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The Demand for Volunteer Labor: A Study of Hospital Volunteers
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The Demand for Volunteer Labor: A Study of Hospital Volunteers

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The authors challenge the assumption that organizations are willing to use all the volunteer labor available to them. Rather, they are influenced by the costs incurred of utilizing volunteer labor. This article provides a modest first look at the demand for volunteers by nonprofit institutions. Specifically, the article presents an economic analysis of the demand of volunteer labor by hospitals in the Toronto area and examines some of the factors that may determine the hospitals' willingness to use volunteer labor. Using data generated from 28 hospitals in Toronto, which use a total of more than 2 million volunteer hr per year, the authors show that the quantity of volunteer hours demanded is a decreasing function of their costs. Other factors such as productivity, output, and labor market institutions also influence the demand for volunteers.

Keywords: *hospital volunteers; demand for labor; nonprofits; Canada*

An important avenue of resource allocation in the Canadian economy is private philanthropy. In 2000, gifts of money and time amounting to \$4.9 billion and 1.1 billion hours, respectively, were given in private donations to nonprofits in Canada. This is a significant share of resources transferred voluntarily by Canadians. Twenty-seven percent of all adult Canadians volunteer, and the economic value of their time donations is valued at more than \$14 billion, which represents 1.4% of Canada's GDP and far exceeds the monetary donations (Hall, McKeown, & Roberts, 2001; Statistics Canada, 2004b). More than 161,000 nonprofit and voluntary organizations in Canada employ volunteers in the production of a variety of goods and services. Nine out of 10 volunteers (93%) are engaged in the production of services in these organizations (Statistics Canada, 2004a). In a national survey of volunteers, more than half (57%) of all volunteers reported that they helped to organize or supervise activities, 41% served on working committees and governing boards, 40% were involved in canvassing or fund-raising, 30% provided consulting or administrative work, and somewhat less than 30% were involved in educating, lobbying, coaching, providing care, delivering food, driving, performing maintenance, and so forth on behalf of an organization (Hall et al., 2001).

Although there are many studies that examine individual decisions to supply volunteer labor, there is a paucity of literature on organizational demand for such labor. This research addresses this gap in the literature and seeks to delineate factors that influence an organization's demand for volunteer labor. We study a particular set of organizations—hospitals—that have a long tradition of using both paid and volunteer labor. Specifically, we examine hospitals in Toronto, which are increasingly relying on volunteer labor to enhance the quality of health care provided. Traditionally, hospital volunteers consisted of hospital auxiliaries that were mainly composed of society ladies and spouses of physicians and who ran gift shops and helped with fund-raising. More recently, however, hospitals have been recruiting large numbers of volunteers from all walks of life for these and many other types of services.¹ These trends in the use of volunteers by hospitals have required hospitals to move from ad hoc management of volunteers to engaging professional managers to train, screen, and manage volunteers. Although this professionalization of volunteer management was, in part, a response to the growing number of volunteers, it was also a response to the increasing vulnerability of hospitals to liability issues. In turn, this professionalization has increased the costs (per volunteer) that hospitals face in using volunteer labor.²

Using data generated from interviews with the CEOs of 28 hospitals in the Toronto area and data on their volunteer programs, we examine some factors that may influence the demand for volunteers within hospitals. We proceed as follows: The next section discusses the literature on volunteer labor. This is followed by a section that considers factors that may determine the extent of the employment of volunteer labor in hospitals. In this part, we also consider how CEOs' attitudes toward their volunteers may be viewed as proxies for some of the factors that affect demand for volunteer labor. The subsequent section presents our research methodology and is followed by a report of the findings of our research. In the final section, we analyze our results and offer concluding remarks.

LITERATURE REVIEW OF VOLUNTEER LABOR

When constructing the supply function of unpaid labor, economists deviate from the traditional models used for paid labor, which are often modeled as a function of wages, nonwage income, and available hours. Because volunteer labor receives a zero wage, it must be viewed differently (Freeman, 1997). There exist several models of the supply of volunteer labor, each with some predictive value. First is a consumption model in which volunteering is a utility-yielding activity—the individual receives satisfaction from the very act of volunteering. This individual maximizes utility subject to a time and budget constraint (Andreoni, 1990; Menchik & Weisbrod, 1987; Prouteau & Wolff, 2004; Segal & Weisbrod, 2002). Second is an investment model in which volunteering is undertaken by an individual to enhance future income potential. Here, the individual invests volunteer hours out of available leisure hours to maximize future earnings (Katz & Rosenberg, 2004; Menchik & Weisbrod, 1987). Other models include viewing the output of volunteers as a public good, where the volunteer receives satisfaction from the output produced by his or her volunteering efforts (Schiff, 1990; Unger, 1991). In addition to theoretical work, there is a large empirical literature on the supply of volunteer labor. Much of this literature has focused on identifying socioeconomic and personal characteristics that are likely to predict volunteering among the general population using the above models (Carlin, 2001; Freeman, 1997; Menchik & Weisbrod, 1987; Proteau & Wolff, 2004; Smith, 1994; Vaillancourt, 1994; Vaillancourt & Payette, 1986; Van Dijk & Boin, 1993; Wolff, Weisbrod, & Bird, 1993). Large empirical surveys profile typical volunteers, examine the motives for volunteering, specify where volunteers tend to work, and focus on the characterization of volunteers based on their socioeconomic demographics (Davis Smith, 1998; Hall et al., 2001; Hodgkinson & Weitzman, 1992; Independent Sector, 2001).

