

PERSPECTIVES

Reporting by Physicians of Impaired Drivers and Potentially Impaired Drivers

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Physicians routinely care for patients whose ability to operate a motor vehicle is compromised by a physical or cognitive condition. Physician management of this health information has ethical and legal implications. These concerns have been insufficiently addressed by professional organizations and public agencies. The legal status in the United States and Canada of reporting of impaired drivers is reviewed. The American Medical Association's position is detailed. Finally, the Bioethics Committee of the Medical Society of the State of New York proposes elements for an ethically defensible public response to this problem.

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Motor vehicle accidents (MVAs) are the third leading cause of death and injury in the United States. Often, alcohol and excessive speed are implicated, but disease and disability also play a role.¹ The latter are addressed herein. In America, with the population aging, drivers include more persons with physiological changes of normal aging as well as diseases and disabilities common in the elderly.² Driving safety is an increasingly important concern in geriatric care since visual, auditory, cognitive, and motor abilities often are impaired in elderly persons.^{3,4} Medical conditions that compromise driving safety remain an important concern for health professionals. Physicians may be in a conflicting role of advocating for patients and simultaneously protecting public safety, although these concerns are not necessarily dichotomous.

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BACKGROUND

Although driving is formally recognized as a privilege, government-directed programs and other social structures suggest that driving is a near universal and essential function in our society. However, our society poorly supports individuals who no longer drive. Patients who forego driving often lose independence, compromise their ability to work and provide for their dependents, and have difficulty maintaining social contacts, continuing involvement in personal interests, and participating in community activities. These losses have profound implications for many patients in terms of emotional and physical well-being, quality of life, and evaluation of self-worth. The physicians' role often is pivotal in determining physical and mental conditions which may impair a patient's ability to drive. In some situations, physicians have an ethical obligation to the safety and welfare of the community to report such disabilities to the authorities. However, this obligation must be in proportion to actual and relative risk and, in order to be just, must cover all disabilities that convey similar public risk. Furthermore, this disclosure must lead to concrete actions in the interest of public safety. Otherwise, the breach of patient confidentiality by physician cannot be justified ethically.

According to the National Highway and Transportation Safety Administration (NHTSA), crash involvement rates per miles driven remain low until age 74 and increase sharply thereafter.⁵ For drivers over age 85, crash rates are only 1,500 per 100 million miles compared to 2,000 for drivers ages 15 to 19. However, younger drivers drive twice the miles as older ones, and absolute numbers indicate that crashes are primarily a young driver problem. Older drivers are more frail and fatality rates per miles driven among drivers over 85 years are 2.5 times that of the youngest drivers.

Patients who may be considered for revocation or limitation of driving privileges include patients with an ongoing or persistent impairment such as visual defects or dementia, or patients with a propensity for episodic disability such as epilepsy, cardiac dysrhythmias, or substance dependency.

Most conditions that compromise driving safety produce impairment along a continuum, e.g., hearing loss, visual impairment, and cognitive impairment. The pres-

ence of a condition in and of itself may not correlate with risk. Particular features of a condition may be a better index of driving risk. For example, mildly demented drivers who have difficulty performing visuospatial skills such as copying a figure, are more likely to have poor driving skill.^{6,7}

Alzheimer dementia is of particular concern for traffic safety given its prevalence and its effect on driving skill. Alzheimer dementia occurs in about 10% of persons over the age of 65 years and in 20% of persons over age 80. A case-controlled study of MVAs among Alzheimer patients suggested an odds ratio of 7.9.⁸ Interactive driving simulators and performance-based road tests can provide an objective measure of driving ability in demented persons.^{9,10} A licensing agency assessment using a battery of tests for elderly drivers with dementia or other aging-related medical conditions is currently being field tested.¹¹ Since 1988, California physicians have been required to report older persons with Alzheimer's disease and related disorders to their local health departments. This information is then reported to the Department of Motor Vehicles (DMV).¹²

