

Where Are Ontario's Respiratory Therapists Working?

Où travaillent les thérapeutes respiratoires de l'Ontario?



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Abstract

Registered respiratory therapists (RRTs) aid in the diagnosis and treatment of respiratory illness and cardiopulmonary disorders, conditions that are increasingly being managed in settings other than the hospital sector. However, analysis of a longitudinal data set of Ontario's RRTs (2,903) from 1996 to 2007 demonstrates that the majority of RRTs work full-time in the hospital sector, where retention is high. Despite a policy direction encouraging the shift of the site of care from the hospital sector to the community/home, this has had little impact on where RRTs work, raising the question of who is providing respiratory services in the community.

Résumé

Les thérapeutes respiratoires autorisés (TRA) apportent leur aide dans le diagnostic et le traitement des maladies respiratoires et cardiopulmonaires, des états de santé qui sont de plus en plus traités dans des établissements autres que le secteur hospitalier. Cependant, l'analyse d'un ensemble de données longitudinales sur les TRA de l'Ontario (2903 personnes) de 1996 à 2007 démontre que la majorité des TRA travaillent à temps plein dans le secteur hospitalier, où le taux de conservation du personnel est élevé. Malgré une directive politique visant à favoriser le transfert du point de service du secteur hospitalier vers le secteur communautaire ou domiciliaire, il y a eu peu de changement dans le lieu de travail des TRA, ce qui soulève la question à savoir qui offre des services respiratoires en milieu communautaire.

MANY HEALTHCARE PROFESSIONAL DISCIPLINES ARE FACED WITH MANAGING AN increased demand for services coupled with perceived shortages of professionals in the workforce (Federal/Provincial/Territorial Advisory Committee on Health Delivery and Human Resources 2009), alongside shifts in which care is delivered from the hospital to the community (Baranek et al. 2004; CIHI 2010; Deber 2004; Health Council of Canada 2011). The Canadian Institutes for Health Research (CIHR) Team in Community Care and Health Human Resources (CIHR Team) at the University of Toronto is conducting a series of linked projects to study resource shifts of nurses, allied health and rehabilitation professionals across sectors, with an emphasis on shifts from the hospital to the community, and to analyze the factors associated with retention of these healthcare professionals, both within their profession and within their sector. This case study focuses on Ontario's registered respiratory therapists (RRTs). We report descriptive trends over time for RRTs, breaking down the findings by employment sectors (e.g., hospital, community and other) and employment status (e.g., full-time, part-time and casual).

Why Focus on Respiratory Therapy?

The delivery of healthcare is increasingly becoming complex and dependent on technology and allied health professionals (CIHI 2004). While previous labour studies have focused on

nurses and doctors, there is now a growing recognition of the importance of additional data-gathering activities to track the labour supply trends of other healthcare professions (El-Jardali and Fooks 2005).

Respiratory therapy has emerged as a health profession to manage technological innovations that aid in the diagnosis and treatment of respiratory illness and cardiopulmonary disorders (CRTO 2010). The prevalence and the incidence of cardiovascular disease and respiratory disease – as well as other chronic diseases – continue to increase as the population ages (CIHI et al. 2001). In Ontario, RRTs have traditionally worked in hospitals; however, new technologies and professional opportunities now support the delivery of care outside the hospital, and encourage the development of new areas of specialization within the profession (e.g., cardiopulmonary perfusionists, physician assistants, anaesthesia assistants and anaesthesia technologists) (CRTO 2010). RRTs potentially can work in a number of different sectors, including hospitals (e.g., secondary and direct patient care), the community (e.g., health promotion and disease prevention) and the home (e.g., disease management and oxygen therapy) (Winnipeg Regional Health Authority 2004).

Methods

Respiratory therapy in Ontario is a regulated health profession (Government of Ontario 1991a,b). In order to practise, Ontario's RRTs are required to register annually with the College of Respiratory Therapists of Ontario (CRTO); other provinces in Canada have similar regulatory structures (CIHI 2007). Each CRTO registrant initially receives a registration number that is used in subsequent registration periods. Registrants complete an annual registration form, which is electronically recorded into the CRTO's administrative database.