In all cases of modeling the volunteer labor supply, the implicit assumption is that organizations are willing to use all the volunteer labor that is offered (quantity and quality) for each type of volunteer job they establish. In other words, the assumption is made that demand for (volunteer) labor is infinite when the wage rate of labor is zero.³ However, although volunteers do not impose direct wage costs, there are other costs that they do impose. The equating of a zero wage rate with zero costs is not, in general, a realistic assumption, and it ignores the reality that faces organizations that use volunteer labor (Steinberg, 1990).

An organization's nonwage costs of employing volunteers in terms of day-to-day operating costs such as recruitment, screening, training, managing, and providing office space, materials, and so on are significant. Indeed, such costs are particularly important within the context of hospitals, where screening

and training are essential (Handy & Srinivasan, 2004). In our interviews with hospital CEOs, we found that volunteers are subject to careful screening, orientation, training, and often work side by side with paid health professionals. Although hospitals minimize risks (and their liability) by carefully prescribing what volunteers may or may not do, issues of privacy, contact with minors, and other sensitive issues generally require that volunteers be carefully screened and well trained.

Hospitals in the Toronto area are involved in a continuous recruiting of volunteers. However, they do not accept all volunteers who apply. In some hospitals, waiting lists exist for certain volunteer jobs, whereas in a few there are shortages, especially of skilled volunteers. Many reported that they cannot expand their volunteer base due to the lack of resources to manage the increasing number of volunteers. Individuals looking for specific volunteer positions, specific hours, or those who could not make a commitment for a specified minimum number of hours find it difficult and sometimes impossible to obtain volunteering work (Karom Group of Companies, 2001; LaPerriere, 1998). As one CEO told us, "We will have to rethink our policy in accepting short-term volunteers; the turnover is very costly." Thus, organizations clearly view volunteers as imposing a cost on them despite the fact that the wage rate of volunteers is zero.

Emanuele (1996) found that nonprofit organizations in the United States seem to be choosing the amount of volunteer labor they use in accordance with an implicit downward sloping demand curve for volunteer labor that is consistent over time. Due to data limitations, she was not able to uncover specifications for the demand curve for labor. Emanuele's findings lend credence to the fact that organizations using volunteer labor do not accept all volunteer labor that is supplied and associate costs with its use.

DEMAND FOR VOLUNTEER LABOR IN HOSPITALS

To fully understand the amount of volunteer labor being utilized, it is necessary to understand the supply and demand curves for volunteer labor.

Equations of volunteer labor supply are based on utility-maximizing individuals' decisions on how to allocate their time. The individual's decision to provide hours of volunteer labor includes the opportunity costs facing the individual, the after-tax price of charitable contributions (considered as a substitute for volunteering for the individual), wealth, and attitudes to volunteering. The latter are usually proxied by socioeconomic characteristics such as age, gender, education, and religiosity.

Due to differing expectations and objectives as well as histories, geography, and culture, different organizations attract and utilize different types of volunteer labor. For example, the ownership of the organization, or the subsector of the economy in which the organization is located, can lead to a sorting out of volunteer labor (Segal & Weisbrod, 2002). To minimize these differences, we focus on volunteer labor in a relatively homogeneous sector, namely, publicly subsidized nonprofit hospitals in the Toronto area, which face similar political and cultural environments.

In an era of increasing demand for health care and a dwindling of public support, publicly subsidized nonprofit hospitals in Toronto have increasingly turned to private donations of money and time to augment their resources. Such donations fund capital expenditures and new services as well as maintain existing services. Some hospitals rely on significant amounts of volunteer labor to produce many of their services.

In principle, it is necessary to know the organization's objective function in order to determine the derived demand for volunteer labor. The demand curve for volunteer labor should be derived from the objective function of the

organization, utilizing volunteer labor as one of the inputs in production. Organizations are faced with a choice of how much to produce and also how much to use of each of the various inputs of production. In other words, the demand function for one input, that is, hours of volunteer labor, will depend on its productivity, its price, and other available substitutes. Several non economic factors will also influence the decisions of organizations to use volunteer labor.