Visual impairments are associated with MVAs.¹³ In a 5-year, case-controlled study, drivers with cataracts were 2.5 times more likely to be in an at-fault MVA.¹⁴ Other ophthalmic conditions which may impair driving ability include myopia, glaucoma, and macular degeneration. Screening by the DMV for visual acuity is routine, albeit crude, and when required at license renewal, may be associated with decreased fatal crash risk for older drivers.¹⁵

Patients diagnosed with sleep apnea syndrome are 2 to 6 times as likely than healthy control subjects to be involved in a MVA.^{16,17} Migraine headaches may be associated with a 2-fold risk of MVAs. Benzodiazepine use confers a similar risk of MVAs.^{18,19} Of note, the use of cellular telephones while driving is associated with a quadrupling of the risk of a collision during the brief time interval involving a call.²⁰ One study found that talking on a cellular telephone more than 50 minutes per month while driving was associated with a 5.59-fold increased risk of a traffic accident.²¹

Epilepsy is a paradigm disease that involves physicians as both care givers to patient-drivers and consultants to regulatory authorities. Driving restrictions for people with seizure disorders are designed to protect the public safety but may interfere with personal freedom and livelihood.²² As opposed to dementia, epilepsy is more common in younger populations who commonly have family and child-rearing responsibilities. To avoid loss of driving privileges, patients with epilepsy may choose not to report seizures to their physician or to the DMV.¹¹ There is no clear consensus among physicians as to when persons with epilepsy may appropriately resume driving. Data suggest a 93% risk reduction for a MVA after 1 year of being free of seizure.²³ Seizure disorders are disproportionately reported compared with other similarly disabling neurologic conditions,²⁴ such as Parkinson's disease, which greatly compromise driving ability early in the disease course.²⁵

Physicians are not well prepared to evaluate for patient suitability to drive.^{7,26} The NHTSA notes, "Disability

is multidimensional and extremely complex . . .", and "Disabilities are rarely if ever isolated entities. Rather, they almost always reflect the presence of chronic medical conditions, the positive and adverse aspects of their treatments . . ." The NHTSA appropriately recognizes the lack of well-validated measures of physical and cognitive disability pertaining to driving and cites this deficiency in their research agenda for older drivers.²⁷ Compounding the difficulty in objectively measuring conditions that potentially affect driving ability, some judgment must be made about the nature of the specific disability, the degree of disability, the incidence of episodic disease, and the likelihood of a driving mishap. Objective assessments of excessive driving risk must be followed by assignment of responsibility to effect cessation of driving.

RESPONSIBILITY FOR DRIVING CESSATION AND PHYSICIAN DUAL AGENCY

Cognitively intact, physically impaired drivers are responsible for decisions to continue driving. Physicians must fully inform patients about driving risk, and risk stratification should follow objective, validated, medical criteria. Patients who disagree with a physician's recommendation to cease driving should be encouraged to seek an additional opinion.

Some impaired drivers avoid their responsibility to cease driving due to emotional and logistical concerns of dependence and immobility. Physicians should consider family support in this life-event. Family members can provide emotional support to the patient, can reinforce the physician's concerns, can assist the patient in articulating his or her concerns, and can play an important role in developing strategies for patient safety and welfare. For example, family members can encourage the patient to have a needed cataract excision, may volunteer to transport the patient to occupation therapy sessions, and can offer rush hour and nighttime transportation to minimize patient exposure to adverse driving conditions.

For a number of reasons, physicians should be restrained in reporting to authorities drivers with a mild or moderate increase in driving risk. First, this degree of added risk is on the same order as other conditions where reporting is not considered professionally or legally appropriate, e.g., benzodiazepine use. Second, the burdens of loss of driving privilege may be out of proportion to threat to personal and public safety. Third, physician-as-policer is of questionable long-term, net benefit to patients. Patients may avoid health services in these circumstances. This avoidance would limit physicians' effectiveness in caring for such patients and, by corollary, preclude physician involvement in driver safety. Physicians should educate patients about relevant conditions which impair driving, and be attentive to increases in disability over time. For example, a patient with cataracts should be educated as to its early effects on night vision. A patient declining treatment for sleep apnea should be counseled about the

increased driving risk associated with the untreated condition. Where driving risk is profound and the patient refuses to cease driving, physicians should contact the licensing agency. The marked and immediate risk to patient and public safety outweigh the potential consequences of reporting on the future care of patients.

