those patients in need of respiratory services for years to come. Please let me know if there is anything, I can do to answer any questions you may have.

Recoverable Signature

X   *Paul Bast*

Paul R. Bast, RRT, MBA
Executive Director RT Services
Signed by: Bast, Paul

November 18, 2020

To Whom It May Concern:

Hello, my name is Marla Overy and I serve as the Program Manager for Clinical Service Lines at St. Louis Children's Hospital, which includes the Respiratory Care Department. I am also a Registered Respiratory Therapist myself and manage a department of 110 Respiratory Therapist. I am contacting you to provide support for St. Louis Community College's current proposal with the State of Missouri to offer a baccalaureate degree in Respiratory Care at St. Louis Community College.

In 2019, the American Association for Respiratory Care (AARC) issued a statement that set a goal for all Registered Respiratory Therapist to have a baccalaureate degree for entry into the profession starting in 2030. I am in support of this change for my profession and look forward to it advancing the profession of Respiratory Care and the department I currently serve.

Along with the support of this advancement comes concerns for the challenges this will create. Currently our department has a hiring gap of 18.37 FTE's with having to fill some of this gap with contingent workers. This does not include the additional positions I would like to request to meet future growth demands. Much of this hiring gap is due to the limited supply of RT's in the current market. In addition, the majority of the current RT programs are not baccalaureate degrees. With this future change, I anticipate having even less programs and less candidates and an even larger hiring gap then what we currently struggle with.

Currently, STLCC is one of our primary sources of qualified and competent RT's. The program has been highly successful in producing outstanding candidates. It is an affordable and accessible program for our community and provides a strong educational foundation for our candidates. The program has a long history of success and I hope to have it continue to be a source of our future candidates. I fully support St. Louis Community College's current proposal with the State of Missouri to offer a baccalaureate degree in Respiratory Care at St. Louis Community College. If I can answer any questions, please do not hesitate to reach out to me at the number below.

Sincerely,

Marla Overy RRT-NPS

Marla Overy RRT-NPS
Program Manager Clinical Service Line
St. Louis Children's Hospital
314-454-2334

**SAINT LOUIS
UNIVERSITY**

William L Hubble, PhD, CNMT, RT (R)(CT)(N), FSNMMI-TS
District Division Dean of Academic Affairs-Health Sciences   November 5, 2020
St. Louis Community College
5600 Oakland Avenue
St. Louis, MO 63110-1316

Re: Letter of Support for a Baccalaureate Program in Respiratory Care at St. Louis Community College

Dear Dr. Hubble:

For many years, I have known St. Louis Community College to be an institution that is continually responding to the various needs of the St. Louis region. As a medical provider of pediatric pulmonary care, I have witnessed this directly through my work with highly trained respiratory therapists that have received instruction and a degree from your Respiratory Care Program at St. Louis Community College. These colleagues and former students that have matriculated through this program are educated about recent advancements in respiratory therapy and are "work ready" for their respective employers in St. Louis regional medical care centers.

I have had the fortune of serving as the Medical Director of this program and have seen how accreditation standards are exceeded on a regular basis. This has led to a recent 10-year accreditation award by the Commission of Accreditation for Respiratory Care, the highest achievable. It is my understanding that this governing body, as well as the American Association of Respiratory Care, have set new goals for a baccalaureate degree to be the standard for entry into the profession of respiratory therapy by 2030. With St. Louis Community College being a recognized regional and national leader in instructing the next generation of respiratory therapists, it stands to reason that this program would help establish a path to a baccalaureate degree to achieve meeting these goals. This letter serves as a strong support for St. Louis Community College to develop this baccalaureate program in respiratory care.

The needs for advancing instruction in respiratory care are evolving and place a greater demand on respective students. Respiratory therapists are truly essential workers that have played a key health care role during the current coronavirus pandemic. They react to and guide bedside care of some of the sickest patients, they optimize use of technology like ventilators while also troubleshooting when necessary, they draft policy to keep patients and health care providers safe, and they remain aware of updates to the medical literature and scientific basis of the care they provide. These elements are clearly formidable and reflect the need for advancing instruction in this discipline.

The Respiratory Care administrative leadership team at St. Louis Community College is quite suited for this task ahead as you pursue this update. I am more than happy to continue work with you and this team to help with these endeavors. Please do not hesitate to contact me if I can offer any added perspective that might help this worthy process.

Regards,

Kurtis T. Sobush, MD
Associate Professor of Pediatrics, Saint Louis University School of Medicine
Department of Pediatrics, Division of Pulmonary and Sleep Medicine
Medical Director of the Complex Medical Care Program
SSM Health/Cardinal Glennon Children's Hospital
Medical Director of Respiratory Care
St. Louis Community College
314-268-6439

April 21, 2020

Jeff L. Pittman, Ph.D.
Chancellor
St. Louis Community College
3221 McKelvey Road
Bridgeton, MO 63044

Dear Dr. Pittman:

Christian Hospital/BJC HealthCare is pleased to support St. Louis Community College (STLCC), and its partner community colleges, proposal for the expansion of respiratory care 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 St. Louis metropolitan area.

BJC HealthCare is one of the largest nonprofit health care organizations in the United States, delivering services to residents primarily in the greater St. Louis, southern Illinois and mid-Missouri regions. Serving the health care needs of urban, suburban and rural communities, BJC includes 15 hospitals and multiple health service organizations. Services include inpatient and outpatient care, primary care, community health and wellness, workplace health, home health, community mental health, rehabilitation, long-term care and hospice. BJC's nationally recognized academic hospitals, Barnes-Jewish and St. Louis Children's hospitals, are affiliated with Washington University School of Medicine.

As an employer of more than 31,000 health care professionals, we can attest to the dire need for qualified registered respiratory therapists.

Christian Hospital/BJC HealthCare will actively support STLCC in this endeavor by offering clinical locations, offering paid internships, and interviewing qualified candidates who complete.

We look forward to working with you in addressing our region's health sciences workforce pipeline issues.