The CRTO's yearly administrative databases were merged using the unique registration numbers to create an anonymized longitudinal data set for the 2,903 RRTs registered in Ontario at any time for the period from 1996 to 2007. The results presented are based on the analysis of this 12-year longitudinal data set. The variables included demographic information, e.g., number of RRTs, age and education. Registrants were grouped into four age categories, 20–34 years of age, 35–44 years of age, 45–54 years of age and 55–80 years of age. Employment characteristics included employment sector, employment status and number of employers. Employment sectors were defined as Hospital (e.g., general hospital, paediatric hospital, rehabilitation hospital, long-term care hospital), Community (e.g., provincial home care program, home care company, community service) and Other (e.g., own private practice, private lab or clinic, educational institution, manufacturer/distributor/retailer, consulting firm, regulating body, professional association, government). Frequencies were calculated to determine trends over time.

Retention was determined by calculating stickiness across settings. "Stickiness" is a proxy for differentiating the attractiveness of various employment factors; in this paper, we examine employment sectors – as defined above – and employment status defined as Full-time (FT), Part-time (PT) or Casual, as reported by registrants on the annual registration forms.

Stickiness is defined as the transitional probability of a RRT working in a given employ-

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ment sector (or employment status) in year “t” and remaining in the same employment sector (or employment status) in year “t+1” (Alameddine et al. 2005). The formula for stickiness is expressed as follows:

$$\text{Stickiness}_{t \text{ to } t+1} = \left[\frac{N_{y,t\&t+1}}{N_{y,t}} \right] \times 100$$

The number of RRTs working in employment sector (or employment status) “y” in year “t” is denoted as “ $N_{y,t}$ ”; the number of RRTs working in employment sector (or employment status) “y” in year “t+1” is expressed as “ $N_{y,t+1}$ ”; and the number of RRTs working in employment sector (or employment status) “y” in both years “t” and “t+1” is denoted as “ $N_{y,t\&t+1}$ ”.

Who Are Ontario's Registered Respiratory Therapists?

Over the 12-year study period, the number of RRTs registered with the CRTO increased from 1,628 (1996) to 2,300 (2007), representing a 41.3% increase. During this same period, 85% to 95% of the registrants were both eligible and working in respiratory therapy in Ontario.

An examination of the age trends over time reveals that the number and proportion of the youngest age category (20–34 years) decreased from 52.6% to 31.9%, while all other age categories increased.

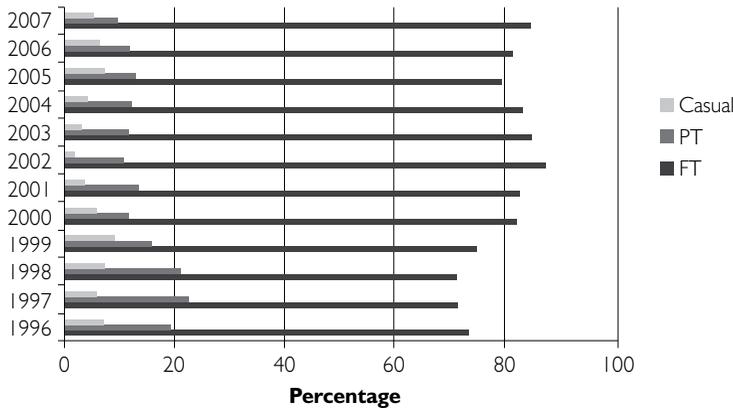
The educational requirement for entry to practice for RRTs is a diploma from a recognized respiratory therapy program. The percentage of RRTs reporting diploma as their educational level decreased from 67.8% in 1996 to 61.9% in 2007. While an advanced-level education, such as a university degree, is not required to practise as a RRT, 34.5% of CRTO registrants in 2007 reported completing a bachelor's degree.

RRTs work predominantly in the hospital sector, with the proportion ranging from 80.4% to 84.6% (Table 1, <http://www.longwoods.com/content/2617>). RRTs working in the community sector decreased from 13.9% to 9.4%. Approximately 8% of hospital-employed RRTs provide home care service, primarily being responsible for the set-up of oxygen services in a patient's home.

