

## Clinical Investigation

# Assessing the Older Driver: the Role of a Geriatric In-patient Unit

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**Background:** The assessment of the older driver is a significant challenge in geriatric care. Most studies of older drivers have focused on the outpatient assessment of driving safety. Inpatient geriatric rehabilitation units may provide an opportunity for the identification and assessment of the high-risk older driver.

**Methods:** Charts of all patients admitted to a Geriatric Inpatient Unit (GIU) for assessment and rehabilitation from 2000-2002 were reviewed. Patients with an active driver's license were identified by the Occupational Therapy (OT) admission assessment. The percentage of drivers who had a license suspension recommended by the GIU team was calculated. Demographic information and patient factors related to driving safety were analyzed using descriptive statistics and the Wilcoxon test.

**Results:** Of 232 patients admitted to the GIU during the study period, 39 had a valid driver's license (16.81%). The average age of drivers was 79.36 years. At time of discharge, 52.75% of drivers had a recommendation from the GIU team to discontinue driving. Driving assessment and outcome were not well-documented in medical progress notes and discharge summaries. Documentation of a recommendation of suspension to the Ministry of Transportation was poor. Physical concerns were more common than cognitive impairment as a reason for license suspension. Over half of patients with a license, transferred for rehabilitation from an acute care hospital, received a suspension recommendation. Driving was not identified as an issue prior to transfer.

**Conclusions:** Geriatric inpatient rehabilitation units represent an important opportunity to assess the high-risk older driver. Documentation of driving assessment and team recommendation is poor and could affect the outcome of license suspension. Protocols for identification and documentation of driving safety should be considered in all units providing care to older patients.

*Key words:* Driving, rehabilitation, assessment, geriatric

## INTRODUCTION

As the population ages, the number of older drivers is expected to increase significantly.<sup>1</sup> The older driver

has received greater attention in the last 10 years, as the awareness of the legal and ethical responsibilities of physicians has increased.<sup>2</sup> In Canada, the legal requirements for reporting drivers vary from province to province, but many jurisdictions have mandatory reporting of drivers thought to be unsafe for medical reasons. The assessment and management of older drivers is one of the biggest challenges of geriatric care.

Older patients have been shown to alter their driving habits with aging and with development of conditions such as dementia. However, many patients at risk do not recognize the impact of health conditions on driving ability and safety.<sup>3,4</sup> Physicians might recognize potential driving risk when a patient has an accident or a new diagnosis is made, but physicians are often unaware that an older patient is still driving.<sup>3</sup>

The sequelae of license suspension are significant, and loss of driving privileges may have impact on psychological and social functioning.<sup>5</sup> There is also a potential impact on the doctor-patient relationship, particularly if the family physician is involved in the decision to report the patient to the licensing authorities.

The issue of driving safety has been studied with geriatric outpatients. There has been little written in the literature about other sites where identification and assessment of driving risk is likely to occur with older patients. A literature search identified one research letter about the role of inpatient geriatric rehabilitation units in the assessment of the older driver.<sup>4</sup> The staff on the Geriatric Inpatient Unit (GIU) at St. Mary's of the Lake Hospital in Kingston, Ontario, noted that a small but significant portion of patients admitted for geriatric assessment and/or rehabilitation were still driving and intended to drive after discharge. This information had often not been identified by other

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professionals involved in the care of the patient prior to admission.

The goal of this paper was to determine the role of a geriatric inpatient assessment and rehabilitation unit in the evaluation of older drivers, by retrospectively reviewing the impact of admission on patients' driving status.

## METHODS

Charts for sequential patients admitted to the GIU from November 2000 to November 2002 were reviewed. Patients with active driver's licenses were identified using Occupational Therapy admission notes and reports from the team Multidisciplinary Conferences (MDC). Patients' driving status is documented as part of the OT assessment.

The charts were reviewed for documentation on the team's assessment and opinion of each patient's driving safety. This information was obtained from the OT discharge summary, the MDC documentation and from the medical notes and discharge summary. Routine assessments relevant to driving, including the Motor Free Visual Perceptual Test (MVPT), the MMSE, and Berg balance scale, were recorded. Referrals made to the OT Driver Assessment Program at St. Mary's of the Lake Hospital were documented. When recommendations were made in the chart for a driver to discontinue driving, the letter to the MTO was obtained from the secretary of the attending physician to clarify the final outcome. The main reasons for license suspension were documented where available.

