Mobility Issues in the United States:

Some Comments

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The purpose of this presentation is to provide an overview of why mobility issues are important to the well-being of the elderly and then to summarize some current issues being discussed in this area by social scientists in the United States. Thus I begin by asking the basic question of why mobility is important in old age.

Why is Mobility Important?

One of the principal requirements for a high quality of life in old age is being able to achieve full access to services, resources and cultural opportunities. Technological advances make it possible to access many resources without leaving one's home; however, such access is largely of the virtual kind and does not fully satisfy psychological needs for social interaction.

Maintaining connectedness with one's community and culture demands first of all that older individuals retain a physical and psychological personal infrastructure which remains at least minimally effective. Changes in these characteristics are substantial, but they do not confine most elderly to their homes (also see Fozard, 2000; Fozard & Gordon-Salant, 2001). However, it is necessary that the environment be organize of increasing the compensatory characteristics of the environment and by providing suitable personal and mass transportation structures that support personal mobility (also see Ball & Owsley, 2000; Burckhardt, 2000; Hanowski & Dingus, 2000). Conditions of physical

and cognitive frailty obviously also interact in complex fashion with environmental obstacles (cf. Willis, 2000).

But the over-riding objective in this context is to preserve those attributes of personal choice and independence that will permit maintenance of a high quality of life for the elderly. This objective includes the essential needs to maintain basic levels of physical health, intellectual competence and psychological well-being. Equally important also is the maintenance of independence, the ability of maintaining familiar habits and life styles and maintaining one's independence.

It is possible to enumerate at least six types of goals or mobility that would be considered important by most social scientists:

- Reduction of personal isolation, including the maintenance of feeling part of one's community.
- Participation in cultural and recreational activities (both as a spectator and as a participant).
- Maintaining opportunities to access full choices of goods and services.
- Retaining choice of health services and personal care facilities.
- Maintaining access to the full range of financial and other personal consultants.
- Direct participation in opportunities for religious worship and other spiritual experiences.

For more details , the reader should consult Schaie (2003).

Major Issues in Maintaining Mobility in the Elderly

In the United States there are basically two rather different streams of policy development. The first is concerned with maintaining the ability of individuals to engage

in personal transportation (i.e. the automobile) as long as possible by modifying the driving environment and/or enhancing the skills of the older driver. The second is to assess carefully driving fitness with a view of removing dangerous drivers from the road while providing some viable transportation alternative. Clearly the first set of strategies is of greater interest in non-urban areas where alternative transportation is limited, while the second is more feasible in urban environments.

It has been suggested that we need to consider a broader framework for driving intervention by using dimensions such as age, target of the intervention, and the domain of the intervention. For example, Willis (2003) notes that chronological age may be inferior to functional capacity as a way to categorize potential target individuals for intervention. In some states it is political anathema to use age as a distinguishing characteristic in driver licensing legislation, at least for older drivers. Nevertheless. Evaluation of the effectiveness of an intervention eventually comes down to establishing cost effectiveness. Charness (2003) lists several criteria for this purpose: Which intervention leads to the greatest increase in safety: better training of drivers or better construction of road systems? Which leads to the greatest increase in comfortable mobility: better personal vehicle design or better public transit systems? He suggests that with political leaders ever mindful of the balance between taxing and spending, the research community has an important role to play in promoting better decisions about resource allocation..

Another major issue is an even more diverse older population in the future, particularly from the perspective of technology awareness. The gaps in knowledge and attitudes between present generations of older and younger adults may widen over time.

Approximately 50 percent of American households owned a computer in the year 2000, and over 40% had Internet access. However, for those over age 65these numbers were less than 30% and less than 15% respectively (Newburger, 2001). This discrepancy is particularly acute because of the need for longer-living adults to work to later ages to ensure the viability of public pension systems. This need in turn requires transportation improvements or technologies such as telecommuting. Even though it is less costly to transport information than persons, many jobs particularly suitable for older adults will require that they be available in locations other than their homes.

Vehicle Design Modifications Benefiting the Elderly

Assuming that the personal automobile, at least in the United States, will remain the major method of transportation for the majority of older persons, it becomes reasonable to suggest that automobile could be redesigned for older driver capabilities (Färber, 2003). Such an effort will require overcoming current perceptions of designers about ease of use, and to avoid designs that might stigmatize the resulting product by designs that attempt to lump together the needs of the old and the disabled.. Such redesign might be accomplished by a variety of cutting-edge technologies that include vision systems, transfer systems, emergency systems, brake assistance systems, cruise control, stop and go assistance, parking assistance, and even curve lighting with GPS. Age-related differences in preferences for display characteristics might also require different collision avoidance system interfaces for younger and older drivers.

