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Swedish National Road and Transport Research Institute
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ROLE OF THE MEDICAL PROFESSION IN FINLAND AND IN SWEDEN REGARDING AGING AND DRIVING

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Summary

A series of studies is reported attempting to evaluate the safety effects of the Finnish system of obligatory medical screening of holders of driver license aged 70 years or more. In a Swedish-Finnish comparative accident study, the age-related accident trends of older private car drivers in Finland were similar to those in Sweden; i.e., no safety gain for Finland could be demonstrated.

A subsequent survey study among older Finnish license holders showed that at the age of 70, the licenses were most easily given up by female drivers with low mileages and consequently very few accidents.

A third study, comparing the activities, general knowledge, and attitudes of Finnish and Swedish general practitioners, failed to demonstrate that the Finnish screening experience would benefit the doctors in their normal clinical work. The Finnish physicians were not more active, nor did they have more knowledge about issues related to aging and driving than their Swedish colleagues. It is concluded that the Finnish screening system has no documented beneficial effects. Rather than screening whole cohorts, efforts should be concentrated on identifying older driver subgroups with increased accident risk, and on developing testing methods for such subgroups.
Introduction

Why should there be medical screening programs for older drivers?
Any screening programs for older drivers are justifiable only if conceived as traffic safety measures. This seemingly self-evident statement has legal, ethical, and pragmatic implications that are often ignored (see also Hakamies-Blomqvist, 1997).

First, in most countries engaging in active traffic safety work, efforts are made to continuously monitor and evaluate the safety measures in use, in order to choose the most effective ones. Like any safety measure, age-bound medical examinations stipulated by licensing laws should also be submitted to a cost-benefit analysis. Unfortunately, for historical reasons, medical controls have actually been in use for a long time without any proof of their safety effects.

Second, from the point of view of medical ethics, the logic is similar: according to generally accepted ethical standards, no medical interventions or controls should be imposed upon a person if their usefulness has not been clearly shown. If unevaluated, license-related health controls do not fulfill this precondition.

Third, in a wider societal context, limited mobility may represent a bigger health risk than accident rates. Limitations in car driving may also force the ex-drivers to make modal choices that are clearly less safe than their driving would have been. Therefore, any systematic evaluation of screening programs for older drivers should take into account the balance of the whole transport system, as well as the societal consequences of limiting older people's mobility.

To screen or not to screen: A Finnish-Swedish comparison

The evaluation of the safety and/or mobility effects of any medical screening of older drivers is methodologically very difficult, as indeed is that of any treatment operating on a given population as a whole, during a certain historical period. In the following a series of studies is reported which attempts to evaluate different aspects of the Finnish screening system, partly by means of Finnish-Swedish comparisons (for the method, see Hakamies-Blomqvist, 1995). The two countries have very different treatments of older license holders in otherwise reasonably similar general societal, economic, and climatic conditions.

Legal systems in Finland and in Sweden

According to Finnish law, the right to operate a motor vehicle of a given type is valid until the age of 70 years. However, from the age of 45 years onwards, this right is conditional: at the age of 45 years and thereafter every five years the license holder has to pass a medical review covering general health status and vision. At the age of seventy, the license expires. Drivers who wish to continue driving have to pass a medical review and apply for a new license. In addition, when applying, they have to present a document signed by two reliable persons stating that they have kept up their driving skill by continuous driving. For persons aged 70 years or more, the driver license is issued for periods of five years or for shorter periods, depending on the opinion of the physician. These periods mostly get shorter after the age of 80.
Thus, to continue having his/her driver license, the license holder must at least every five years
go once to the physician, get two reliable testimonies about his/her continued driving, visit
twice the police authorities responsible for licensing (to leave the application and to pick up the
license), and pay the corresponding fees and taxes.

Sweden has very liberal laws governing driver licensing. No age-related screening, medical or
other, is connected to the renewal of the driver license. The right to operate a motor vehicle of
a given type is acquired for life. Every ten years, the license holder gets a letter from the
licensing authorities asking him/her to sign a special form at the local post office, and to hand
over a newly taken photograph. After a couple of weeks, a new license document can be
fetched at the same place. In terms of effort and cost for the license holder, this means two
visits to the closest local post office and a small fee. This is purely a formality performed in
order to keep the photograph updated and has no bearing on the right to drive. In Sweden,
however, the physicians must report patients who for health reasons are obviously unfit to
drive, in practice however, the law is not followed: less than 0.1% of older drivers’ licenses are
revoked because of a physician’s report.

Safety effects

In a study comparing the age trends in accident statistics of private car drivers in Finland and in
Sweden (Hakamies-Blomqvist, 1996), no safety gain could be found for the heavily screened
Finnish drivers aged 70 years or more, as compared to the completely unscreened Swedish
group of the same age. In contrast, unprotected older road users had significantly more
fatalities in Finland than in Sweden. The authors conclude that the Finnish screening may
actually decrease safety by producing a modal shift toward traffic modes which in Finland,
mainly because of a less well developed infrastructure, are more risky for older road users.
Thus, the Finnish society would indeed be accepting high costs for a traffic safety measure
which in fact decreases the safety of the general traffic system.