Demented patients may lack insight into their impairment and may not be morally culpable for continued driving. Physician reporting of demented drivers may have little effect on their driving, if the demented person does not comprehend the implications of loss of licensure. For demented patients, responsibility for driving cessation falls on other persons, such as the next-of-kin or legal guardian. A number of practical issues confront these patients and their families. The patient may be resistive, argumentative, and not amenable to reasoning. Some family members have resorted to disabling the car, removing the car from the place of residence, confiscating car keys, and canceling auto insurance. Some mildly demented persons have responded by calling the police for a supposedly stolen car, having the disabled car towed to a repair shop, and having a locksmith replace keys. Some family dynamics may not allow for paternalistic care of the recently demented person. Driving cessation by one spouse may have implications for a nondriving spouse and often places new responsibilities on family members for transporting these persons to appointments, shopping, etc. The ethical license of physicians to disclose to authorities information about demented drivers differs from disclosure about nondemented drivers. Demented drivers may lack insight and judgment to recognize risk and to advocate for their safety. The physician has an obligation to act with strong paternalism on behalf of such a patient, particularly where family support is lacking.

A physician's concern about being a dual agent of patient and state is a false dichotomy. Generally, conditions which endanger public safety also endanger the safety of the driver and vice versa. Physicians' acting on behalf of the patient's welfare also serve public interests. However, situations may arise where there may be honest disagreement about the nature of the risk, that is, the degree of risk is not considered to be prohibitive by the patient, but may be prohibitive in terms of public safety. For example, the risk of a seizure while driving may be acceptable to the afflicted individual who is weighing the burdens of driving cessation. In these circumstances, and in the absence of objective, external parameters defining driver impairment, the physician should remain the patient's advocate. The physician should maximize patient safety through education and treatment, and otherwise promote the patient's interests within the limits of professional standards.

CONFIDENTIALITY

Confidentiality is a cornerstone of the patient-physician relationship. Patients necessarily share sensitive in-

formation with their physicians in the course of receiving care. Physician divulgence to third parties of patients' physical or mental impairments may breach confidentiality, even at times when public safety is implicated. Voluntary reporting programs are often unsuccessful because physicians may not report physical or mental impairments for fear of being sued by patients for breach of confidentiality. Compulsory reporting laws may attenuate this fear since they usually provide immunity to the physician. Yet such laws may discourage patients from sharing important medical information with their physician.²⁸

Exceptions exist to the physician's obligation to maintain confidentiality. These exceptions are ethically and legally justified because of overriding social considerations. Where a patient is likely to harm another person and there is a reasonable probability that the patient may carry out the threat, the physician should take reasonable action to protect the intended victim, including notification of law enforcement authorities.²⁹ Breaches of confidentiality also are ethically appropriate if the patient poses a serious threat to the health or welfare of the public or themselves. The ethical position that confidentiality is not absolute has legal corollary. In the famous Tarasoff case, the California Supreme Court ruled that the duty of confidentiality was outweighed by the duty to protect the victim.³⁰ Here, a psychiatrist learned during therapy that a patient intended to kill his girlfriend. The doctor maintained confidentiality, and the woman was killed by that patient. When confidentiality is breached in the interest of public welfare, only the minimum relevant information should be disclosed, and the number of persons privy to the information should be minimized.

