Are medical reports on fitness to drive trustworthy?

T S Steier, E Kitai, A Wiener, E Kahan

Purpose: Previous studies have shown that physicians often have poor knowledge of the medical restriction on fitness to drive, or submit poor quality medical reports. To determine the reliability of physicians’ reports on fitness to drive, the medical data provided on the standard medical fitness form was compared with the additional data collected on repeated assessment.

Methods: A random sample of 100 applicants for a driver’s licence aged more than 49 years who submitted the standard medical form were asked to provide, from their regular family doctor, confirmation of their health status and/or additional medical data in order to make a re-evaluation.

Results: The rate of rejection for a licence for medical reasons was 3% on the basis of the standard evaluation and 17% on the basis of the re-evaluation (p<0.001).

Conclusion: This study shows that the random evaluation of physician assessments of applicants for a driver’s licence increases the detection rate of medical problems that can affect fitness to drive. The alarming difference in the rate of rejection between the two assessments may reflect a lackadaisical attitude of medical professionals toward the licence assessment procedure and/or physician unawareness of the medical restrictions on fitness to drive. Results of this study suggest that this subject must be included in medical education programmes.

SUBJECTS AND METHODS

Participants
A random sample of 100 applicants for a driver’s licence were requested to provide, from the applicant’s regular family doctor, confirmation of their health status by performing a new medical examination and/or giving additional medical data, to undergo re-evaluation for medical information in addition to that provided in the standard form. Inclusion criteria were (a) age over 49 years and (b) submission of a standard form signed by a physician other than the applicant’s family doctor. The latter was determined by the physician’s response to the final item on the form: (1) I am the applicant’s family physician in the health management organisation; (2) I identified the applicant only by his/her ID; (3) I personally know the applicant, and the medical data correspond with what I know about him/her. Information on the physician’s specialty (general practitioner, specialist in family medicine, internist, cardiologist, surgeon, etc) was also obtained from the form.

Sample size
To the best of our knowledge, there is no information in the medical literature on the proportion of medical reports that are missing significant data that would cause an applicant for a driver’s licence to be rejected. Therefore, in determining sample size, we opted for 90%, the “safest” rate when p is unknown, with a confidence level of 95% (α = 0.05) and an absolute precision of 10% points on either side of the proportion for the statistical calculation. Using the formula, \( n = Z^2_{1-\alpha}P(1-P)/d^2 \), we found that a minimum sample size of 95 was necessary for this study. This figure was rounded to 100.

Data analysis
According to local, unpublished data, professional drivers (truckers and bus and taxi drivers) have a greater tendency than non-professional drivers (private cars) to undergo examination by a private doctor. Therefore, we classified the sample into two groups by type of licence requested. Statistical analysis was performed with the Epi-Info statistical package. The distribution of discrete variables (gender, medical report, type of driving licence, physician’s specialty, reporting doctor—
same as on original form/other, report of additional medical data—yes/no, provision of medical data that could lead to a change in the original decision—yes/no) was analysed by $\chi^2$ test, and continuous variables were compared by two tailed Student’s $t$ test. A level of 5% was considered significant.

RESULTS

Of the 100 applicants asked to provide additional medical data, 66 (66%) responded, including 42 applicants for a private driver’s licence and 24 applicants for a professional driver’s licence. The descriptive analysis of the main results by type of licence requested is shown in table 1. Except for age and gender distribution, none of the characteristics examined were significantly different between the groups.

On the basis of the original application, three of the 100 applicants studied (3%) were rejected for a driver’s licence on medical grounds, whereas on the basis of the second evaluation, 11 of the 66 applicants were rejected (17%). This difference was highly statistically significant ($p<0.001$).

The reasons for rejection in the first evaluation were depression and syncope in a professional driver, severe peripheral vascular disease in a non-professional driver, and Parkinson’s disease in a non-professional driver. (In the latter case, rejection was recommended by the examining physician.) None of the remaining medical reports contained data that would warrant rejection of the applicant.

On the second evaluation, in the group seeking private licences, 27 of the 24 re-evaluations were signed by the same physician as the original form, and 15 by a different physician. In 19 cases (45%), medical information not included in the first form was obtained by the re-evaluation. In six of them, the additional information affected the initial decision regarding fitness to drive. Two applicants, one an alcoholic and one with vertebrobasilar insufficiency, were found unfit to drive, and three applicants, one with severe peripheral vascular disease, one addicted to lorazepam, and one after a cerebrovascular accident with right hemiparesis, were referred to the Medical Institute of Road Safety for examination. The sixth applicant was the one rejected initially because of Parkinson’s disease; he was found to be fit to drive on re-evaluation (due to convincing clarification given by his family physician).