However, as is well recognized, the objective function of a nonprofit is not well understood (Steinberg, 1990). It is, of course, possible to focus on a “sub objective function” as done by Schiff (1990), who assumed that this function is the net value of volunteers. However, such objective functions are simplistic. For example, assume that hospitals wish to maximize the amount of health care they provide.⁴ To do this they need funding. Hence, a sub objective function may be to maximize revenue (including donations of time). However, that does not imply maximizing the net value of volunteers. First, volunteering may crowd out other donations by the private sector, by substitutions of time for money donations. Moreover, volunteering and money donations may crowd out government support (Handy & Webb, 2003). Conceptually, various sub objective functions could theoretically be collapsed into a single measure such as the monetary equivalent of the present value of patient welfare, but it is difficult in practice. In summary, it is almost impossible to define a hospital’s objective function, or even its sub objective function.

Despite this, for most reasonable objective functions, it is possible to derive testable predictions of the demand for volunteer labor by assuming that the hospital pursues its goals in an efficient manner. For example, the choice of using an additional hour of labor as an input should be made if and only if the value of the additional output (marginal rate of productivity [MRP]) from this hour is equal to the price paid for this hour. For overall efficiency, this should be true for all inputs of production, and at equilibrium these input ratios of MRP to price should be equal for all inputs.⁵ For example, hospitals will eschew volunteer labor as its price increases (the costs per hour of volunteer labor incurred by the organization) and turn to substitute inputs with lower input ratios (of MRP to price) such as minimum wage labor. Thus, we expect the utilization of volunteer labor to be positively influenced by its productivity and negatively influenced by its costs.

A hospital will also be mindful of the environmental constraints under which it operates, such as the existence of labor contracts and its obligations to the community as reflected in its mission statements. Thus, the factors influencing the demand for volunteer labor likely include the cost and productivity of volunteer labor, the total output generated, and non economic factors such as organization culture and organizational constraints.

We now examine each of these factors and then suggest ways of measuring them.

Costs Per Hour of Volunteer Labor

As explained above, efficiency requires that labor as an input is hired until the value added by the last hour is offset by the cost of that hour. Hence, even if, for institutional reasons, this equality is not strictly maintained, it is clear that the amount of labor used is dependent on the level of wages: The demand function for labor shows a negative relationship between the wage levels and the amount of labor demanded. In the case of volunteers, although the explicit wages are zero, zero wages does not imply that there are zero costs to the employer. As discussed earlier, volunteers impose costs of recruiting, screening, training, managing, and recognition.

These costs are likely to be substantial. A reasonable proxy for such costs in a hospital is the volunteer administration budget, which includes the salaries

and office costs of managers whose task is to coordinate and manage volunteer resources in the hospital. We argue that such costs per volunteer hour affect the organization's decision regarding the amount of volunteer labor to use. When these costs increase, hospitals are likely to use less volunteer labor: We hypothesize a negative influence of costs per volunteer hour on the number of volunteer hours used by the hospital.

Scale-Output

As output increases, the organization's demand for inputs will increase; thus, the number of volunteer hours an organization uses will have a direct relationship to its output. We use the size of the hospital as captured by the number of beds as a proxy for output. This is a reasonable measure of the output of a hospital because the number of patients in the hospital at any one time is a good proxy for the output produced by the hospital. Also, given that all the hospitals in our sample receive their revenue from the same insurance source, that is, the Government of Ontario, the number-of-beds measure may be a reasonable proxy for relative output.

Trade-Off for Time Donations

Money donations allow the CEO to purchase other inputs for health care production, whereas time donations can only be used to produce services provided by volunteers. Thus, we focus on the trade-off CEOs are willing to make between time donations and money donations, to indicate what they perceive to be the relative advantage of using volunteer labor in the production of health care. This acts as a proxy for the MRP ratios.

Assume a CEO can choose a monetary donation instead of 1 hr of volunteer time, everything else being equal. We use a hypothetical question to elicit the minimum money donation that the CEO would be willing to forgo for 1 hr of volunteering. This is an indicator of the CEO's dollar valuations of an hour of volunteer time as an input in production. To put it differently, the value put on an hour of volunteer time is the hospital's opportunity cost of giving up that hour.

If, for example, a volunteer hour can be replaced by paid labor at the cost of \$12.50, then any trade-off value above \$12.50 suggests that the CEO intrinsically values the work of a volunteer in excess of what paid labor (a substitute) can produce in terms of the hospital's direct output. Higher valuation of the volunteer hours would suggest that volunteer labor produces benefits to the hospital beyond its labor. These may include the goodwill generated by their presence, their service as ambassadors to the general public, enhancement of community relations, and so on. For example, if the CEO places the trade-off value at \$50.00, she or he is signaling that the value of the production of 1 hr of volunteer labor is 4 times greater than the value of the output produced by 4 hr of a substitute input, that is, an hour of paid labor (at \$12.50). Thus, we hypothesize that hospitals where CEOs provide higher trade-off values on volunteering hours will have greater utilization of volunteer labor than the hospitals where CEOs provide lower values.