Sincerely,

Rick Stevens, FACHE
President

Appendix E:
Real-Time Intelligence Report

Real-Time Intelligence Report

Query Definition

Online job postings for 2017, meeting all of the following criteria:

• This region: St. Louis, MO-IL MSA

• This occupation: Respiratory Therapists (29-1126)

Summary

Total Job Posts	Occupations	Locations	Employers	Certifications	Hard Skills	Soft Skills	Job Titles	Education Levels	Programs	Job Types
205	1	54	73	16	29	29	124	2	3	5

Openings by Occupations

Occupations

SOC	Occupation	Total Ads	
29-1126.00	Respiratory Therapists	205	

Openings by Locations

Locations

Location	Total Ads	
St Louis, Missouri	46	
Belleville, Illinois	19	
Saint Louis, Missouri	16	
Missouri-St. Louis-SSM Health Cardinal Glennon Children's Hospital	12	
St Charles, Missouri	7	
Bridgeton, Missouri	6	
Granite City, Illinois	5	
Illinois-Centralia-SSM Health St. Mary's Hospital – Centralia	4	
Missouri-St. Louis-BJC Hospital	4	
Saint Louis, MO 63108	4	
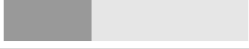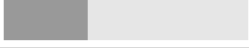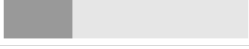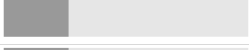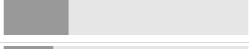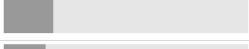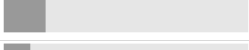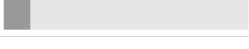
Openings by Employers

Employer Name	Total Ads	
SSM Health	23	
BJC HealthCare	22	
Mercy	15	
Washington University in St. Louis	9	
Kindred Healthcare	7	
HSHS St. Elizabeth Hospital, Belleville IL	6	
HealthSouth Corporation	6	
SSM Health | SSM Health St. Joseph Hospital - St. Charles	6	
Select Medical	6	
SSM Health | SSM Health St. Mary's Hospital - St. Louis	5	

Openings by Certifications

Certifications

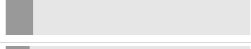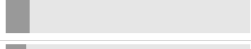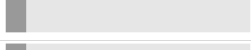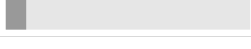| Certificate Name	Total Ads	
Basic Life Support (BLS)	64	
Registered Respiratory Therapist (RRT)	29	
Pediatric Advanced Life Support (PALS)	23	
Neonatal Resuscitation Program (NRP)	22	
Licensed Respiratory Care Practitioner (RCP)	18	
Advanced Cardiac Life Support Certification (ACLS)	17	
Certification in Cardiopulmonary Resuscitation (CPR)	17	
Certified Respiratory Therapist (CRT)	13	
Registered Nurse (RN)	11	
Licensed Practical Nurse (LPN)	7	
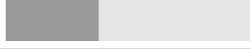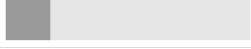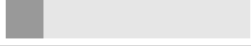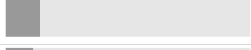
Openings by Hard Skills

Hard Skills
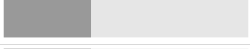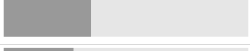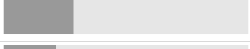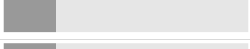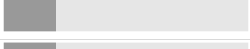
Skill Name	Total Ads	
Patient Care	42	
Electronic Health Record (EHR)	12	
Intensive Care Unit (ICU)	12	
Critical Care	10	
Pediatrics	10	
Teaching/Training, Job	8	
Electrocardiogram (ECG, EKG)	7	
Ability to Lift 21-30 lbs.	6	
Calculators	6	
Health/Wellness	6	

Openings by Soft Skills

Soft Skills

Skill Name	Total Ads	
Cooperative/Team Player	71	
Communication (Verbal and written skills)	52	
Supervision/Management	27	
Self-Motivated/Ability to Work Independently/Self Leadership	13	
Good Judgment	11	
Adaptability/Flexibility/Tolerance of Change and Uncertainty	10	
Ability to Work in a Fast Paced Environment	8	
Problem Solving	7	
Critical Thinking	6	
Detail Oriented/Meticulous	6	

Openings by Job Titles
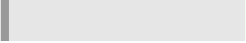
Job Titles

Job Title	Total Ads	
Respiratory Care Practitioner	14	
Respiratory Therapist	12	
Reg Respiratory Therapist	9	
RRT PRN	5	
Respiratory Care Assistant	5	
Respiratory Therapist (LTACH)	5	
Respiratory Care Practitioner Sign on Bonus	4	
Cardiopulmonary/Pulmonary Function Technician - Pulmonary	3	
Pulmonary Tech	3	
RRT Sign On Bonus Eligible	3	

Openings by Education Levels

Education Levels

Minimum Education Level	Total Ads	
Associate's degree	71	
Bachelor's degree	16	
Unspecified/other	118	

Openings by Programs

Programs

Program Name	Total Ads	
Respiratory Therapy	29	
Healthcare	22	
Science	1	

Openings by Job Types

Job Types

Type	Total Ads	
Full-Time	38	
Part-Time	17	
Temporary (unspecified)	5	
Permanent	3	
Temp-to-Hire	1	
Unspecified/other	145	

Data Notes

Job ads data are online job posts from the Real-Time Intelligence (RTI) data set, produced wholly by Chmura and gleaned from over 30,000 websites. Data are subject to revision. Data in this report reflect ads meeting criteria in the Query Definition, including being active during the Query Definition time-frame and being advertised for any Zip Code Tabulation Area in or intersecting with the Query Definition region(s).

Historical volume is revised as additional data are made available and processed. Since many extraneous factors can affect short-term volume of online job postings, time-series data can be volatile and should be used with caution.

All ad counts represent deduplicated figures. It is not always possible to conclusively identify duplicate ads with the information provided. Characteristics that impact this determination are the wording of the ads, volume of information provided, the timing of the ads, and the sites where the ads appear. Roughly two-thirds of ad volume is removed through this process.