Of the 24 professional drivers who complied with our request, half went to the same physician who had signed the original form and half went to a different one. New information was obtained in nine cases (38%) and affected the decision regarding fitness to drive in six of them (25%). One truck driver with treated, but uncontrolled, insulin-dependent diabetes mellitus was denied a professional driving licence; two bus drivers with active ischaemic heart disease were denied a professional licence but accepted for a private one; and three drivers, one with recurrent symptomatic supraventricular tachycardia, one with major depression, and one with progressive Alzheimer’s disease, were referred to the Medical Institute of Road Safety.

Forty six of the second medical evaluations were signed by a primary care physician; five by internists (four of them heads of departments); five by specialists in other fields (cardiology, infectious diseases, haematology, and nuclear medicine); eight by physicians in private institutions; and two by specialists in occupational medicine employed by public transport companies. In all cases, the applicants indicated that the reporting physician was his/or regular doctor. Analysis of the provision of additional medical data by specialty of the physician (table 2) yielded no significant differences among the primary care physicians, physicians from private institutes (including the specialists in occupational medicine doctors), and other specialists. This was also true when the family physicians were compared with all the specialties.

DISCUSSION

This study points to the important role physicians play in the assessment of fitness to drive and the need for their high awareness and knowledge in this area. The highly significant difference ($p<0.001$) found here in the rate of rejection for medical reasons between the first and second evaluations is alarming, and may reflect a lackadaisical attitude of physicians to the examination for fitness to drive unless attention is

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<table>
<thead>
<tr>
<th>Table 1</th>
<th>Demographic characteristics of applicants and findings for second assessment by type of licence requested (% in parentheses)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
<td>Type of licence</td>
</tr>
<tr>
<td>Age [years]</td>
<td></td>
</tr>
<tr>
<td>50–59</td>
<td></td>
</tr>
<tr>
<td>60–69</td>
<td></td>
</tr>
<tr>
<td>70–79</td>
<td></td>
</tr>
<tr>
<td>80–84</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td></td>
</tr>
<tr>
<td>Response to request for additional medical data (%)</td>
<td></td>
</tr>
<tr>
<td>Examining physician at second assessment (%)</td>
<td>Same as first assessment</td>
</tr>
<tr>
<td>Another physician</td>
<td>27</td>
</tr>
<tr>
<td>Report of additional medical data (%)</td>
<td>28</td>
</tr>
<tr>
<td>Additional medical data indicating rejection (%)</td>
<td>11</td>
</tr>
</tbody>
</table>

* $\chi^2$ (Yates’s corrected) = 8.14; $p = 0.0043$.

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<table>
<thead>
<tr>
<th>Table 2</th>
<th>Provision of additional medical data according to specialty of the physician</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physician specialty</td>
<td>Report of additional medical data</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Family doctor</td>
<td>19</td>
</tr>
<tr>
<td>Specialist*</td>
<td>2</td>
</tr>
<tr>
<td>Private institution†</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>28</td>
</tr>
</tbody>
</table>

*Internal medicine, cardiology, infectious diseases, haematology, nuclear medicine.
†Including occupational medicine.

$\chi^2 = 5.2$, $p$ = not significant.
drawn to a specific case by the authorities. We support the claim of Johnston that physician failure to report medical problems that could affect safe driving can be considered negligence that could have serious legal consequences.16 We suspect that our results might have been even more significant had the non-responders to our request for a re-evaluation complied. We cannot rule out the possibility that some of them may not have cooperated in order to conceal medical data that could threaten their eligibility for a licence.17

We should also emphasise that we selected only applicants who were examined by a physician other than their family physician. Thus, the omission of medical details may also have derived from lack of knowledge on the part of both the physician and the patient regarding the medical restrictions on fitness to drive and the examinations that need to be performed. Irvine suggested three main questions that physicians should pose when evaluating fitness to drive:

(1) Is there significant evidence of cortical impairment (dementia, post-stroke, alcohol or drug addiction, etc) to make the person a likely “source of danger” at the wheel?

(2) Is the person prone to sudden and disabling episodes of collapse, altered awareness, loss of consciousness, or vestibular disturbances from whatever medical cause (hypoglycaemia, epilepsy, symptomatic arrhythmia, Meniere’s disease, etc)?

(3) Does the applicant have adequate vision (both visual acuity and visual field)?

Marotalli pointed out that in the process of determining who should or should not be driving, the physician is not alone, but is part of a larger system, and he/she must interact with the driver, the driver’s family, and the licensing agency.18

This study suggests that performing random evaluation of the medical forms for fitness to drive by requesting additional medical information can increase the detection of problems that could influence the decision regarding driver eligibility. This process may also increase the knowledge and awareness of both physicians and the public to the importance of the examination and the specific examinations that need to be performed. With this purpose in mind we recommend that the subject of medical reports and examinations on fitness to drive is included in the medical educational program of both before and after graduation.

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