Effect of the Finnish screening on the older driver population.
The failure of the Finnish screening system to produce safety gains must be related to how the
screening in fact affects the older driver population. Generally speaking, good screening
should fulfill the two central criteria of specificity and sensitivity. In Finland, however, anyone
persistent enough can get a license, independently of the health condition. The health control
only includes a relatively short and superficial check-up, no specific training is demanded from
the physician, standard forms are used, and the statement relies largely on the applicant’s own
report. Even if the applicant gets a refusal, he/she may just make another visit to another
doctor, and experience has shown that for any applicant, there will always be a doctor who
signs a positive statement.

As to the police authorities, once an older applicant has a positive medical statement, the
police authorities issue the license, without having any possibility of more detailed follow-up,
e.g., knowing how many doctors the applicant has seen before he/she got a positive statement.
Therefore, regardless of the number of negative health reports an applicant may have received,
one positive report will always entitle him/her to get the license. As a consequence, the
Finnish screening does not succeed in excluding the unfit drivers, and has, therefore, weak
sensitivity.
While direct screening fails, the screening system has an indirect effect through some older license holders' spontaneous renouncing to continued driving at the age of 70 or later. However, in Finland this voluntary self screening affects the wrong drivers: a recent study (Hakamies-Blomqvist, in press) shows that, at the age of 70, the licenses are most easily given up by female drivers with low mileages.

The removal of this subgroup has a negligible effect on the safety statistics, but it does create a gender-connected mobility problem a few years later when (statistically speaking) the husbands fall ill or die, leaving the widow with a car and a summer house but without driver license. Thus, the Finnish screening actually contributes to removing from the driver population a subgroup that should not be removed and has, consequently, weak specificity.

Effects of the legislation on the actions, awareness, and attitudes of general practitioners.

While the Finnish screening system fails to show any safety effects, and is weak in both sensitivity and specificity, it is possible that its main beneficial effect is indirect, i.e., that of affecting the role of the medical profession in general in their work with older, car-driving patients. The fact that all physicians in Finland come into contact with the obligatory health controls of older license holders, both in their initial training and in their clinical work, might lead to a higher level of consciousness, and, consequently, more potential to informed action among them, as compared to physicians in other countries without similar legal obligations related to aging and driving.

To test this hypothesis, a random sample of 1500 Finnish and 1500 Swedish general practitioners were asked in 1996 in a mail survey about their activities, general knowledge, and attitudes regarding aging and driving in the realm of their day-to-day clinical work (Hakamies-Blomqvist, submitted). The results showed that the Finnish physicians were in no respect more active or knowledgeable than the Swedish ones; all differences between the two groups were minor, and most rather to the advantage of the Swedish physicians.

In contrast, the Finnish physicians tended to have a somewhat unfounded confidence in their ability of judging on medical grounds whether an older persons was a fit driver; they also had more restrictive attitudes toward aging and driving. The Swedish physicians were more cautious in their judgments and more liberal in their attitudes. In conclusion, the strict and expensive Finnish screening system involving the whole medical profession did not seem to make the physicians more conscious or knowledgeable about crucial issues concerning aging and driving than their Swedish colleagues who lacked the screening experience.
Conclusions: preconditions for useful screening practices

There is no evidence that testing whole cohorts of older drivers would produce safety gains. In Finland, a heavy and costly screening system is continuously applied despite the fact that all efforts to demonstrate any kind of beneficial effects of this system have failed. Recent research from all around the world indicates that a major part of older drivers' accidents may be due to subgroups suffering from illnesses affecting their driving ability like dementia. Rather than screening whole cohorts, it would be meaningful to accumulate knowledge about how to recognize subgroups with increased accident risk among the older age groups.

Questions about how aging, or age-related illnesses, affects driving ability are scientific questions. In contrast, deciding about who should be allowed to drive, what sort of the risk levels the society should accept, who should be tested, and where different screening thresholds should be set, are all political issues.

In the best interest of both the society and the older drivers themselves, the legal and societal treatment of older drivers should not only focus on the reduction of car accidents. Banning drivers from their cars on the suspicion of being risky will transfer them to less safe travel modes and can even lead to an increase in the total number of traffic fatalities.

Mobility limitations again may lead to a reduced activity pattern, and to a more passive lifestyle, which again correlates with worse health and lower functional abilities, and may finally lead to a greater need of societal support and to higher institutionalization rates. This is neither ethically nor economically a desirable development.

Future research efforts in driver diagnostics should address the problem area of older drivers on two levels: (1) how do we identify those subgroups of older drivers who have, on group level, an increased risk of accident and should therefore be screened; (2) having defined and found the target groups, what testing methods could we use in order to identify with sufficient specificity and sensitivity those individuals who actually do have a higher-than-acceptable accident risk? The role of the medical profession will be very important in (1), since practically all older individuals come into contact with physicians for various reasons in the course of their normal life.

Any systematic screening practices should be based on a groundwork of solid scientific evidence in order to avoid the establishment, on the basis of insufficient knowledge, of institutions and practices that do not serve their purpose, or that may even decrease safety while imposing upon the aging citizens discriminatory control measures and limitations.
References


Statens väg- och transportforskningsinstitut (VTI) har kompetens och laboratorier för kvalificerade forskningsuppdrag inom transporter och samhällesekonomi, trafiksäkerhet, fordon, miljö samt för byggande, drift och underhåll av vägar och järnvägar.

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