RTI wages are extracted from job postings as given and are analyzed and converted into hourly or annual formats. When wages provided are hourly, the conversion to annual wages assumes full-time, year-long employment. When a wage is given as a range, a single wage is selected within that range based upon our analysis of the "most likely" wage given those circumstances. Displayed wages in RTI may not include commissions or overtime, depending upon how the source ads present those wages. After all analysis and cleaning, roughly 12% of all job postings provide a usable wage.

Approximately 4% of jobs are omitted from the RTI duration data due to quality reasons. For example, ads open for an inordinately long period—indicating that it is likely being left up not for one, but for multiple openings—are excluded from the duration data. These ads are also excluded from the count of "Ads Closed."

FAQ

How does the time period work?

Online job postings included in this report are those that meet the Query Definition parameters (shown above) and that were active at any point in the specified time frame preceding the date this report is generated. As such, this report may include some ads that were closed as of the date of this report; in addition, this report may include some ads that were first posted prior to the specified time frame referred to above.

What are "active" and "closed" ads?

An "active" ad refers to an online job posting that was still posted online when Chmura's web crawler last viewed that page, which occurs at least once a week. An ad is considered "closed" if Chmura's web crawler no longer sees the ad listed or if the ad is specifically designated on the site as no longer being active.

Is every online-job-ad website included in these data?

We make every attempt to catch all of the significant job-posting websites across the United States, but we cannot guarantee complete, 100% coverage. If you have any questions about a particular website, please don't hesitate to ask.

Appendix F:
Christian Hospital Report

Real-Time Intelligence Report
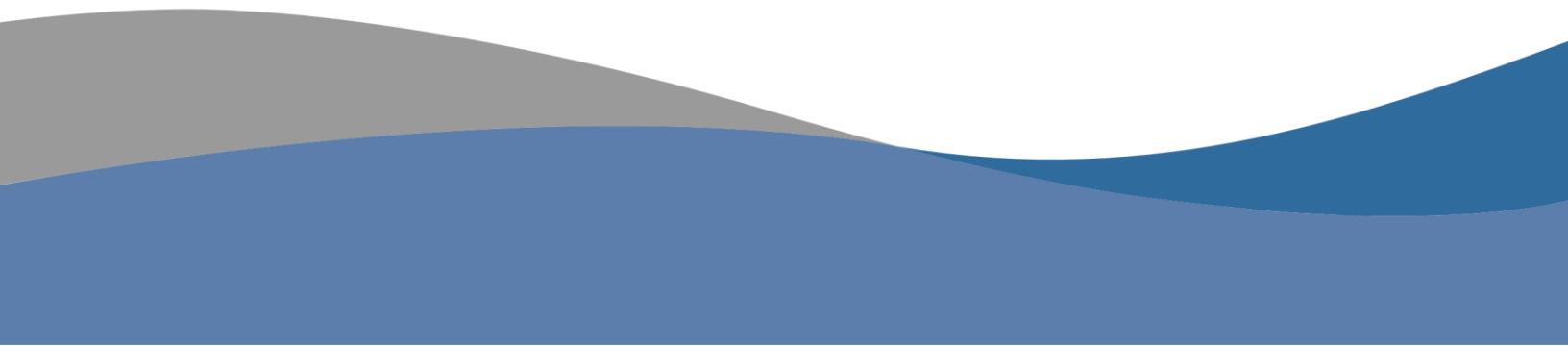
Query Definition

Online job postings for the 180 day period ending 11/16/2020, meeting all of the following criteria:

• This region: St. Louis, MO-IL MSA

• This occupation: Respiratory Therapists (29-1126)

• Postings where the employer name contains: "Christian Hospital"

Summary

Total Job Posts	Occupations	Locations	Employers	Certifications	Hard Skills	Soft Skills	Job Titles	Education Levels	Programs	Job Types
13	1	1	1	0	1	10	9	2	0	2

Openings by Occupations

Occupations

SOC	Occupation	Total Ads	
29- 1126.00	Respiratory Therapists	13	

Openings by Locations

Locations

Location	Total Ads	
63136	13	

Openings by Employers

Employers

Employer Name	Total Ads	
Christian Hospital	13	

Openings by Hard Skills

Hard Skills

Skill Name	Total Ads	
Wound Care	12	

Openings by Soft Skills

Soft Skills

Skill Name	Total Ads	
Critical Thinking	13	
Supervision/Management	13	
Time Management/Time Utilization	13	
Troubleshooting	11	
Accountable/Responsible/Reliable/Dependable/Trustworthy	2	
Cooperative/Team Player	2	
Dispute Resolution/Conflict Resolution/Diplomacy/Problem Resolution	2	
Good Judgment	2	
Initiative	2	
Leadership	2	

Openings by Job Titles

Job Titles

Job Title	Total Ads	
Registered Respiratory Therapist, RRT	4	
PRN Registered Respiratory Therapist, RRT	2	
Part-time Registered Respiratory Therapist, RRT	1	
Registered Respiratory Therapist, RRT (Full-Time/Day)	1	
Registered Respiratory Therapist, RRT (PRN)	1	
Registered Respiratory Therapist, RRT (Part-Time/Day)	1	
Respiratory Care Coordinator, RRT	1	
Respiratory Shift Coordinator (Nights)	1	
Respiratory Therapist - $10K Sign On Bonus	1	
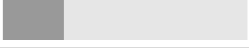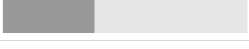
Openings by Education Levels

Education Levels

Minimum Education Level	Total Ads	
Bachelor's degree	8	
Associate's degree	5	

Openings by Job Types

Job Types

Type	Total Ads	
Full-Time	8	
Part-Time	2	
Unspecified/other	3	

Data Notes

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Is every online-job-ad website included in these data?

We make every attempt to catch all of the significant job-posting websites across the United States, but we cannot guarantee complete, 100% coverage. If you have any questions about a particular website, please don't hesitate to ask.