CURRENT REGULATIONS AND LAWS

Virtually all states have established policies for the identification of drivers with physical or mental impairments. The majority of states provide only for voluntary physician reporting. A few states have mandatory reporting laws. For example, Delaware, New Jersey, and Nevada require reporting for epilepsy. California and Utah also mandate reporting of dementia and other cognitive impairments.¹² Failure to report may lead to physician liability if the patient as a driver is involved in an automobile accident. In California, it may also be grounds for disciplinary action by the State Medical Board.³¹

Although a majority of states have voluntary reporting guidelines, the State of Maine, in particular, has a well-developed process for reporting. Since many impaired drivers were frequently not reported because of fear of liability and breach of confidentiality, a Medical Advisory Board was established to develop uniform criteria with regard to the physical, emotional, and mental competence to operate a motor vehicle. Nonliability legislation was first passed followed by the drafting and implementation of Driver Impairment Profiles. Most important, the decision to allow operation of a motor vehicle was

shifted from physicians to the Maine DMV, with the physician supplying the pertinent medical information on a reporting form.³²

In Canada, current legislation requires physicians to know which medical conditions may impede driving ability, to detect these conditions in their patients and to discuss with their patients the implication of these conditions. The requirements to report unfit drivers vary among the provinces, and the interpretations of the law vary among the courts; therefore, physicians' risk of liability is unclear. Physicians may be sued by their patients if they fail to counsel their patients on the dangers of driving associated with certain medications or medical conditions. Physicians may also face legal action by victims of motor vehicle accidents caused by their patients if the court decides that the physicians could have foreseen the danger of their patients' continuing to drive. Physicians' legal responsibilities to report patients with certain medical conditions override their ethical responsibilities to keep patients' medical histories confidential.³³

The U.S. Federal Motor Carriers Safety Regulations, administered by the Department of Transportation, require most commercial vehicle drivers to be certified by a medical examiner. Should an accident occur, the physician who examined the driver may be found liable since such physicians' primary responsibility is to the public. Some medical diagnoses, such as insulin-requiring diabetes mellitus, seizure disorders, and significant visual or hearing defects, are automatically disqualifying, no matter how well the disease is controlled. In spite of these seemingly stringent regulations, most certification examinations of commercial drivers are simple, and relatively few drivers are disqualified from driving a commercial vehicle such as a truck or bus.³⁴

New York is a state that offers no statutory imperative for physicians to report a suspected impaired driver to the authorities. Generally, physicians may not divulge medical information about their patients to others without patient consent unless otherwise provided by law, e.g., suspected child abuse, and wounds from bullets or knives. In New York, the DMV can require any licensed driver or applicant to submit to a medical examination by a personal physician who completes this report on behalf of the patient. The patient, having requested the physician to prepare a medical report, has no cause of action against the physician for completing the report honestly and in good faith, even if the report contains information detrimental to the patient.³⁵

Although a number of New York court decisions have held that a patient has a recognized action for damages against a physician for the unauthorized disclosure of confidential medical information,³⁶ the courts note that confidentiality is not absolute and its breach is actionable only if it is unjustified. In fact, New York and other states have provisions that grant persons immunity for good faith acts. Examples include legal immunity for peer review or quality assurance activities of hospitals or county

medical societies; the requirement of physicians and other licensed persons to report to the Board for Professional Medical Conduct information which reasonably appears to show that a medical colleague is guilty of professional misconduct; the requirement that physicians and other persons report to the Department of Health when there is reasonable cause to believe that a person in a residential health care facility has been physically abused, mistreated or neglected; and the requirement that physicians and other persons report suspected child abuse or mistreatment.