Productivity and CEO Satisfaction

In the case of volunteer labor whose input is often in the softer services, such as making patients and their families comfortable and other nonmedical jobs, there is no single quantitative measure of productivity. Although some outputs of volunteer labor such as running gift shops, providing information, answering telephones, and assisting with clerical tasks may be measured using market wages,⁶ it is difficult to measure this without detailed data on the number of volunteer hours assigned to each task. Furthermore, such measures would assume that in the absence of volunteer labor, paid labor would be hired to replace volunteer labor; however, it is not clear that in the absence of volunteer labor all of the services would be offered, thus making replacement

value at market wages inappropriate as productivity measures. How, then, should the productivity of volunteer labor be evaluated? We suspect that in practice, the value of such labor is judged subjectively. If so, it may be proxied by how the CEO of the hospital perceives volunteers as fulfilling the mission of the hospital. We therefore suggest that the utilization of volunteer labor will be influenced by its productivity *as perceived by the CEO*.⁷ Because use of volunteer labor requires the hospital to expend real resources, the ultimate decision on allocation of resources rests with the CEO. The CEO's evaluation of the output produced by volunteers will therefore affect the hospital's demand for volunteer labor.

Demand for Volunteer Services and Mission Statements

Volunteer labor cannot be used in direct medical interventions. They can, however, be used to produce many soft services that focus on the comfort and emotional well-being of the patients and on reducing patient and family anxiety (Handy & Srinivasan, 2004). The extent to which a particular hospital values soft services can be gleaned by examining the hospital's mission or vision statements. These statements almost invariably make mention of the quality of nonmedical care, that is, care that can be produced by volunteers. The following hospital mission statement is illustrative: "We believe that compassion, caring and technical excellences are equally important."⁸ In view of this, Govekar and Govekar (2002) suggest that to ascertain the demand for volunteer labor, it is necessary to examine the institution's mission statement to see if the statement reflects the kinds of services that volunteer labor produces. Such a public declaration in the mission statement of the kind of services produced by the hospital—services that are generally provided by volunteers—signals that volunteer labor is an essential input in the production of the services provided. Thus, we posit that mission statements of hospitals that explicitly mention that the care provided by the hospital includes the services generally provided by volunteers, or explicitly mention volunteers in the delivery of health care, are likely to reflect a high demand for volunteer labor.

Organizational Constraints: Labor Contracts

Often, paid workers view volunteers negatively because volunteers may be viewed as replacement for paid labor. In cases where labor contracts exist to prevent volunteer labor substituting for paid labor, any perceived substitution between paid and unpaid work can lead to friction in unionized environments and is subject to grievance (Macduff, 1997; Zahnd, 1997). In these cases, a hospital may be constrained from using the desired levels of volunteer labor, both directly, as a result of numerical constraints on the number of volunteers producing a given service, and indirectly in order to achieve industrial peace. Furthermore, due to hospital regulations (to minimize their liabilities) volunteers cannot provide any service that is of a medical nature or done by medical professional staff. Although some of the hospitals in our sample did not have labor contracts, the contracts of those that did had an explicit clause stating that volunteers may not perform work done by paid staff except in those areas that were run by volunteers before 1986 (Canadian Union of Public Employees [CUPE], 2000).¹⁰ We therefore hypothesize that hospitals with collective labor contracts will use less volunteer labor than those not subject to such constraints.

To sum up the above discussion, Table 1 identifies the factors influencing demand and provides the expected direction of the relationship between the dependent variable—hours of volunteer labor utilized by the hospital—and the six independent variables.

In later sections, we examine the data to determine whether the six factors

mentioned above explain the use of volunteer labor by hospitals. Before doing so, we describe in the next section the methodology used in obtaining the data.

METHOD

Data for this study were obtained from 28 hospitals in the greater metropolitan area of Toronto, Canada. The geographically restricted sample was dictated by cost considerations. Although this area contains 57 hospitals, we limited our sample to the 31 hospital sites that use at least 100 volunteers, have at least one paid staff responsible for volunteer administration, and have data available on their volunteer programs. For this research, the sample of CEOs we wish to survey is 29; this number reflects the case of multiple hospital sites being run by a single CEO: Because we conducted only one interview with the CEO in charge, we ended up with a sample size of 29. Due to its protocol, one hospital was unable to allow us to access required data and was therefore not included in the data set. Our sample was therefore reduced to 28.

We sent a letter inviting the hospital CEOs to participate in this study. We then telephoned to schedule a meeting. Face-to-face interviews with CEOs lasted 30 to 45 min. Unfortunately, the SARS (severe acute respiratory syndrome, a highly infectious virus) outbreak in 2003 led to the closing down of all major hospitals in the Toronto area for a considerable period of time during this study. Promised interviews were cancelled and could be rescheduled only after the SARS threat had subsided. These interviews were conducted either in person or by phone and lasted between 35 and 40 min.