Employment status as reported by registrants indicated that overall, 61.3% to 70.4% of the RRTs were employed FT, while 20.3% to 24.3% reported working PT. Casual employment fluctuated with a high of 14.5% in 1999 and a low of 7.8% in 2002. This variability in casual employment is not surprising, as employers often use this type of employment to cover short periods of time when there is an increased need for services (Baumann et al. 2006). The number of RRTs working FT and PT in the hospital sector increased over time, while the number working FT and PT in the community sector was relatively stable (Figure 1). FT positions are predominant both in the hospital and community sector.

The majority of RRTs reported working for one employer, ranging from a low of 72.2% to a high of 82.6%. RRTs working for more than one employer included those who reported working FT, PT or casually. The proportion of RRTs working for more than one employer increased from 17.3% in 1996 to 26% in 2007.

FIGURE 1. Employment status of RRTs working in the community sector, over time



Retention in the profession is high at 93.5%. Retention of RRTs in the hospital sector is higher than in the community sector (Table 2). While the number of RRTs working in the hospital sector increased over time (43.4%), the proportion working in the hospital sector remained constant (Table 1).

TABLE 2. Time trends: employment sector

Sector		Hospital	Community	Other	Total
Start (1996)	N	1,262	214	57	1,533
	%	82.3	13.9	3.7	100
End (2007)	N	1,810	204	147	2,161
	%	83.8	9.4	6.8	100
Change in # of RRTs from 1996–2007		548	–10	90	628
Change in % of RRTs from 1996–2007		43.4%	–4.7	157.9	40.9
% Mean stickiness		94.9	85.7	82.4	

Notes: (1) Calculations are based on those RRTs who reported their employment sector in 1996 and 2007. Percentage for each employment sector was calculated based on Total N for each year. (2) The change in percentage from 1996 to 2007 was based on the change in the number of RRTs for each employment sector from 1996 to 2007.

TABLE 3. Time trends: employment status

Employment status		Full-time	Part-time	Casual	Total
Start (1996)	N	1,086	329	137	1,552
	%	70.0	21.2	8.8	100
End (2007)	N	1,496	439	223	2,158
	%	69.3	20.3	10.3	100
Change in # of employment status from 1996–2007		410	110	86	606
Change in % of employment status from 1996–2007		37.8	33.4	62.8	39.0
% Mean stickiness		92.7	77.5	59.1	

Notes: (1) Calculations are based on those RRTs who reported their employment status in 1996 and 2007. Percentage for each employment status was calculated based on Total N for each year. (2) The change in percentage from 1996 to 2007 was based on the change in the number of RRTs for each employment status from 1996 to 2007.

What Can We Conclude?

The numbers of RRTs increased over the study period. However, the RRT workforce is aging, as very few leave the profession and the proportion in the youngest age category has decreased. Whether the supply of RRTs practising in Ontario is sufficient to meet demand is a question that would require further investigation. Information collected by the CRTO does not contain data to answer this question. Clearly, knowing whether there are enough RRTs to meet the increasing incidence and prevalence of respiratory diseases within the aging population would be an important question for HHR planning.

An interesting finding is that RRTs who are fully employed in one institution tended to seek out employment in another institution. Standardization, shift-work schedules and transferable skills from one institution to another may enhance the opportunities for RRTs to pick up extra shifts outside their primary place of work. While many RRTs work for more than one employer, what is not clear is whether the results reflect the nature of the work, a lifestyle choice, the fact that some RRTs cannot find FT employment or a combination of these factors.

The policy direction that supports the shift of services from the hospital sector to the community/home has had little impact on where RRTs work. Overwhelmingly, the majority of RRTs continue to work and remain in the hospital sector. Yet, as noted above, RRTs could potentially play a key role in the community – e.g., in primary healthcare teams, in the home for those individuals living with chronic respiratory diseases or in a combination of settings.

One of the reasons RRTs may not seek employment outside the hospital sector could be due to the fact that very little public funding is available to support RRT services outside the hospital. If funding is available, it is generally a short-term consultation fee, which usually happens only as a result of an individual needing oxygen in the home. Alternatively, those individuals needing respiratory care in the community/home may receive care from RRTs employed by the hospital sector or from other health professionals with similar expertise.