THE AMERICAN MEDICAL ASSOCIATION

In 1997, the American Medical Association (AMA) resolved to study physicians' legal and ethical obligations with respect to reporting physical and medical conditions which may impair a patient's ability to drive and to investigate the potential legal liability to which physicians may be exposed as a result of caring for patients with these physical and medical conditions. The Council on Ethical and Judicial Affairs (CEJA) of the AMA was assigned responsibility and its report (I-1-98) concluded that the problem of impaired drivers illustrates the fundamental conflict between the responsibility physicians have to individual patients and their responsibility to society. The CEJA report included the following points:

1. Regardless of state-reporting policy regarding impaired drivers, physicians should make an assessment of driving risk in cases that elicit their concern. Physicians should weigh the risks and benefits of the patient's driving on an individual, case-by-case basis.
2. An open and tactful discussion with the patient and family about the risks of driving is of primary importance. In the case of incompetent patients, communication with proxies and family members play a greater role.
3. Efforts made by physicians to inform patients, advise them of their options, and negotiate a workable plan may render reporting unnecessary.
4. In those situations where clear evidence of substantial driving impairment implies a strong threat to patient and public safety, and where physicians' advice to discontinue driving privileges is disregarded, physicians have an ethical duty to notify the DMV of the medical conditions which would impair safe driving. This duty exists even when reporting impaired drivers is not mandated by law. Physicians should explain to their patients this obligation to report. Departments of Motor Vehicles should be the final determiners of the inability to drive safely.
5. In fulfilling their duty to report, physicians should limit their necessary breach of confi-

dentality by releasing only the minimal amount of pertinent information and should ensure that reasonable security measures are used in handling this information.

6. In those cases where an impaired driver continues to drive despite removal of licensure following reporting, the physician's responsibility to intervene further becomes more compelling. At this point, the duty to involve the patient's family and to report the patient to the proper authorities becomes paramount.

Delegates at the 1998 AMA Interim Meeting were divided over the issue of physicians' responsibility toward impaired drivers and raised concerns about increased legal liability. For example, physicians may be sued for breaching patient confidentiality or perhaps even for not reporting an impaired patient. The issue was so controversial that it was sent back to CEJA for reconsideration. In 1999, the CEJA issued a subsequent report (I-1-99) affirming its prior position and recommending that physicians and their state medical societies should endeavor to create statutes that promote the best interests of patients and the community, and safeguard physicians from liability in good faith reporting.

MEDICAL SOCIETY OF THE STATE OF NEW YORK

The Committee on Bioethical Issues of the Medical Society of the State of New York discussed at length the topic of physician's responsibilities in caring for impaired drivers. The Committee reaffirms that the primary advocacy of the physician should be towards the patient, and holds that the duty of confidentiality is important but not absolute. The physician has a moral obligation to report information that might seriously and directly impact on the patient's or public's safety, that generally, reporting should be voluntary and not compulsory, that the physician should be immune from civil or criminal penalties as a result of the reporting (or nonreporting), provided the physician acts in good faith and without malice. Physicians and other health care professionals must be included in any regulatory process where medical criteria are employed and clinical information is interpreted.

The Committee recommends the following:

1. Physicians should, first and foremost, advocate for the patient's interest and welfare.
2. Professional organizations should continue to examine the issue of medical impairment of driving and develop objective, validated measures of medical disability, and defined thresholds of risk tolerance. Common physical examinations have not been revealing,⁷ and physicians may not be confident in their ability to assess and determine driving risk. Validated measures should address degree of impairment and risk of MVA, and should com-

prehensively address all medical conditions that confer similar, substantial risk to drivers and the public.

3. Physicians should educate and counsel patients, and where appropriate, their families, on the conditions compromising driving ability. Informed patients should be morally responsible for continued driving against medical advice. For drivers at marked risk for an MVA, and who persist driving despite counseling, physicians should be ethically obligated to notify DMV, so long as this disclosure results in meaningful action by the authorities. This disclosure, if made in good faith, and after substantial patient counseling, should be immune from legal liability. Furthermore, this disclosure may be limited to a recommendation to DMV for driver retesting, in order to protect patient confidentiality. Disclosure of additional information may be a necessary condition of relicensure.
4. The state, in collaboration with professional organizations, may require reporting for highest risk conditions, as long as the state is prepared to undertake careful consideration of each case reported. This requirement should not establish a legal obligation to report to the DMV, but should establish a professional standard of performance.
5. Licensing agencies, collaboratively with health professionals, should study methods to identify at risk drivers. It is unproved that more frequent road testing with advancing age produces the desired benefit.³⁷ As mentioned above, more sensitive tests for driver ability should be developed.
6. In order to reduce potential conflicts of advocacy, public legislative bodies and regulatory agencies should develop clear reporting guidelines for conditions which confer substantial driving risk, and the DMV should require a periodic screening exam for all drivers. This exam should be based on clinical science and of proven and adequate sensitivity, and may be administered by the driver's personal physician or a health professional designated by the DMV.
7. State agencies should assist in coordinating resources for patients and families for alternatives in transportation, such as subsidized taxi services, shuttle services, and volunteer transporters. State public health agencies should examine the public health benefits of providing transportation to populations who should cease driving. Limited success of public transportation in much of this country is an enormous sociological and political issue, whose reexami-