Of particular interest here also are collision avoidance systems that sense the proximity of other vehicles and that by means of adaptive cruise control systems can automatically adjust vehicle speed. Such a system obviously must include warning

signals to the driver. However, there is still some controversy as to what modality or modalities would be most effective for older drivers. And it is clear that collision avoidance warning systems will need to be different for older and young drivers (cf. Jovanis, Campbell, Klaver, & Chen, 1997).

Environmental Interventions to Maintain Mobility in the Elderly

An alternate approach to the maintenance of mobility in the elderly to redesigning the automobile is to consider adapting road designs to better serve the needs of older individuals. In the United States the responsibility for such design is shared by many agencies which must agree before even minor changes can be implemented. Some have argued therefore that large-scale design changes favoring the elderly might take a long time to implement. Nevertheless there has been recent progress through the adoption of an Older Driver Highway Design Handbook by the Federal Highway Administration (2000). This design guide encourages detailed problem identification that includes assessment whether specific road segments are frequented by substantial proportions of older drivers. Interestingly enough this turns out to be more than an engineering problem but includes the need to obtain information from various health and human service agencies serving the elderly (see Jovanis, 2003).

Particular attention has been paid to the dangers in left turns because older driver's may have great difficulty in accurately assessing the position and speed of approach of automobiles approaching from the opposite direction. Design modifications that appear to benefit the older driver include large signs with high reflectivity, the use of raised medians or high-contrast raised pavements, and designing left turn lanes to be

offset such that opposing left turn lanes are not directly in from of each other (Staplin, Harkey, Lococo, & Tarawneh,, 1997).

Part of these efforts are designed to raise the awareness of traffic engineers to including the perceptions of users in assessing the quality of transportation facilities (Pecheux, Pietrucha, & Jovanis, 2001). If this can be accomplished it may be possible to design traffic systems that are better matched to the perceptions of older drivers.

There has also been considerable discussion of the likely beneficial impact for older drivers of the widespread introduction of Intelligent Transportation Systems (ITS). Unfortunately some of the most commonly deployed systems, the Advanced Travelers Information Systems, often are improperly designed for older (cf. Henderson & Suen, 2000). Such systems, however, could reduce high risk situations by suggesting safer routes that might either be determined by the driver's preferences. Such systems could also advise on best time of day to travel and specific routes that are least difficult for the older driver (cf. Abdel-Aty, Kitamura, Jovanis, Reddy, & Vaughn, 1995). It is clear that there are benefits for older drivers if they receive advance information on routes and travel times so that they can reach scheduled appointments on time without budgeting excessive time windows (Wunderlich, et. al. 2001).

Paradoxically, older persons may actually be unfavorably affected by traffic calming measures that require an increase in the walking distance between parking lots and transit services. Similarly, moving parking to the periphery of city centers would reduce access for older pedestrians to central destinations.

Public Policy Issues

Recent studies in the United States have determined that a substantial portion of the retired population consider themselves able and willing to engage in some work at least on a part-time basis (Research and Policy Committee of the Committee for Economic Development, 1999). However, implementation of opportunities for such a return of older persons to the work force will require substantial re-design of work opportunities including provision for the transportation needs of such re-entering older workers. Not only does public transportation need to be made more user-friendly, but it must also be perceived as being safe in order to attract widespread use by the elderly (Waller, 2003).

Contrary to the situation prevailing in Europe, American mass transportation systems are underdeveloped to serve the needs of the elderly in urban areas and are virtually non-existent in rural areas. Hence, adaptation of roads and vehicles as well as driver training for older drivers attain high priority. Given limited resources, and the fact that measures that will help the elderly will not necessarily improve conditions for all age levels, policy questions arise as to the trade-offs necessary to be equitable across different generational needs.

Summary

I argued in my introductory comments that personal mobility is an essential element in connecting older persons to their community and society. Such connectedness is an essential element for maintaining sustainable levels of physical and emotional health

and a degree of well-being that is essential to allow older persons to function independently and exercise maximal choice in their lives.

I then identified six goal areas for older adults for which mobility is essential. These goal areas included: reduction of personal isolation; participation in cultural and recreational activities; access to full choices of goods and services; choice of health services and personal care facilities; access to financial and other personal consultants; and direct participation in religious worship and other spiritual experiences.

Important issues related to the mobility of the elderly were then indicated. These included the strain between reducing the potential hazards of older drivers and the need to maintain driving into advanced ages to reduce personal isolation. