

ENABLING AND MEASURING SUCCESS AMONG NEW BRUNSWICK VOLUNTEER DRIVER PROGRAMS IN AN ERA OF DEMOGRAPHIC CHANGE: TOWARDS A COMMON DATA COLLECTION STANDARD

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1 Introduction

This paper describes the outcome of an exploratory step in the lead author's broader research agenda funded through a Discovery Grant by the Natural Sciences and Engineering Research Council of Canada (NSERC) called "Developing planning and forecasting tools for age-friendly rural and community transportation alternatives: a focus on volunteer driver programs to facilitate older person mobility and safety". It incorporates the results of an undergraduate special study that involved working with seven different regional volunteer driver programs in New Brunswick to catalogue the type and extent of trip and contextual information that they collect. The goal was to identify opportunities for consistent reporting practices that could enhance day-to-operations, as well as contribute to long term and strategic transportation planning incorporating these programs.

2 Background

Many older adults in the United States and Canada rely on their car to meet their transportation needs, yet many face the prospect of not being able to independently meet transportation needs by driving as they age. Data from the 2009 Canadian Community Health Survey (CCHS) show that 450,000 Canadians over the age of 65 years require help with transportation to go shopping (a life maintenance activity), with one-third of those 85 years and older needing help. Older adults often turn to friends and family before other formal alternatives; however, the expected doubling and tripling of the U.S. and Canadian older adult populations, respectively, by 2056, in concert with declining family sizes, suggests that "friends and family" may be unable to satisfy future transportation demand of older drivers as they transition to passengers. Alternatives in urban areas include public transit, taxis and walking, but these are generally not viable options in rural and low density areas, explaining why the oldest rural drivers hold onto their licences longer than urban drivers and have had higher per-km collision rates (Hildebrand & Myrick, 2001).

Car-based volunteer driver programs have demonstrated potential to address the gap between formal transit services and the personal automobile in rural and low-density locations (T.R Hanson & Hildebrand, 2011). The problem, as noted by Hanson (2014), is that the body of knowledge to support the development of volunteer driver programs is often case-study or anecdotal in nature, meaning limited technical guidance exists to support the day-to-day operation of these programs. Little research has explored the data uses and needs of these programs.

The New Brunswick context

The success of a regional, membership-based volunteer driver program in southwest New Brunswick called the Charlotte Dial-a-Ride that started in 2005 (Charlotte Dial-a-Ride, 2016) led to the development of a provincial policy in 2009 to see the development of similar programs province-wide facilitated through the Overcoming Poverty Together economic and social inclusion plan. A Crown Corporation called the Economic and Social Inclusion Corporation (ESIC) was established to provide a vehicle for concrete action

on the elements of the plan provincially through a central agency and locally through 12 Community Inclusion Networks (CINs) (Economic and Social Inclusion Corporation, 2016). Among its numerous initiatives, ESIC provided seed funding (which included small research projects) as well as operational funding to help establish regional volunteer driver programs in the 12 geographic areas covered by its CINs. Replicating the success of the Charlotte Dial-a-Ride initially proved elusive, with one failed effort in northwestern New Brunswick (T.R Hanson & Cameron, 2012). Nevertheless, by 2015, there were a total of eight volunteer driver programs at varying ridership levels operating in the province offering local and regional transportation to older adults and individuals in low income circumstances, and funded to some extent through ESIC.

A meeting was convened in August 2015 for all of the volunteer driver programs connected through ESIC, with seven of the eight programs participating. One outcome of the discussions was that the programs did not appear to have common performance metrics, such as a “trip” definition. This was creating challenges operationally and strategically, making it difficult to evaluate operations and the overall effectiveness of the initiative. A UNB Transportation researcher (Hanson) offered to work with the programs to catalogue their existing processes and identify areas for common data collection practices, which was undertaken with the research support of Caissie in Fall 2015.

3. Methodology

All eight of the volunteer driver programs were contacted following the August meeting and asked to provide details on the type of information collected from clients and drivers, as well as trip attributes and data input methods. A total of seven programs (all the attendees to the August meeting) offered this information, which was then organized in common categories by the researchers to permit comparison among groups.

4. Results

There were five types of information that were collected by all seven programs on a per-drive basis. This information is detailed in Table 1.

Table 1: Information collected by all volunteer driver programs

<i>Information</i>	Organization						
	1	2	3	4	5	6	7
Client Name or ID	X	X	X	X	X	X	X
Driver Name or ID	X	X	X	X	X	X	X
Drive Date	X	X	X	X	X	X	X
Drive Purpose	X	X	X	X	X	X	X
Destination	X	X	X	X	X	X	X

The data in Table 1 show that each group records (on a per trip basis) who the client is, who the driver is, when the drive was provided, the purpose of the trip and the destination, though the manner in which the data were collected (including wording of questions) may not have been the same.

