Introduction to 2020 Studies of Human Resources

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Study Purpose and Methods

Primary objectives for human resources studies conducted by the American Association for Respiratory Care (AARC) were to document information about the number of working therapists, venues of practice, demographic characteristics of the workforce, and the compensation they received.

The studies sampled three groups, which were a group of (1) individual therapists, (2) technical directors of hospital departments, and (3) program directors of education programs. A report was written that summarized survey results from each of these groups.

Directors of hospital departments and education programs were encouraged to also respond to the survey for individual therapists. This method increased the total number of responses but led to oversampling of these two groups within the survey for individual therapists. Directors of hospital departments and education programs were encouraged to recruit other local therapists as well.

The Organization of these Reports

Each of the three survey reports are similarly organized. A **Summaries** section provides highlights observed in the results along with short-term trends since the last study. Following a brief introduction, a **Methods** section describes how each population was sampled; the size of each sample, and the way data were analyzed. Survey responses were captured by direct electronic means for each study while using the SurveyMonkey® platform. The **Results** section of each report emphasized figures describing survey responses when possible with links to more detailed frequency tables in the **Appendices** section.

Historic Trends

Population Projections

The population of licenses held by respiratory therapists has shown uninterrupted growth over the 28 years that the AARC has been tracking the numbers, which is displayed in Figure 1. These projections have likely become more accurate since they recently have been based on direct counts from state licensing agencies. Some therapists are licensed in more than one state, so a low level of double-counting has been expected among these population estimates. However, these are the best numbers available to the AARC about the trend in the size of the licensed therapist population. Another fact that Figure 1 reveals is that the growth has been linear in nature over nearly three decades. Projecting future populations is simplified by this fact, which is why the x and y scales are extended.

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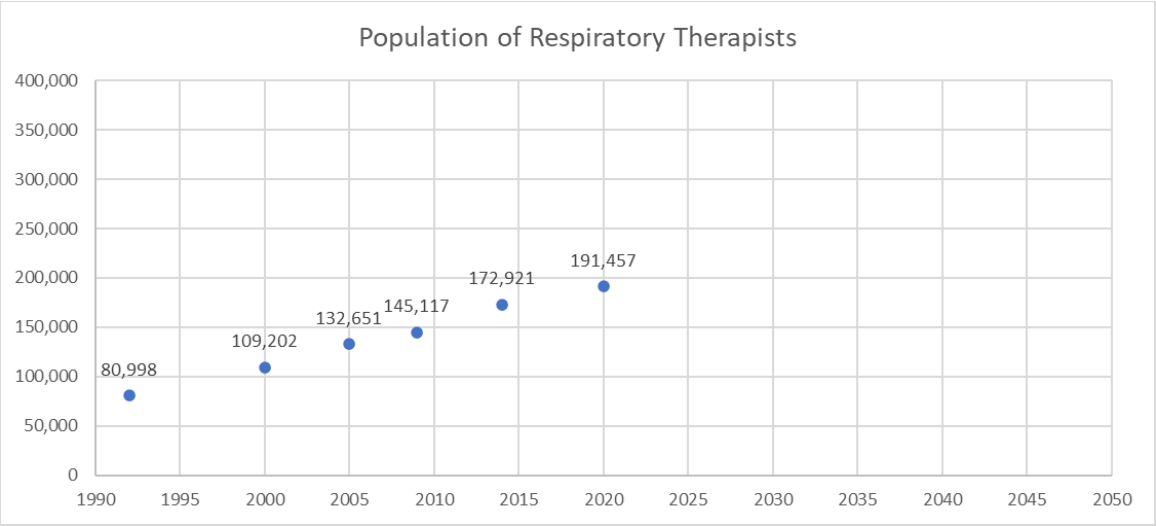

Figure 1. 28-Year Population Trend in Therapist Licenses

Vacant Staff Therapist Jobs

Technical directors in acute care hospitals reported the number of vacant FTEs associated with the staff therapist job position. A trend is described in Table 1 for three points over eleven years. In 2009, the majority of respondents had no vacant FTEs for the staff therapist position as indicated by a median value of zero. However, many hospitals still had at least one vacant FTE as indicated by a mean value that was close to one. Five years later, the mean had fallen further below one while the median remained at zero. In 2020, directors reported an increase in vacant positions such that the mean was close to two and the median was one.

Table 1. Trend in Vacant Staff Therapist FTEs in Each Acute Care Hospital

Year	N	Mean	Median
2009	776	1.08	0.00
2014	558	0.89	0.00
2020	291	1.93	1.00

Staff Therapist FTEs

Nationwide there was a trend described in Table 2 toward more FTEs within acute care hospitals for staff therapists. When coupled with the information from Table 1, previous years have been associated with more therapists working in a typical acute care hospital, which has few vacant staff therapist positions to fill. More recently results indicate fewer positions with slightly more vacancies.

Table 2. Trend in FTEs for Staff Therapists in Each Acute Care Hospital

Year	N	Mean	Median
2009	776	24.3	15
2014	558	29.9	18
2020	291	25.5	12

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Graduations

We included the sizes of the education program populations and sample sizes in Table 3 because the supply of therapists entering the profession has been affected by the number of (1) programs and (2) graduates from a typical program.

Table 2 documented a decrease in budgeted positions for therapists over the last 6 years. While evaluating Table 3, the increase in programs and graduates for the years between 2012 and 2014 seemed to follow an economic recession that started in 2008. Another economic contraction occurred in 2020 with the COVID pandemic, but a full-employment-economy was underway in 2018 and 2019 so something else was already exerting a negative impact on the numbers of programs and graduates during those years.

Table 3. Trend in RRT-Eligible Graduates from Education Programs

Study	Year	Mean	Median
2009 Population N= 359 Sample N=242	2007	15.4	14
	2008	16.5	14
	2009	17.5	14
2014 Population N= 417 Sample N=254	2012	18.0	15
	2013	18.3	15
	2014	18.5	16
2020 Population N= 407 Sample N=212	2018	15.3	13
	2019	16.4	14
	2020	15.7	13

Finding a Job

When considering information in Table 1 and Table 3 together, programs have been graduating fewer therapists into job markets each year while vacant positions in hospitals have increased. Additionally, technical directors reported an increase in the average time needed to recruit respiratory therapists in the past fiscal year.

Compensation

Information collected from individual therapists about their total compensation in 2019 was used to produce a compensation calculator. Factors in the calculator were based on results of a procedure that incorporated multiple regression and analysis of covariance. These statistical techniques permitted evaluation of several factors considered together, which provided useful statistical control.

We have represented these results in a spreadsheet that was included with the report package. The spreadsheet provides opportunities to insert information about an individual that will yield a result based on the average associated with each factor that is entered. We expect that those who are responsible for hiring therapists will find the spreadsheet useful as a compensation benchmarking tool since (1) several factors have been incorporated into the model, (2) the factors have been documented to exert statistically significant effects, and (3) the coefficients in the model were informed by a large sample (N=8,206) of therapists.

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Demographics

Gender

The respiratory therapy profession has been one that has involved a strong majority of women. The trend over the last 28 years that is described in Table 4 has been one that has seen an increase in the percentage of women in the population.

*Table 4. Percentages of Therapists by Gender**

Year	Female	Male
1992	62	38
2000	64	36
2005	60	40
2009	62	38
2014	67	33
2020**	70	28

*Percentages were only based on those who responded to this question.
** The remaining respondents specified being transgender or preferred not to say.

Academic Achievement

The percentage of therapists without a college degree has shrunk in 28 years according to Table 5. The percentage of therapists who have achieved an associate degree has increased to about 50% over the past fifteen years while the percentage earning a Baccalaureate degree also increased but plateaued at about 32%.

Respiratory therapy technical directors indicated that, in general, increasing the percentage of baccalaureate-prepared therapists employed in their department was not a high priority which may be a factor in whether therapists pursue the degree. If this seems like news, then it is because the population of technical directors who were not among AARC members had not been prompted with this question before. Refer to the report summarizing responses from acute care hospitals for details.

*Table 5. Percentages by Academic Achievement**

Highest Academic Level Achieved	2020	2014	2009	2005	2000	1992
No High School Diploma	0.1%	.0%	.0%	.0%	Not surveyed	0.2%
High School/GED	0.7%	0.6%	0.7%	0.6%	2.5%	13.1%
Some College	4.0%	5.9%	8.9%	9.3%	15.5%	28.4%
Associate	51.3%	53.0%	44.1%	43.3%	51.2%	42.0%
Baccalaureate	31.9%	30.9%	32.8%	31.8%	24.6%	14.0%
Masters	10.9%	8.7%	12.5%	11.4%	5.1%	2.0%
Doctorate	1.2%	0.9%	1.0%	1.2%	0.6%	0.3%

*Percentages were only based on those who responded to this question.

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NBRC Credentials

In describing the 28-year trend, there were notably higher percentages of respiratory therapists who have achieved credentials in Table 6, especially when considering that fewer than half of therapists reported achieving either the CRT or RRT credentials in 1992. Since the mid-2000s, the percentages of the study samples that have achieved the RRT credential have been in the 80s.

It would be a mistake to assume that the level of RRT credentialing in the population was 83% in 2020. We know that hospital technical directors and those who teach in education programs were oversampled relative to the general population. Technical directors and educators were more likely to have achieved the RRT credential than the general population of therapists.

*Table 6. Percentages of Responses by NBRC Credentials**

Credential	2020	2014	2009	2005	2000	1992
CRT	51.7	60.5	69.3	67.3	73.5	37.9
RRT	82.8	80.2	85.3	80.9	68.5	36.9
RRT-ACCS	8.2	3.6				
Neonatal/Pediatric Specialist (CRT-NPS or RRT-NPS)	14.2	13.8	16.8	14.8	9.0	
Sleep Disorders Specialist (CRT-SDS or RRT-SDS)	1.1	0.8	0.3			
CPFT	6.0	7.1	14.2	12.6	9.6	0.3
RPFT	3.0	3.0	6.1	5.8	3.7	0.3

*Because respondents could have earned more than one credential, these columns will not sum to 100%.

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