Appendix G:
Budget

Bachelor's Degree - Respiratory Therapy

Academic Year	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
Projected Students (Freshman - Senior)	8	20	35	40	45

Revenue:

	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
Tuition	$ 27,960.00	$ 69,900.00	$ 122,325.00	$ 139,800.00	$ 157,275.00
$116.50/cr for 30 hrs					
Total Revenue	**$ 27,960.00**	**$ 69,900.00**	**$ 122,325.00**	**$ 139,800.00**	**$ 157,275.00**

Personnel Cost (Faculty and Staff):

	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
Program Coordinator Salary	$ 18,343.00	$ 18,343.00	$ 18,343.00	$ 18,343.00	$ 18,343.00
Program Coordinator Salary + Benefits	$ 24,843.76	$ 25,027.19	$ 25,210.62	$ 25,394.05	$ 25,577.48
Clinical Coordinator Salary	$ 16,015.60	$ 16,015.60	$ 16,015.60	$ 16,015.60	$ 16,015.60
Clinical Coordinator Salary + Benefits	$ 21,691.53	$ 21,851.68	$ 22,011.84	$ 22,172.00	$ 22,332.15
Faculty Salary	$ 133,840.00	$ 200,760.00	$ 200,760.00	$ 200,760.00	$ 200,760.00
Faculty Salary + Benefits	$ 181,272.90	$ 273,916.94	$ 275,924.54	$ 277,932.14	$ 279,939.74
Adjunct Faculty Salary	$ -	$ 23,799.15	$ 23,799.15	$ 23,799.15	$ 23,799.15
Adjunct Faculty Salary + Benefits	$ -	$ 25,786.38	$ 25,786.38	$ 25,786.38	$ 25,786.38
Summer Faculty	$ -	$ 30,127.50	$ 30,127.50	$ 30,127.50	$ 30,127.50
Summer Faculty + Benefits	$ -	$ 41,105.96	$ 41,407.24	$ 41,708.51	$ 42,009.79

Summer Adjunct Faculty	$	-	$	4,407.25	$	4,407.25	$	4,407.25	$ 4,407.25
Summer Adjunct + Benefits	$	-	$	4,775.26	$	4,775.26	$	4,775.26	$ 4,775.26
Staff Salary	$	6,477.20	$	6,477.20	$	6,477.20	$	6,477.20	$ 6,477.20
Staff Salary + Benefits	$	8,985.17	$	9,049.94	$	9,114.72	$	9,179.49	$ 9,244.26
Subtotal Personnel Cost	**$**	**236,793.36**	**$**	**401,513.36**	**$**	**404,230.59**	**$**	**406,947.82**	**$ 409,665.06**

Expenses:

Accreditation	$	2,250.00	$	1,000.00	$	1,000.00	$	1,000.00	$ 1,000.00
Construction	$	460,000.00	$	-	$	-	$	-	$ -
Furniture	$	15,000.00							
Equipment	$	700,000.00	$	-	$	-	$	-	$ -
Marketing / Recruiting	$	5,000.00	$	5,000.00					
General Expenses	$	10,000.00	$	6,800.00	$	6,800.00	$	6,800.00	$ 6,800.00
Professional Development	$	2,000.00	$	3,000.00	$	3,000.00	$	3,000.00	$ 3,000.00
Subtotal Expenses	**$**	**1,194,250.00**	**$**	**15,800.00**	**$**	**10,800.00**	**$**	**10,800.00**	**$ 10,800.00**
Total Personnel Cost and Expenses	**$**	**1,431,043.36**	**$**	**417,313.36**	**$**	**415,030.59**	**$**	**417,747.82**	**$ 420,465.06**
Contribution to the College	**$**	**(1,403,083.36)**	**$**	**(347,413.36)**	**$**	**(292,705.59)**	**$**	**(277,947.82)**	**$ (263,190.06)**

Appendix H:
BSRC Curriculum

Recommended Academic Plan
St. Louis Community College
Bachelor's of Science in Respiratory Care

Year 1 – Semester 1 (Fall)	Credits
Course	Credits
ENG101 Composition I (MOTR ENGL 100)	3
SOC101 Intro to Sociology (MOTR SOCI 101)	3
BIO111 General Biology (MOTR BIOL 100L)	4
Civics (MOTR HIST 101, MOTR HIST 102, MOTR HIST 101AA, MOTR HIST 102AA, MOTR POSC 101)	3
Subtotal	13

Year 1 – Semester 2 (Spring)	Credits
Course	Credits
COM107 Public Speaking (MOTR COMM 107)	3
MTH140 Intermed Algebra OR MTH160 Precalc Algebra	3
ENG102 Composition II (MOTR ENGL 200)	3
HS100 Medical Terminology	3
Subtotal	12

Year 2 – Semester 1 (Fall)	Credits
Course	Credits
BIO207 Anatomy & Physiology I (MOTR LIFS 150 LAP)	4
CHEM105 General Chemistry I (MOTR CHEM 150L)	5
BIO203 Microbiology	4
MTH180 Introduction to Statistics (MOTR MTH 110)	3
Subtotal	16

Year 2 – Semester 2 (Spring)	Credits
Course	Credits
PHL109 Bio-medical Ethics	3
HS200 Health Literacy	3
PSY200 General Psychology (MOTR PSYC 100)	3
BIO208 Anatomy & Physiology II	4
COM200 Communication across Cultures (MOTR SBSC 101)	3
Subtotal	16

Year 3 – Semester 1 (Fall)	Credits
Course	Credits
RC110 Cardiopulmonary A&P	3
RC120 Fundamentals of Respiratory Care	6
RC125 Fundamentals of Respiratory Care Lab	2
RC145 Pharmacology	3
RC175 Clinical Practice I	1
Subtotal	15

Year 3 – Semester 2 (Spring	Credits
Course	Credits
RC150 Respiratory Care Practices with Lab	4
RC160 Mechanical Ventilation I with Lab	4
RC180 Cardiopulmonary Diseases	3
RC195 Clinical Practice II	1
HS250 Psychology of Death and Dying	3
Subtotal	15

Year 3 – Semester 3 (Summer)	Credits
Course	Credits
RC200 Adult Critical Care	3
RC224 Neonatal Respiratory Care	2
RC235 Clinical Practice III	1
Subtotal	6