nation may be demanded by the elderly, as this population grows in number and influence.

CONCLUSIONS

Physicians' response to identification of driver impairment should be guided first by traditional obligations to patient welfare and safety. A consensus between public agencies and health professionals should be negotiated regarding acceptable thresholds of tolerance of driving risk for all conditions which confer similar significant risk. Physicians are justified ethically in unilateral disclosure when patients refuse to accept determinations of serious and undisputed driving risk, as long as this disclosure results in meaningful improvement in patient or public safety.

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REFERENCES

1. The American Thoracic Society. Sleep apnea, sleepiness, and driving risk. *Am J Resp Crit Care Med.* 1994;150:1463-73.
2. Reuben DB, Silliman RA, Traines M. The aging driver. *Medicine, policy and ethics.* *J Am Geriatric Soc.* 1988;36:1135-42.
3. Marottoli RA. Driving safety in elderly individuals. *Conn Med.* 1993;57:277-80.
4. Stamatiadis N, Deacon JA. Trends in highway safety: effects of an aging population on accident propensity. *Accid Anal Prev.* 1995;27:443-59.
5. The National Highway Transportation Safety Administration. Addressing the safety issues related to younger and older drivers. Available at: <http://nhtsa.dot.gov/people.injury.olddrive/pub/Chapter1.html>. Accessed October 3, 1999.
6. Marottoli RA, Cooney LM Jr, Wagner R, Doucette J, Tinetti ME. Predictors of automobile crashes and moving violations among elderly drivers. *Ann Intern Med.* 1994;121:842-6.
7. Johansson K, Bronge L, Lundberg C, Persson A, Siedeman M, Viitanen M. Can a physician recognize an older driver with increased crash risk potential? *J Am Geriatr Soc.* 1996;44:1198-204.
8. Friedland RP, Koss E, Kuman A, Gaine S, Metzler D, Haxby JV, Moore A. Motor vehicle crashes in dementia of the Alzheimer type. *Ann Neurology.* 1988;24:782-6.
9. Cox DJ, Quillian WC, Thorndike FP, Kovatchev BP, Hanna G. Evaluating driving performance of outpatients with Alzheimer disease. *J Am Board Family Pract.* 1998;11:264-71.
10. Hunt LA, Murphy CF, Carr D, Duchek JM, Buckles V, Morris JC. Reliability of the Washington University Road Test. A performance-based assessment for drivers with dementia of the Alzheimer type. *Arch Neurology.* 1997;54:707-12.
11. Janke MK, Eberhard JW. Assessing medically impaired older drivers in a licensing agency setting. *Accid Anal Prev.* 1998;30:347-61.
12. Reuben DB, St. George P. Driving and dementia. California's approach to a medical and policy dilemma. *West J Med.* 1996;164:111-21.
13. Charman WN. Vision and driving: a literature review and commentary. *Ophthalmic Physical Opt.* 1997;17:371-91.
14. Owsley C, Stalvey B, Wells J, Sloane ME. Older drivers and cataract: driving habits and crash risk. *J Gerontol.* 1999;54:M203-11.
15. Levy DT, Vernick JS, Howard KA. Relationship between driver's license renewal policies and fatal crashes involving drivers 70 years or older. *JAMA.* 1995;274:1026-30.
16. Barbe Pericas J, Munoz A, Findley L, Anto JM, Agusti AG. Automobile accidents in patients with sleep apnea syndrome. An epidemiological and mechanistic study. *Am J Resp Crit Care Med.* 1998;158:18-22.
17. Teran-Santos J, Jimenez-Gomez A, Cordero-Guevera J. The association between sleep apnea and the risk of traffic accidents. Cooperative Group Burgos-Santander. *N Engl J Med.* 1999;340:847-51.
18. Thomas RE. Benzodiazepine use and motor vehicle accidents. Systematic review of reported association. *Can Fam Physician.* 1998;44:799-808.
19. Norton R, Vander Hoorn S, Roberts I, Jackson R, MacMahon S. Migraine: risk factor for motor vehicle driver injury? *Accid Anal Prev.* 1997;29:699-701.
20. Redelmeier DA, Tibshirani RJ. Association between cellular-telephone call and motor vehicle collisions. *N Engl J Med.* 1997;336:453-8.
21. Violanti JM, Marshall JR. Cellular phones and traffic accidents: an epidemiological approach. *Accid Anal Prev.* 1996;28:265-70.
22. Krumholz A, Fisher RS, Lesser RP, Hauser WA. Driving and epilepsy. A review and reappraisal. *JAMA.* 1991;265:622-6.
23. Krauss GL, Krumholz A, Carter RC, Li G, Kaplan P. Risk factors for seizure-related motor vehicle crashes in patients with epilepsy. *Neurology.* 1999;52:1324-9.
24. McLachlan RS, Jones MW. Epilepsy and driving: a survey of Canadian neurologists. *Can J Neurological Sci.* 1997;24:345-9.
25. Heikkila VM, Turkkka J, Korpelainen J, Kallanranta T, Summala H. Decreased driving ability in people with Parkinson's disease. *J Neurosurg Psychiatry.* 1998;64:325-30.
26. Marshall SC, Gilbert N. Saskatchewan physicians' attitudes and knowledge regarding assessment of medical fitness to drive. *CMAJ.* 1999;160:1701-4.
27. The National Highway Transportation Safety Administration. Literature review of the status of research in the transportation and mobility needs of older women. Available at: <http://nhtsa.dot.gov/people.injury.olddrive/nsrpt.html>. Accessed October 3, 1999.
28. Salinsky MC, Wegener K, Sinnema F. Epilepsy, driving laws, and patient disclosure to physicians. *Epilepsia.* 1992;33:469-72.
29. Council on Ethical and Judicial Affairs. Code of Medical Ethics. Current Opinions with Annotations. Chicago, Ill: American Medical Association; 1997: 77.
30. Tarasoff v Regents of the University of California, 55/P2d 334 (Cal 1976).
31. Fitten LJ. The demented driver; the doctor's dilemma. *Alzheimer Dis Assoc Disord.* 1997;11(suppl 1):57-61.
32. Josefowicz TH. Development and application of medical guidelines for drivers in the state of Maine. *Epilepsia.* 1994;35:688-92.
33. Coopersmith HG, Korner-Bitensky NA, Mayo NE. Determining medical fitness to drive: physician's responsibilities in Canada. *CMAJ.* 1989;140:375-8.
34. Pommerenke F, Hegmann K, Hartenbaum NP. DOT examinations: practical aspects and regulatory review. *Am Fam Physician.* 1998;58:415-26.
35. Clark v Gerall 209 NYS 2d 564 (Sup Ct, Kings Co, 1960).
36. MacDonald v Chuger 84 AD 2d 482, 446 NYS 2d 801 (Sup Ct, App Div, 4th Dept, 1982).
37. Rock SM. Impact for changes in Illinois drivers license renewal requirements for older drivers. *Accid Anal Prev.* 1998;30:69-74.