In a few cases when the CEO was not available, generally due to the SARS epidemic, we interviewed an individual designated by the CEO. Although designates' titles varied from chief financial officer to vice president of human resources, these individuals usually worked closely with their CEOs, were involved in key decision making, and were often responsible for overseeing volunteer resources in an administrative role. Hence, they were perfectly suitable proxies for the CEOs. We refer to all our interviewees as CEOs.

We used a structured questionnaire, with several open-ended questions.

The questions covered a variety of topics ranging from overall satisfaction with the volunteer program to the trade-off of donations of time for monetary donations, to detailed and specific questions on how CEOs made budget decisions for their hospitals' volunteer programs. In many of the interviews, the open-ended questions generated detailed responses and thereby provided a richer understanding of the informational basis for decision making. All interviewees were assured of confidentiality; the quantitative findings that follow are reported in the aggregate, and quotes are not identified by name or hospital affiliation.

FINDINGS

The hospitals in our sample had an average of 545 beds each. Nearly two thirds of the hospitals described themselves as acute and general hospitals; the rest categorized themselves as providing long-term rehabilitation or psychiatric care. Due to recent mergers, some hospitals in our sample operated at more than one location, sometimes with separate volunteer programs and distinct sets of volunteers. An average of 700 individuals volunteered at each site, with an average contribution of more than 71,000 hr per hospital per year in 2002.

Our findings are organized as follows: In subsection A, we examine how CEOs obtain information on the volunteer programs. We assume that such information will eventually affect the allocation of resources for volunteer programs and their perception of the contribution of their volunteers. Second, in subsection B we carry out a content analysis of mission statements. In subsection C, we estimate the effect of various factors on the extent to which

Table 1. Factors Influencing Demand for Hospital Volunteers

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<i>Variable</i>	<i>Measure</i>	<i>Proxy</i>	<i>Direction of Influence</i>
Dependent	Hours of volunteer labor		
Independent	Cost per hour	Proxy for price	Negative
Independent	Number of beds	Proxy for output	Positive
Independent	Trade-off value (\$) for 1 hr of volunteer service	Proxy for value of productivity of 1 hr of volunteer labor—MRP	Positive
Independent	CEO satisfaction	Proxy for productivity	Positive
Independent	Mission statements	Organizational culture: Goal orientation toward volunteers	Positive
Independent	Unions	Constraints on the use of volunteer labor	Negative

Note. MRP = marginal rate of productivity.

hospitals use volunteer labor. This is based on a simple regression, where the dependent variable is the number of volunteer hours utilized by the hospital.

A. THE VIEW FROM THE TOP: CEO PERCEPTIONS OF VOLUNTEER DEMAND AND SUPPLY

Because CEOs have the final word on resource allocation, we were interested in assessing how CEOs receive information on their volunteer resources and thereby make decisions about volunteer labor. In particular, we wished to measure how informed the CEOs were about the contribution made by service volunteers in their hospitals—*independent of any occasional interaction with volunteers*. We asked the CEOs what reports they received on the activities and the performance of their volunteers and who provided them with these reports.

The reports varied by hospital and ranged from reports made by directors of volunteer programs reporting on hours provided by volunteers to more general information gathered through requests for budgets and reports of fund-raising or honoring volunteers. We grouped our results into (a) quantitative reports, such as volunteer hours donated and/or the number of volunteers and programs, and (b) qualitative reports, which included receiving information at events, description of volunteer services, training or recruitment sessions, and dealing with problems or issues arising.

Two of the CEOs received only quantitative reports, and three received only qualitative reports. The other 23 CEOs received both qualitative and quantitative reports. In addition, all CEOs received informal feedback, such as comments from staff, patients, and families and unsolicited letters. This suggests that the majority of CEOs had good reporting mechanisms in place.

Without exception, all CEOs believed that their volunteer programs are cost-effective. It was their view that indirect and direct costs such as those incurred in recruiting, training, and managing volunteers are easily outweighed by the benefits delivered by the volunteers. One comment stating that “four hundred volunteers managed by a staff of three is a good management ratio” was indicative of the general tenor of the comments made by the CEOs.

It was not evident that any of the CEOs had performed any explicit cost benefit analysis of the use of volunteers, though they may have had discussions

with volunteer managers regarding their budgets. In fact, the CEOs tended to view these budgets as measures of the costs of having a volunteer program. Nevertheless, CEOs generally saw volunteers as providing more than labor at a low cost. They also viewed volunteers as playing a public relations role and as highly important links to their communities.

Previous research has indicated that many of the hospitals in the Toronto area would like to increase their volunteer base but find it difficult to do so due to the lack of resources available to manage new volunteers (Handy & Srinivasan, 2004). In view of this, we asked the CEOs of the hospitals what constraints they face in expanding their volunteer base.

The majority (slightly more than 50%) indicated the lack of resources to be able to deal with larger number of volunteers. These included resources to recruit, supervise, and train volunteers as well as physical resources such as office space and other facilities. A little less than a third of the CEOs indicated that the demand for certain positions could not be met by the available volunteers and that as a result, they were not able to expand volunteer services. Only a few of them stated that the supply of volunteers was limited, indicating that this was one of the major reasons for their inability to expand. Others, especially those in teaching hospitals (which might be viewed by volunteers as being more prestigious), had an excess of volunteers. Other constraints indicated by the CEOs included potential labor issues with existing union contracts and retaining a staff-to-volunteer ratio balance.

More than 85% of the CEOs recognized that over the years there have been significant changes in the nature of volunteers and volunteering. The demographics are changing (such as more students, more males, and a greater cultural diversity), and the turnover rate is increasing. We asked the CEOs to share the major challenges that the hospital faces regarding their volunteer programs. Nearly three quarters suggested that their hospitals face a lack of resources and structure to support their volunteer programs adequately. Two thirds suggested that recruitment of volunteers to fill certain types of positions is becoming difficult, as volunteers are either unable or unwilling to take on specified tasks. This is exacerbated by the competition from other institutions for volunteers. Short-term volunteers were seen as a drain on resources (in terms of recruitment and training), and one hospital CEO suggested that the acceptance of such volunteers should be reconsidered.

Consider how satisfied CEOs are with their volunteer resources. High satisfaction will, *ceteris paribus*, imply that CEOs will want to expand their volunteer base. We asked CEOs to rate their satisfaction with the volunteer contribution on a scale of 1 to 10 (1 = *lowest satisfaction*, 10 = *highest satisfaction*) The responses averaged 8.7, with a standard deviation of 1.3; this level of CEO satisfaction suggests that CEOs are receiving good reports from the surveys they conduct and the informal feedback they receive from patients and families, as well as their own observations.

B. DEMAND FOR VOLUNTEER LABOR

We examined each hospital's mission or vision statement or statement of goals, available on its Web site, to see whether it included in the provision of health care the kinds of services generally produced with volunteer labor input. All 28 hospital mission statements referred to having a goal to provide excellence in health care that they saw as comprising *more* than services provided by medical professionals. They all emphasized the holistic nature of health care by stressing the need to ensure that health care included compassionate care, spiritual well-being, and so forth. In different ways, they stressed that health care was not simply provided by doctors and nurses but was a function of a whole "team" of workers. Some explicitly mentioned volunteers

in the provision of health care services, while others alluded to the team but did not specify the team members. That all 28 mission statements directly or indirectly related quality of care with including services provided by volunteers did not enable us to discriminate between the hospital using the mission statement as an explanatory variable directly.

More detailed content analysis of the mission statements showed fewer than half (12 of 28) of the hospitals we studied mentioned volunteers or volunteer programs explicitly in their mission statements. A few made it a point to recognize the contribution of volunteers and pledged to make it an integral part of their health care provision. However, most hospitals (25 of 28) mentioned volunteers and the need for volunteers in achieving their mission in other printed and electronic literatures. Due to the enormous variability in how volunteers were mentioned, the nature of mission statements, and published and electronic literatures available from the various institutions, it was, therefore, not possible to construct a meaningful quantitative index for this measure to include in our statistical analysis.

We also asked CEOs how much of a money donation they were willing to trade off for an hour of volunteer time. This was not an easy question for CEOs to ponder because it is a question “outside the box.” To help respondents, we asked whether they were willing to accept \$5.00 or an hour of volunteer time. We raised the dollar amount in increments of 5 until the CEO chose a monetary donation over 1 hr of volunteer time.

Several CEOs still found this question difficult and either declined to answer or gave very high values (exceeding \$1,000) that we omitted in our calculations as “protest” answers. Most of the other values ranged from \$15 to \$50, with an average of \$25.90. This somewhat overestimates the value of volunteer time, which has been estimated to have an average replacement value of \$17.57 for hospitals (Handy & Srinivasan, 2004). As CEOs could have easily substituted volunteer labor (with paid labor or other inputs) using the money donation received, the amount indicated by the CEO is a reasonable proxy for how the CEOs valued the productivity of volunteer labor as an input into the production of health care in their hospital.

C. DETERMINANTS OF DEMAND FOR VOLUNTEERS

From the findings above and our discussion on the determinants of volunteer demand, we model the demand for volunteer hours to be a function of five independent variables:

1. cost/hour: costs per volunteer hour (total costs divided by the number of volunteer hours);
2. trade-off value: the productivity of 1 hr of volunteer labor for the trade-off dollar figure for 1 hr of volunteer labor, as indicated by the CEO;
3. CEO satisfaction: CEO satisfaction (on a scale of 1-10, 1 = *not satisfied with volunteers* and 10 = *highly satisfied with volunteers*);
4. beds: number of beds at the hospital; and
5. union: the existence of a labor union (a dummy variable with 0 and 1, where 1 indicates the existence of a labor contract that constrains volunteer hours and 0 indicates no labor contract or one that does constrain volunteer labor).

As mentioned above, we used only five of the six variables suggested in Table 1; we omitted mission statements because all 28 mission statements spoke of providing services that are generally done by volunteers. In addition, as a result of the difficulty in quantifying the appearance of “volunteers” in the mission statements due to the extreme heterogeneity in the types and nature of these statements, we could not include it in our analysis.

Our data of 28 observations represent 15,284 hospital beds, the combined

size of the hospitals that use an aggregate of 2,003,292 volunteer hours per year, that is, an average of more than 71,000 hr per year per hospital. Using the data collected on Variables 1-5 above, we ran a linear regression to estimate the effects of these variables on the demand for volunteer hours. The linear regression produces an R^2 of 0.73. The coefficients are all statistically significant at p less than .05 levels with the exception of CEO satisfaction, as seen in Table 2. In the linear regression analysis, we find that four of the five determinants of demand for volunteers are significant, and that three of these are significant in the expected direction.¹¹ It is important to note, however, that although we describe our regression as a demand function, our analysis must be viewed as preliminary because what is actually observed is the equilibrium result of the interplay of demand *and* supply. In other words, there exists what is known in econometrics as an identification problem. Nonetheless, we feel that our interpretation of the regression as a demand function is reasonable because such a large proportion of the hospitals felt that there was no shortage of potential volunteers.

The first determinant of the demand for volunteer labor that we analyze is the cost per volunteer hour that is incurred by the hospital. This includes all the various costs of recruiting, screening, training, managing, and retaining. As expected, we find that the cost of volunteer labor has a negative effect on the quantity of volunteers demanded. And because the marginal cost per volunteer hour is small, this highly significant negative relationship between volunteer hours and the cost per volunteer hour suggests that the demand for volunteer labor is very sensitive to costs: The demand curve for volunteer labor is the traditional downward sloping curve.

As expected, we find a direct and significant relationship between the volunteer hours utilized and the trade-off value given by the CEO for an hour of volunteer labor.¹² This suggests that there is greater demand for volunteer labor in those hospitals where the CEO views volunteer labor as more productive.

With respect to CEO satisfaction, we found a positive effect, as expected, but this was not statistically significant. This may, perhaps, be explained by the small amount of variability that is observed in this variable.

As expected, we find that the scale effect on the number of volunteer hours used, that is, the number of beds in a hospital, has a positive and significant effect on the hospital's demand for volunteer hours.

The existence of a constraining labor contract significantly influenced the use of volunteer hours, but in the opposite direction than expected. We find that the existence of labor contracts does not reduce the demand for volunteer hours. This result suggests that it may be necessary to look more closely at the relations between management and labor and not simply at the existence of a labor contract. The nature of the relationship will depend on the way labor contracts can impinge on the use of volunteer labor. It is possible that if there is a clear demarcation on what volunteer labor can and cannot do with respect to paid labor, then the existence of the labor contract may not impinge negatively on the demand for volunteer hours within this delineated work domain.

Rather than deter the use of volunteer labor, labor contracts, which remove uncertainty, may be conducive to its use. It is also likely that hospitals with labor contracts work harder to utilize volunteer labor, as they pay higher wages to unionized labor.¹³

The significant positive correlation may also suggest that hospitals that have made peace with existing labor unions regarding volunteer labor and their presence can increase volunteer labor without being afraid of creating tensions within hospitals. And those hospitals without labor contracts may be more careful in increasing their demand for volunteer labor with the fear of creating problems among their paid staff and creation of unions. Given that

the majority of the hospitals in our sample have labor contracts in place, there exists a culture of labor contracts in which the hospitals, employed workers, and volunteers have learned to coexist.

Table 2. Regression Coefficients

<i>Dependent Variable:</i>			
<i>VOLHOURS</i>	<i>Standardized β Coefficient</i>	<i>t-Value</i>	<i>Significance</i>
Constant		0.534	.599
Cost/hr	-.552	-4.62	.000
Beds	.408	3.50	.002
Trade-off value	.269	2.34	.026
Satisfaction	.183	1.48	.153
Union	.236	2.34	.029

VOLHOURS = volunteer hours.

CONCLUSIONS

Many scholars have decried the paucity of research on the demand side for volunteer labor. This article takes a first, albeit modest, step in this direction by way of an empirical examination of the determinants of the demand for volunteer labor. The approach taken uses the economics literature on the demand for labor and the conventional wisdom regarding volunteers. In addition, the existing literature on the supply of volunteer labor is used to derive insights on how to proceed with the demand side of the picture.