Year 4 – Semester 1 (Fall)	Credits
Course	Credits
RC226 Pediatric Respiratory Care	2
RC225 Neonatal/Pediatric Respiratory Care Lab	1
RC215 Advanced Critical Care Techniques	3
RC216 Advanced Critical Care Techniques Lab	1
RC240 Respiratory Care Specialties	3
RC265 Clinical Practice IV	2
Subtotal	12

Year 4 – Semester 2 (Spring)	Credits
Course	Credits
RC270 Healthcare Management	3
RC280 Healthcare Research	3
RC290 Healthcare Education	2
RC255 NBRC Review	2
RC275 Clinical Practice V	2
RC285 Clinical Practice VI Electives	3
Subtotal	15

Total Hours in the Program: 120

Appendix I:
NBRC Matrix

NBRC Therapist Combined Detailed Content Outline Comparison with Proposed Curriculum (Program #_____)	List Course Number(s)
I. PATIENT DATA	
A. Evaluate Data in the Patient Record	

1. Patient history , for example,
    • history of present illness (HPI) • orders   • medication reconciliation   • progress notes
    • DNR status / advance directives   • social, family, and medical history
	RC130, RC175

2. Physical examination relative to the cardiopulmonary system	RC125, RC130, RC175
3. Lines, drains, and airways, for example, • chest tube • artificial airway •vascular lines	RC150, RC215, RC216, RC235, RC265

4. Laboratory results, for example,
    • CBC   • electrolytes   • coagulation studies
    •sputum culture and sensitivities   • cardiac biomarkers
	BIO203, RC200, RC235, RC265

5. Blood gas analysis and/or hemoximetry (CO-oximetry) results	RC150, RC195, RC235, RC265, RC275
6. Pulmonary function testing results, for example •spirometry •lung volumes •DLCO	RC110, RC230, RC285
7. 6-minute walk test results	RC180, RC230
8. Imaging study results, for example, • chest radiograph • CT scan • ultrasonography and/or echocardiography • PET scan • ventilation / perfusion scan	RC125, RC130, RC200, RC195, RC 35, RC265, RC275
9. Maternal and perinatal / neonatal history, for example, • APGAR scores • gestational age • L / S ratio	RC224, RC285
10. Sleep study results. for example, •apnea-hypopnea index (AHI)	RC180, RC230, RC 85
11. Trends in monitoring results	
a. fluid balance	RC 200, RC 235, RC 265, RC 275
b. vital signs	RC125, RC130, RC150, RC175, RC195, RC235, RC265, RC275
c. intracranial pressure	RC200, RC210
d. ventilator liberation parameters	RC160, RC235, RC265, RC275
e. pulmonary mechanics	RC125, RC130, RC160
f. noninvasive, for example, • pulse oximetry • capnography • transcutaneous	RC125, RC130, RC160, RC224, RC175, RC195, RC235, RC265, RC275

NBRC Therapist Combined Detailed Content Outline Comparison with Proposed Curriculum (Program #_____)	List Course Number(s)
g. cardiac evaluation/monitoring results, for •ECG •hemodynamic parameters	RC200, RC235, RC265, RC275
12. Determination of patient's pathophysiological state	RC125, RC130, RC180
B. Perform Clinical Assessment	
1. Interviewing a patient to assess	
a. level of consciousness and orientation, emotional state, and ability to cooperate	RC125, RC130, RC175, RC195
b. level of pain	RC125, RC130, RC175, RC195
c. shortness of breath, sputum production, and exercise tolerance	RC125, RC130, RC175, RC195
d. smoking history	RC125, RC130, RC180, RC175, RC195
e. environmental exposures	RC125, RC130, RC180, RC175, RC195
f. activities of daily living	RC130, RC230
g. learning needs, for example, • literacy • social/culture • preferred learning style	HS100, HS200, RC130, RC290
2. Performing inspection to assess	
a. general appearance	RC125, RC130, RC 175, RC 195, RC 235, RC 265, RC 275
b. characteristics of the airway, for example, • patency • Mallampati classification • tracheal shift	RC 150, RC 235, RC 265, RC 275
c. cough, sputum amount and character	RC125, RC130, RC150, RC195, RC235, RC265, RC275
d. status of a neonate, for example • Apgar score • gestational age	RC224, RC225, RC285
e. skin integrity, for example, •pressure ulcers •stoma site	RC130, RC150, RC235, RC265, RC275
3. Palpating to assess	
a. pulse, rhythm, intensity	RC125, RC130, RC225, RC175, RC195
b. accessory muscle activity	RC125, RC130, RC175, RC195, RC235, RC265, RC275

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	RC125, RC130, RC175, RC195
4. Performing diagnostic chest percussion	RC125, RC130, RC175, RC195
5. Auscultating to assess	
a. breath sounds	RC125, RC130, RC150, RC160, RC175, RC195, RC235, RC 265, RC275, RC285
b. heart sounds and rhythm	RC125, RC130, RC200, RC175, RC195
c. blood pressure	RC125, RC130
6. Reviewing a chest radiograph to assess	
a. quality of imaging, for example, • patient positioning • penetration • lung inflation	RC125, RC130, RC200, RC235, RC265, RC275
b. presence and position of airways, lines, and drains	RC125, RC130, RC235, RC265, RC275
c. presence of foreign bodies	RC130, RC226
d. heart size and position	RC125, RC130, RC180, RC235, RC265, RC275
e. presence of, or change in,	
(i) cardiopulmonary abnormalities for example, • pneumothorax • pleural effusion • pulmonary edema • consolidation • pulmonary edema • pulmonary artery size	RC130, RC180, RC235, RC265, RC275
(ii) diaphragm, mediastinum, and/or trachea	RC125, RC130, RC235, RC265, RC275
C. Perform Procedures to Gather Clinical Information	
1. 12-lead ECG	RC200, RC215, RC216
2. Noninvasive monitoring, for example, • pulse oximetry • capnography • transcutaneous	RC125, RC130, RC150, RC 160, RC224
3. Peak flow	RC125, RC130, RC180, RC226, RC230, RC285
4. Mechanics of spontaneous ventilation linked to tidal volume, minute volume, and maximal inspiratory pressure, and vital capacity	RC125, RC130, RC160, RC235, RC265, RC275
5. Blood gas sample collection	RC150, RC195, RC235, RC265, RC275