Data was analyzed using descriptive statistics with SPSS statistical program. Scores on MMSE, MVPT, Berg Balance Score and the number of medications taken by patients whose driving license was suspended, were compared to those who did not receive a suspension, using univariate and bivariate descriptive statistics. Based on a review of the univariate and bivariate analysis, additional non-parametric statistical analysis was done using the Wilcoxon test (Mann-Whitney).

## RESULTS

Of 232 patients admitted to the Geriatric Inpatient Unit in the study period, 39 had a valid license at the time of admission. This represents 16.81% of

all patients admitted. The average age of admissions to the GIU was 79.4 years, and 43% of patients were male. The average age of drivers was 79.36 years (SD 5.59), and 64.1% of drivers were male. Almost half of drivers lived in Kingston (population 125,000), and only 15% lived rurally. A significant proportion of patients with a license lived alone (35.9%).

The majority of patients admitted to the GIU were transferred from Kingston General Hospital after admission for acute illness: 31.6% requiring rehabilitation after surgery and 34.2% transferred after a medical admission. The remainder of the subjects were admitted from the community for assessment and rehabilitation. Reasons for admission in this group included chronic pain, review of medications, and evaluation of cognitive changes.

Thirty-five percent of subjects with a valid license had not driven in the period immediately before admission but intended to resume driving after discharge. Only 2.6% of driving patients reported driving more than 7 times per week, but 30.8% drove between 2 and 7 times each week. More than 10% of subjects with licenses were uncertain about their intentions to drive after discharge, and 7.7% had a license but had not driven for several months prior to admission.

Forty-eight percent of drivers had license suspension recommended by the team and attending physician during admission. Of patients with suspension recommended, 7.7% had a letter written to the Ontario Ministry of Transportation (MTO) at the time of discharge. A larger group had a recommendation not to drive until further assessment at the OT Driver Assessment Program (15.4%) or by a health professional after discharge (10.3%). This follow-up was arranged with the family physician or with team-members at a follow-up clinic. Ten percent of the suspension group did not have evidence of a letter to the MTO, despite a final recommendation of license suspension at the time of discharge.

A significant proportion of drivers (43.6%) were felt to be safe to continue driving after team assessment of physical and cognitive abilities during hospital admission. Three patients intending to drive died during admission, representing 7% of the sample. One patient had been diagnosed with ALS during the rotation, one had a recent diagnosis of a brain tumour, and the other had multiple medical problems and died from cardiac causes.

Documentation of driving status and assessment was most complete in the Occupational Therapy assessment and discharge charting. Driving status was noted in over 90% of OT discharge summaries. Driving status was identified as an issue in the medical discharge summary in 33.3% of patients, usually when the license suspension was recommended or when the family physician was expected to follow up on a team concern. Driving assessment and status was only noted in the medical progress notes of 10.5% of subjects.

The most common reason documented by the team for initiating driving assessment was patients' physical status/limitations (47.4%). These concerns included reaction time, neck range of motion, and grip strength. Cognitive impairment was noted as the main issue in only 13.2% of drivers. Medical illness was documented as the primary driving concern in 10.5% of subjects, although the specific conditions affecting driving were poorly documented.

The majority of GIU patients were transferred from Kingston General Hospital (KGH) for rehabilitation after acute illness. Of the 25 patients who had active licenses at time of admission to KGH, 12 had a recommendation of suspension at time of discharge from the GIU. Ten of these 25 patients were discharged without a license suspension and three died during the GIU admission.

A descriptive comparison of patients receiving a driving suspension at discharge to those who did not is seen in Table 1. Results on functional tests tended to be higher in drivers than suspended drivers. Only the Berg balance score was statistically significantly different in those continuing to drive (normal approximation  $P$  value = 0.006).

## DISCUSSION

This retrospective review of an inpatient geriatric unit found that more than half of elderly patients

who hold a valid driver's license at time of admission receive a recommendation to discontinue driving at time of discharge. Although the percentage of patients admitted to the Geriatric Inpatient Unit who were intending to drive after discharge is small (16%), this group represents older drivers with a high number of potential safety concerns.

The results of this study found a higher percentage of older patients intending to resume driving than the only other study of older in-patients. In a research letter, Pullen and colleagues<sup>4</sup> found that only 7.4% of German patients (mean age 80 years) intended to drive after discharge and only 14% of these patients were judged medically fit to drive. Cognitive deficits were found to be the most common reason for driving suspension in their study, with impaired vision being the second most commonly cited reason. Studies in outpatient clinics have also found cognition to be the primary reason for driving suspension.<sup>6,7</sup> All patients interviewed in Pullen's study viewed themselves as safe drivers, although 78% were deemed unfit to drive. In our study, physical limitations were more commonly the major factor in license suspension, likely reflecting the rehabilitation focus of the admission.