The delivery of RRTs' services outside the hospital sector warrants further investigation in light of the growing number of individuals living with chronic respiratory diseases, to clarify who pays – i.e., the public or private sector – for services when delivered outside the hospital sector, and who the professionals are if not RRTs. HHR planning is concerned not just with the right number of healthcare workers, but also with ensuring the right mix for the delivery of efficient and effective care.

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TABLE 1. Comparison of employment status by employment sector over time

Year	Distribution by employment sector (%)		Distribution by employment status within each sector (%)	
	Sector	Total (%)	Status	Percentage (%)
1996	Hospital	82.3	FT	69.0
			PT	21.7
			Casual	9.3
	Community	13.9	FT	73.5
			PT	19.4
			Casual	7.1
	Other	3.7	FT	77.2
			PT	14.0
			Casual	8.8
1997	Hospital	81.7	FT	66.5
			PT	22.1
			Casual	11.4
	Community	13.9	FT	71.4
			PT	22.7
			Casual	5.9
	Other	4.4	FT	70.5
			PT	21.1
			Casual	8.4
1998	Hospital	80.7	FT	61.6
			PT	24.6
			Casual	13.8
	Community	13.4	FT	71.3
			PT	21.3
			Casual	7.4
	Other	5.9	FT	70.5
			PT	21.1
			Casual	8.4

Year	Distribution by employment sector (%)		Distribution by employment status within each sector (%)	
	Sector	Percentage	Status	Percentage
1999	Hospital	80.4	FT	58.2
			PT	26.0
			Casual	15.8
	Community	13.0	FT	74.8
			PT	16.0
			Casual	9.2
	Other	6.6	FT	72.3
			PT	18.8
			Casual	8.9
2000	Hospital	80.7	FT	59.6
			PT	25.1
			Casual	15.3
	Community	12.7	FT	82.1
			PT	11.9
			Casual	6.0
	Other	6.6	FT	70.6
			PT	19.6
			Casual	9.8
2001	Hospital	81.5	FT	64.3
			PT	25.3
			Casual	10.4
	Community	12.1	FT	82.7
			PT	13.6
			Casual	3.7
	Other	6.4	FT	74.3
			PT	17.7
			Casual	8.0
2002	Hospital	82.7	FT	67.3
			PT	24.5
			Casual	8.2
	Community	10.9	FT	87.3
			PT	10.7
			Casual	2.0
	Other	6.4	FT	74.8
			PT	14.8
			Casual	10.4

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Year	Distribution by employment sector (%)		Distribution by employment status within each sector (%)	
	Sector	Total %	Status	%
2003	Hospital	84.1	FT	68.2
			PT	23.4
			Casual	8.4
	Community	10.0	FT	85.0
			PT	11.8
			Casual	3.2
	Other	5.9	FT	78.0
			PT	12.8
			Casual	9.2
2004	Hospital	84.8	FT	67.0
			PT	23.9
			Casual	9.1
	Community	9.7	FT	83.3
			PT	12.4
			Casual	4.3
	Other	5.5	FT	78.3
			PT	15.1
			Casual	6.6
2005	Hospital	84.6	FT	65.7
			PT	22.4
			Casual	11.9
	Community	9.8	FT	79.5
			PT	13.0
			Casual	7.5
	Other	5.6	FT	81.7
			PT	12.2
			Casual	6.1
2006	Hospital	84.2	FT	64.8
			PT	23.2
			Casual	12.0
	Community	9.4	FT	81.5
			PT	12.0
			Casual	6.5
	Other	6.4	FT	80.7
			PT	12.6
			Casual	6.7

Year	Distribution by employment sector (%)		Distribution by employment status within each sector (%)	
2007	Hospital	83.8	FT	66.7
			PT	22.2
			Casual	11.1
	Community	9.4	FT	84.7
			PT	9.9
			Casual	5.4
	Other	6.8	FT	81.0
			PT	11.6
			Casual	7.4