NBRC Therapist Combined Detailed Content Outline Comparison with Proposed Curriculum (Program #_____)	List Course Number(s)
6. Blood gas analysis and/or hemoximetry (CO-oximetry)	RC150, RC195, RC235, RC265, RC275
7. Oxygen titration with exercise	RC230, RC285
8. Cardiopulmonary calculations, for example, • P(A-a)O_2 • V_D / V_T • P / F • OI	RC110, RC150, RC160, RC180, RC200, RC224, RC226, RC235, RC265, RC275
9. Hemodynamic monitoring	RC200, RC215, RC265, RC275
10. Pulmonary compliance and airways resistance	RC110, RC160, RC215, RC216, RC235, RC265, RC275
11. Plateau pressure	RC110, RC160, RC215, RC216, RC265, RC275
12. Auto-PEEP determination	RC160, RC215, RC216, RC265, RC275
13. Spontaneous breathing trial (SBT)	RC160, RC215, RC216, RC235, RC265, RC275
14. Apnea monitoring	RC224, RC285
15. Apnea test (brain death determination)	RC200, RC215, RC216
16. Overnight pulse oximetry	RC180, RC230
17. CPAP / NPPV titration during sleep	RC160, RC180, RC285
18. Cuff management, for example, •tracheal •laryngeal	RC150, RC235, RC265, RC275
19. Sputum induction	RC120, RC125, RC130
20. Cardiopulmonary stress testing	RC230, RC285
21. 6-minute walk test	RC180, RC230, RC285
22. Spirometry outside or inside a pulmonary function laboratory	RC230, RC285
23. DLCO inside a pulmonary function laboratory	RC110, RC230, RC285
24. Lung volumes inside a pulmonary function laboratory	RC230, RC285
25. Tests of respiratory muscle strength- MIP and MEP	RC125, RC130, RC180, RC230, RC235, RC265, RC275, RC285
26. Therapeutic bronchoscopy	RC150, RC200, RC214, RC215, RC235, RC265, RC275, RC285

NBRC Therapist Combined Detailed Content Outline Comparison with Proposed Curriculum (Program #_____)	List Course Number(s)
D. Evaluate Procedure Results	
1. 12-lead ECG	RC200, RC235, RC265
2. Noninvasive monitoring, for example, • pulse oximetry • capnography • transcutaneous	RC120, RC130, RC224, RC225, RC195, RC235, RC265
3. Peak flow	RC130, RC240, RC275
4. Mechanics of spontaneous ventilation linked to tidal volume, minute volume, maximal inspiratory pressure, and vital capacity	RC130, RC160, RC240, RC235, RC265
5. Blood gas analysis and/or hemoximetry (CO-oximetry)	RC130, RC150, RC195, RC235, RC265
6. Oxygen titration with exercise	RC120, RC240, RC275
7. Cardiopulmonary calculations, for example, • $P(A-a)O_2$ • V_D / V_T • P / F • OI	RC110, RC150, RC160, RC226, RC215
8. Hemodynamic monitoring	RC110, RC200, RC235, RC265
9. Pulmonary compliance and airways resistance	RC110, RC160, RC215, RC195, RC235, RC265
10. Plateau pressure	RC110, RC160, RC215, RC195, RC235, RC265
11. Auto-PEEP	RC160, RC215, RC195, RC235, RC265
12. Spontaneous breathing trial (SBT)	RC160, RC215, RC235, RC265
13. Apnea monitoring	RC224, RC275
14. Apnea test (brain death determination)	RC200
15. Overnight pulse oximetry	RC180, RC240, RC275
16. CPAP / NPPV titration during sleep	RC160, RC215, RC195, RC235, RC265
17. Cuff status, for example, •laryngeal •tracheal	RC150, RC195, RC235, RC 265
18. Cardiopulmonary stress testing	RC240, RC275
19. 6-minute walk stress testing	RC240, RC275
C20. Spirometry outside or inside a pulmonary function laboratory	RC240, RC275

NBRC Therapist Combined Detailed Content Outline Comparison with Proposed Curriculum (Program #_____)	List Course Number(s)
22. DLCO inside a pulmonary function laboratory	RC110, RC240, RC275
23.Tests of respiratory muscle strength-MIP and MEP	RC130, RC160, RC235, RC265
E. Recommend Diagnostic Procedures	
1. Testing for tuberculosis	RC180
2. Laboratory tests, for example, • electrolytes • CBC •coagulation studies •sputum culture and sensitives •cardiac biomarkers	RC130, RC200, RC235, RC265
3. Imaging studies	RC130, RC150, RC160. RC180, RC224, RC226
4. Bronchoscopy	RC150, RC200, RC215, RC275
a. diagnostic	RC150, RC200 RC215, RC275
b. therapeutic	RC150, RC200, RC215, RC275
5. Bronchoalveolar lavage (BAL)	RC200, RC215, RC265, RC275
6. Pulmonary function testing	RC240, RC275
7. Noninvasive monitoring, for example, • pulse oximetry • capnography • transcutaneous	RC120, RC130, RC150, RC160, RC224, RC226, RC175, RC195, RC235, RC265
8. Blood gas and/or hemoximetry (CO-oximetry)	RC130, RC150, RC160, RC215, RC195, RC235, RC265
9. ECG	RC200, RC235, RC265
10. Exhaled gas analysis, for example, • CO_2 • CO • FENO	RC150, RC240
11. Hemodynamic monitoring	RC110, RC200, RC235, RC265
12. Sleep studies	RC180, RC240, RC275
13. Thoracentesis	RC180, RC215
II. TROUBLESHOOTING AND QUALITY CONTROL OF DEVICES, AND INFECTION CONTROL	
A. Assemble and Troubleshoot Equipment	
1. Medical gas delivery interfaces, for example, •mask •cannula •heated high-flow nasal cannula	RC120, RC165, RC175, RC195, RC235, RC265