All patients admitted to the GIU in the present study had been seen by health professionals shortly before admission. Patients admitted from the community were all seen by professionals (Allied-health or physician) from the Southeastern Ontario Regional Geriatric Program (RGP), and patients transferred from KGH were all seen by RGP Consult Team Assessors and by the KGH medical teams. Driving was not cited as an issue for any of the patients admitted. It is relevant that over 60% of subjects with active licenses had recently been at an acute care hospital without concerns about driving being raised. While it may be thought that this falls outside the mandate of an acute admission, the legal responsibility for the unsafe driver after dis-

**Table 1. Descriptive comparison of driving assessment outcome groups at discharge**

Variable	Not Driving At Discharge				Driving at Discharge			
	Mean	(SD)	n	(%)	Mean	(SD)	n	(%)
Male gender			12	(63.2)			10	(58.8)
Age (years)	80.3	(6.39)	19	(100)	79.2	(4.49)	17	(100)
MMSE	27.1	(2.63)	18	(100)	27.7	(1.71)	15	(88.2)
MVPT	29.5	(5.16)	18	(94.7)	31.2	(3.15)	16	(100)
Berg Balance	32.7	(13.5)	18	(94.7)	44.6	(9.03)	17	(100)
No. of Medications	6.7	(2.82)	18	(94.7)	6.9	(3.65)	17	(100)

charge includes physicians involved with the patients' care in the recent past.<sup>8,9</sup>

The suspension of a driving license has large ramifications for the doctor-patient relationship. Although it is not well studied, most physicians have had experiences with driving assessment and license suspension severely affecting their relationship with patients. Team-members reported that some of the patients in this study whose licenses were suspended were angry about the assessment and felt that the loss of their driving license outweighed the functional gains made by involvement with a rehabilitation program. As driving status was not discussed by professionals referring patients for admission, it came as a surprise to many patients that their driving abilities were being assessed. Advising patients of the inpatient team's role in driving evaluation may decrease the upset caused by the evaluation but may deter some people from accepting admission.

The quality of documentation related to the patients' driving status at discharge was concerning. There was inconsistent inclusion of driving status and recommendations in summaries sent to patients' family physicians, resulting in confusion for the receiving physician. Likewise, evidence of documentation to the Ministry of Transportation was frequently lacking. Clearly, it is important to review and assess older drivers when indicated, but without adequate documentation and information sharing, the time spent may not meet provincial legal reporting requirements. A recent Canadian survey found that 7.6% of older drivers continued to drive after instructions to stop driving.<sup>5</sup> Poor communication with the family physician and inadequate documentation increase the likelihood of this problem.

As a result of these findings, the GIU will include patients' driving status as a routine documentation item on the initial MDC form. This will be reviewed at the final MDC and changes to the driving recommendation documented. In addition, housestaff are now oriented on the process of driving assessment for GIU inpatients and the outcome of assessment must be included on discharge summaries. A tracking system to ensure that all recommendations to suspend the license result in a letter from the attending physician to the MTO is being developed. Similar approaches could be considered in all units caring for older inpatients.

There are several limitations to this study.

Patients' driving status may have been incorrectly documented, and patients who were still driving may have been missed. Clarification of the reasons for driving assessment and suspension was not easy, because documentation and follow-up of patients referred for further evaluation was not complete due to poor documentation. However, the identification of driving patients is part of the routine Occupational Therapy admission assessment on the GIU, which minimized possible inaccuracy. Only four patients had uncertain driving status based on OT notes and in all cases other documentation suggested that patients were not driving before admission and did not intend to resume. These patients were not included in the analysis. Although the study was retrospective, this may have minimized the impact of a prospective study on the usual approach to driving assessment taken by the GIU team.

## CONCLUSIONS

A small but significant percentage of older patients admitted for geriatric assessment and rehabilitation are still driving or intend to resume driving. The majority of these patients were felt to be unsafe to drive at time of discharge. Driving had not been identified as an issue by the services referring patients for admission. The majority of patients transferred for rehabilitation after acute care admission were felt to be unsafe to drive at discharge from the rehabilitation program. Most drivers were felt to be unsafe for physical reasons rather than because of cognitive impairment. Documentation of assessment and recommendations was not complete in many cases. Clarification of driving status and assessment of fitness to drive should be considered in all inpatient settings caring for older patients. Establishing protocols for the identification, assessment and documentation of older patients' driving safety will make this process more effective.

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