The study offers a rudimentary demand function for volunteer labor from an organizational perspective. It uses the perspective of CEOs in 28 nonprofit hospitals in the Toronto area, data on costs of volunteer hours, and organizational constraints to derive demand for volunteer labor. Recognizing the near impossibility of specifying an objective function or a production function for a nonprofit hospital, the model nonetheless identifies some of the key factors that are likely to influence the demand for volunteer labor. Because CEOs make resource allocation decisions within hospitals, we assume that the CEO's perspectives would influence the demand for volunteer hours based on his or her perception of the value and productivity of volunteer labor. After isolating several factors likely to influence the use of volunteer labor in a hospital environment, we focused on five independent variables and ran a linear regression of these variables on volunteer hours. This regression explains 73% of the variation for the demand for volunteer hours. Our findings provide some support to the expected direction of the effects of costs, output, and productivity on the use of volunteer hours. Our findings indicate that the use of volunteer labor by hospitals is negatively related to the costs per volunteer hour and positively related to measures of productivity and output. We also found confirmation for the notion that organizational constraints matter. It is also interesting to note that the relationship between the presence of a union and the use of volunteer labor was significant, but not in the expected direction. Whereas our original view was that the presence of a labor union deters the use of volunteers, the opposite appears to be true. Further work on this issue is needed, in which information on the nature of the working relationship between hospital management and the labor union is explicitly examined.

Due to the limitations of the size of our sample, further research on a larger number of homogeneous organizations and in different sub sectors is required. The elusive problem of specifying objective functions for organizations

must be confronted to help specify a theoretically based demand function for volunteer labor. In the case of hospitals, patients (consumers) cannot choose the services of volunteers without consuming other services provided by paid staff. These services are bundled with other services, and we had to make simplifying assumptions on output measures. Future research could be based on organizations with less complex objective functions.

In summary, the results appear to point to the existence of a downward sloping demand curve for volunteer labor: The demand for volunteer labor is not infinite. This has theoretical as well as practical policy implications. Policies that promote volunteering and thereby increase the supply of volunteers do not necessarily help nonprofits lower their costs (by using larger available amounts of volunteer labor). Indeed, to the extent that the use of volunteers is demand rather than supply constrained, policies should focus on facilitating the incorporation of volunteer labor rather than increasing its supply.

Make-work projects designed to absorb the available supply of volunteer labor will distort the goals and efficiency of organizations. Funding arrangements for organizations using a large number of volunteers should be targeted to help organizations use professional management techniques. This will help to reduce costs, increase efficiency, and reduce liabilities that may be attendant with the use of volunteer labor. In addition, effective management will help organizations use available volunteer labor in meaningful ways that will provide benefits not only to organizations utilizing them but also to volunteers.

Finally, as mentioned above, although our article focuses on the demand side of volunteer labor and delineates the determinants, the supply of volunteers and its interaction with demand remain important issues for research.

Notes

1. Auxiliaries have been disbanded in many hospitals or merged with volunteer departments. In some instances where they coexist with volunteer departments tensions exist between the auxiliaries and volunteer departments (Atkinson, 1997; Handy & Srinivasan, 2004).
2. It seems very likely that beyond a certain number of volunteers, the cost associated with volunteers is convex.
3. The assumption is that the demand for volunteer labor exceeds the supply of volunteer labor at a wage rate of zero.
4. It is difficult, if not impossible, to distill even this seemingly simple objective function into an operative measure. How does one measure health care? How is health care aggregated across individuals? Which group of individuals enters a specific hospital's objective function?
5. $MRP_i / p_i = 1$ for all inputs i of production in the long run.
6. Of course, measuring productivity is complex, even in well-defined work such as, for example, a volunteer receptionist: the number of people greeted, the diameter of the smile produced by the volunteer, and the amount of eye contact all enter into productivity.
7. A comprehensive measure of productivity should also include the perceptions of patients and their families. However, due to the ethical protocols in hospitals, eliciting such information from patients and their families is not permissible.
8. Retrieved June 17, 2003, from Lake Ridge Health Corporation, www.lakeridgehealth.on.ca/get/vision.htm.
9. Many other types of organizations have restrictions on the use of volunteers for work done by paid staff; for example, labor contracts by the Canadian Union of Public Employees (CUPE) with school boards specify the limitations of the use of parent volunteers in schools and annually review the use of volunteers (retrieved June 13, 2004, from <http://www.sd61.bc.ca/hr/pdf/volunteer.PDF>).
10. Section 11.02 of the Central Hospital Agreement—a result of a grievance filed by CUPE (CUPE, 2000; Handy, Mound, & Vaccaro, 2004).
11. Furthermore, a bi variate correlation shows no significant correlation among the five independent variables. Multicollinearity was not an issue.
12. A few CEOs were unable to answer this question; we used the mean as a substitute for these missing values in our regression.
13. We thank one of our anonymous referees for suggesting this point.

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