NBRC Therapist Combined Detailed Content Outline Comparison with Proposed Curriculum (Program #_____)	List Course Number(s)
2. Long-term oxygen therapy	RC180, RC240, RC275
3. Medical gas delivery, metering, and/or clinical analyzing devices, for example, •concentrator •liquid system •flowmeter •regulator •gas cylinder •blender •air compressor •gas analyzers	RC120, RC165, RC175
4. CPAP/NPPV with patient interfaces	RC160, RC180, RC215, RC195, RC235, RC265
5. Humidifiers	RC120, RC165, RC175
6. Nebulizers	RC120, RC165, RC175
7. Metered-dose inhalers, spacers, and valved holding chambers	RC120, RC165, RC175
8. Dry powder inhalers (DPI)	RC120, RC165, RC175
9. Resuscitation equipment, for example, •self-inflating resuscitator •flow-inflating resuscitator •AED	RC120, RC150, RC224, RC225, RC195, RC235, RC265
10. Mechanical ventilators	RC160, RC215, RC195, RC235, RC265
11. Intubation equipment	RC150, RC224, RC225, RC195, RC235, RC265
10. Artificial airways	RC150, RC224, RC225, RC195, RC235, RC265
12. Suctioning equipment, for example, • regulator • canister • tubing • catheter	RC150, RC195, RC235, RC265
14. Blood analyzer. for example, • hemoximetry (CO-oximetry) • point-of-care • blood gas	RC150, RC195, RC235, RC 265
15. Patient breathing circuits	RC160, RC215, RC195, RC235, RC265
16. Hyperinflation devices	RC120, RC165, RC175
17. Secretion clearance devices	RC120, RC225, RC226, RC165, RC175
18. Heliox delivery device	RC120, RC226
19. Portable spirometer	RC130, RC160, RC240
20. Testing equipment in a pulmonary function laboratory	RC240, RC275
21. Pleural drainage	RC180, RC215, RC235, RC265

NBRC Therapist Combined Detailed Content Outline Comparison with Proposed Curriculum (Program #_____)	List Course Number(s)
22.. Noninvasive monitoring, for example, 　• pulse oximeter　　• capnometer　　• transcutaneous	RC130, RC150, RC160, RC224, RC175, RC195, RC235, RC265
23. Bronchoscopes and light sources	RC200, RC215, RC275
24. Hemodynamic monitoring devices	
a. pressure transducers	RC200
b. catheters, for example, 　• arterial　　• pulmonary artery	RC150, RC200
B. Ensure Infection Prevention	
1. Adhering to infection prevention policies and procedures, for example, 　• Standard Precautions　　• isolation　　•donning/doffing	RC130, RC165, RC175, RC195, RC235, RC265
2. Adhering to disinfection policies and procedures	RC130, RC165, RC175, RC195, RC235, RC265
3. Proper handling of biohazardous materials	RC150, RC165, RC175, RC195, RC235, RC265
C. Perform Quality Control Procedures	
1. Blood analyzers	RC150, RC195, RC235, RC265
2. Gas analyzers	RC120, RC175
3. Pulmonary function equipment for testing	RC240, RC275
a.　spirometry results	RC240, RC275
b.　lung volumes	RC240, RC275
c.　diffusing capacity (DLCO)	RC240, RC275
4. Mechanical ventilators	RC160, RC215, RC195, RC235, RC265
5. Noninvasive monitors	RC160, RC215, RC195, RC235, RC265
III. INITIATION AND MODIFICATION OF INTERVENTIONS	
A. Maintain a Patient Airway Including the Care of Artificial Airways	
1. Proper positioning of a patient	RC150, RC195, RC235, RC265

NBRC Therapist Combined Detailed Content Outline Comparison with Proposed Curriculum (Program #_____)	List Course Number(s)
2. Recognition of a difficult airway	RC150, RC215, RC235, RC265
3. Establishing and managing a patient's airway	
a. nasopharyngeal airway	RC150, RC195
b. oropharyngeal airway	RC150, RC195
c. esophagealtracheal tubes / supraglottic airways	RC150, RC224, RC225
d. endotracheal tube	RC150, RC224, RC225, RC195, RC235, RC265
e. tracheostomy tube	RC150, RC225, RC226, RC195, RC235, RC265
f. laryngectomy tube	RC150
g. speaking valves	RC150
h. devices that assist with intubation, for example, •endotracheal tube exchanger •video laryngoscopy	RC150, RC215, RC235, RC265
4. Performing tracheostomy care	RC150, RC225, RC175, RC195, RC235, RC265
5. Exchanging artificial airways	RC150, RC215, RC235, RC265
6. Maintaining adequate humidification	RC120, RC160, RC175, RC195, RC235, RC265
7. Initiating protocols to prevent ventilator-associated infections	RC130, RC160, RC180, RC195, RC235, RC265
8. Performing extubation	RC150, RC195, RC235, RC265
B. Perform Airway Clearance and Lung Expansion Techniques	
1. Postural drainage, percussion, or vibration	RC120, RC175
2. Suctioning, for example, • nasotracheal • oropharyngeal	RC150, RC175, RC195
3. Mechanical devices, for example, • high-frequency chest wall oscillation • vibratory PEP • intrapulmonary percussive ventilation • insufflation / exsufflation	RC120, RC225, RC226, RC175, RC195
4. Assisted cough, for example, • huff • abdominal thrust	RC120, RC175

NBRC Therapist Combined Detailed Content Outline Comparison with Proposed Curriculum (Program #_____)	List Course Number(s)
5. Hyperinflation therapy	RC120, RC175
6. Inspiratory muscle training	RC240, RC275
C. Support Oxygenation and Ventilation	
1. Initiating and adjusting oxygen therapy	RC120, RC160, RC165, RC175, RC195, RC235, RC265
2. Minimizing hypoxemia, for example, • patient positioning • secretion removal	RC150, RC175, RC195, RC235, RC265
3. Initiating and adjusting mask or nasal CPAP	RC160, RC180, RC195, RC235, RC265
4. Initiating and adjusting mechanical ventilation settings	
a. continuous mechanical ventilation	RC160, RC215, RC235, RC265
b. noninvasive ventilation	RC160, RC215, RC195, RC235, RC265
c. high-frequency ventilation	RC215, RC275
d. alarms	RC160, RC215, RC195, RC235, RC265
5. Recognizing and correcting patient-ventilator dyssynchrony	RC160, RC215, RC235, RC265
6. Utilizing ventilator graphics	RC160, RC215, RC235, RC265
7. Performing lung recruitment maneuvers	RC215, RC235, RC265
8. Liberating patient from mechanical ventilation	RC160, RC215, RC235, RC265
D. Administer Medications and Specialty Gases	
1. Aerosolized preparations	RC120, RC140, RC175, RC195, RC235, RC265
a. antimicrobials	RC140, RC175, RC195, RC235, RC265
b. pulmonary vasodilators	RC140, RC175, RC195, RC235, RC265
c. brochodilators	RC120, RC140, RC175, RC195, RC235, RC265
d. mucolytics/proteolytics	RC120, RC140, RC175, RC195, RC235, RC265