There were also six types of information collected by more than half of organization on a per-drive basis, as described in Table 2. This information typically represented additional detail to that recorded in Table 1. In some cases, such as “Pick up time” and “Pick up location”, this information would have to be known by the group in order to dispatch the driver; the question was whether such information was recorded into a database.

Table 2: Information collected by more than half of the volunteer driver programs

<i>Information</i>	Organization						
	1	2	3	4	5	6	7
Amount owed by client	X	X		X	X	X	
Client trip distance	X	X	X		X	X	
Amount owed to volunteer	X			X	X	X	
Pick up time			X		X	X	X
Pick up location	X	X				X	X
Hours per trip		X	X		X	X	

The data in Table 3 show six types of information that may be common to only a few organizations, or may be unique. The unique information collected tended to be related to specific operational characteristics of the organization. For example, Organization 6 tracks both whether or not it was possible to fulfill a drive request, as well as when someone submits a request.

Table 3: Information collected by select groups

<i>Information</i>	Organization						
	1	2	3	4	5	6	7
Tracking companion rides			X	X			X
Mileage for volunteer	X					X	
Mileage outside region	X	X					
Drive ID	X	X				X	
Drive request fulfilled						X	
Request date						X	

Definition of a trip

Only one organization used the typical transportation engineering definition of a “trip”, which is one-way from one origin to one destination, while all of the others used “round trip”, which make have included several trips if additional stops were taken. In some cases this was a function of the operating characteristics of the organization, which may only provide round trips (e.g. home to destination, destination to home).

Data entry

The most popular data entry and management software is MS Excel (4 of 7), though MS Access databases are used by two organizations. Two organizations also employ MS Word for all aspects of their work. One reported this created considerable challenges for them to assemble their information for performance reporting. One organization inputs information via a web portal.

Trip purposes

A total of 4 of the 7 organizations did not employ a specific trip purpose category for every trip; instead form fields were open ended. There were general categories employed by all groups, which are profiled in Table 4. “Medical trips” was a category employed by all seven of the groups reporting.

Table 4: Categories of trip purposes collected by the volunteer driver programs

<i>Trip type categories recorded</i>	Number of groups
Medical trips	7
Food bank/soup kitchen	2
Shopping	2
Groceries	2
Education	2
Government agency or program	2
Work	1
Social	1
Recreation	1
Professional services	1
Open-ended	3

While all groups report “Medical trip” information, there were 13 different ways that these trip types were being reported, with the details shown in Table 5.

Table 5: Different definitions for "Medical" trips as collected by the groups

<i>Reporting of medical trip</i>	Organization						
	1	2	3	4	5	6	7
Hôpital	X						
Pharmacie	X						
Clinique	X						
“Medical” plus sub type		X			X		
Doctor’s Appointment			X				
Chemo Appointment			X				
Hospital Appointment			X				
Denture Clinic			X				
“Medical” no sub type				X			
Dentist					X		
Médical/Medical						X	
Medical Appointment							X
Chemotherapy/Radiation							X

Part of the variability can be explained by differences in the language of work (e.g Organization #1 works in French, Organization #6 works in both official languages, the remainder work in English); nevertheless the lack of uniformity does present challenges for interpreting and reporting medical trip information. For example, some organizations specifically detail cancer treatment related trips (e.g chemotherapy/radiation) while others included it as a subset of “Medical trips”.

5. Discussion

The development of the seven volunteer driver programs followed a somewhat evolutionary path that is evidenced in their data reporting methods, which have been adapted to meet their changing reporting and management needs. The “evolutionary path” which began with ground-up community support was instrumental in fostering the original development of the Charlotte Dial-a-Ride in 2005 and was missing

from the more top-down development of a failed regional dial-a-ride profiled by Hanson and Cameron (2012). The seven programs now appear to be at a point where collectively they are serving an important transportation need, but finding it difficult to quantify this collectively due to differing data collection methods. The impacts of the lack of performance data is likely becoming more pronounced as organizations increase ridership and geographic scope, taxing the organizations which still operate with a single individual responsible for management and dispatching. There appears to be evidence supporting the original hypothesis that begat Hanson's NSERC Discovery Grant application that a transportation engineering approach to data collection and reporting will be necessary to ensure these programs continue to thrive and survive.

6. Conclusions

While there are several common data collection features among the groups, some information was only collected by a few groups, likely a result of the evolutionary approach to managing their operations. There were differences in how "trips" are defined, how databases are organized, and how "trip purposes" are categorized and reported. Most notably, for the trip type collected by all seven groups (Medical), there were 13 different ways of reporting that type, which also included English, French, and bilingual terminology. Next steps will involve working with the groups to identify "early wins" for consistent data reporting that will allow immediate changes to a common data collection standard, while setting an agenda to determine what changes need to take place in the longer term to ensure adequate performance measures.

7. Acknowledgements

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8. References

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