NBRC Therapist Combined Detailed Content Outline Comparison with Proposed Curriculum (Program #_____)	List Course Number(s)
e. steroids	RC120, RC140, RC175, RC195, RC235, RC265
2.. Endotracheal instillation	RC224, RC225, RC275
3. Specialty gases, for example, • heliox • inhaled NO	RC120, RC224, RC226
E. Ensure Modifications are Made to the Respiratory Care Plan	
1. Treatment termination, for example, • life-threatening adverse event	RC120, RC140, RC175, RC195, RC235, RC265
2. Recommendations	
a. starting treatment based on patient response	RC120, RC130, RC140, RC165, RC175
b. treatment of pneumothorax	RC180, RC200, RC215
c. adjustment of fluid balance	RC200, RC195, RC235, RC265
d. adjustment of electrolyte therapy	RC200, RC195, RC235, RC265
e. insertion or change of artificial airway	RC150, RC224, RC226, RC195, RC235, RC265
f. liberating from mechanical ventilation	RC160, RC215, RC235, RC265
g. extubation	RC150, RC195, RC235, RC265
h. discontinuing treatment based on patient response	RC120, RC130, RC140, RC150, RC175, RC195, RC235, RC265
i. consultation from a physician specialist	RC120, RC150, RC160, RC180, RC200, RC215, RC195, RC235, RC265
3. Recommendations for changes	
a. patient position	RC120, RC160, RC175, RC195, RC235, RC265
b. oxygen therapy	RC120, RC225, RC165, RC175, RC195, RC235, RC265
c. humidification	RC120, RC160, RC175, RC195
d. airway clearance	RC120, RC160, RC195, RC235, RC265
e. hyperinflation	RC120, RC175

NBRC Therapist Combined Detailed Content Outline Comparison with Proposed Curriculum (Program #_____)	List Course Number(s)
f. mechanical ventilation	RC160, RC215, RC235, RC265
4. Recommendations for pharmacologic interventions	
a. bronchodilators	RC120, RC180, RC140, RC175, RC195, RC235, RC265
b. anti-inflammatory drugs	RC140, RC180, RC175, RC195, RC235, RC265
c. mucolytics and proteolytics	RC140, RC180, RC175, RC195, RC235, RC265
d. Aerosolized antibiotics	RC140, RC180, RC175, RC195, RC235, RC265
e. Inhaled pulmonary vasodilators	RC140, RC180, RC175, RC195, RC235, RC265
f. cardiovascular	RC200, RC175, RC195, RC235, RC265
g. antimicrobials	RC140, RC175, RC195, RC235, RC265
h. sedatives and hypnotics	RC140, RC195, RC235, RC265
i. analgesics	RC140, RC195, RC235, RC265
i. narcotic antagonists	RC140, RC195, RC235, RC265
j. benzodiazepine antagonists	RC140, RC195, RC235, RC265
l. neuromuscular blocking agents	RC140, RC195, RC235, RC265
m. diuretics	RC140, RC195, RC235, RC265
n. surfactants	RC224, RC225, RC275
o. changes to drug, dosage, administration, frequency, mode, or concentration	RC140, RC175, RC195, RC235, RC265
F. Utilize Evidence-Based Practice	
1. Classification of disease severity	RC180, RC175, RC195, RC235, RC265
2. Recommendations for changes in a therapeutic plan when indicated	RC180, RC175, RC195, RC235, RC265
3. Application of guidelines, for example, • ARDSNet • NAEPP •GOLD	RC180, RC215, RRC175, RC195, RC235, RC265
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	RC120, RC200, RC224, RC225, RC175, RC195, RC235, RC265
b. disaster management	RC240
c. medical emergency team (MET) / rapid response team	RC200, RC195, RC235, RC265
2. Interprofessional communication	RC130, RC165, RC175, RC195, RC235, RC265
3. Patient transport	
a. land / air between hospitals	RC224, RC275
b. within a hospital	RC160, RC215, RC175, RC195, RC235, RC265
H. Assist a Physician / Provider in Performing Procedures	
1. Intubation	RC150, RC195, RC235, RC265
2. Bronchoscopy	RC150, RC200, RC215, RC235, RC265, RC275
3. Specialized bronchoscopy, for example, • endobronchial ultrasound (EBUS) • navigational bronchoscopy (ENB)	RC200, RC275
4. Thoracentesis	RC180, RC200, RC215
5. Tracheostomy	RC150, RC215
6. Chest tube insertion	RC200, RC215
7. Insertion of arterial or venous catheters	RC150, RC200, RC215
8. Moderate (conscious) sedation	RC140, RC200, RC215
9. Cardioversion	RC200
10. Withdrawal of life support	RC200, RC15, RC235, RC265
I. Conduct Patient and Family Education	
1. Safety and infection control	RC130, RC165, RC175, RC195, RC235, RC265

NBRC Therapist Combined Detailed Content Outline Comparison with Proposed Curriculum (Program #_____)	List Course Number(s)
2. Home care and related equipment	RC120, RC240, RC275
3. Lifestyle changes, for example, •smoking cessation •exercise	RC180, RC240, RC290
4. Pulmonary rehabilitation	RC240, RC290, RC275
5. Disease/ condition management, for example, •asthma •COPD •CF •tracheostomy care •ventilator dependent	RC150, RC180, RC240, RC290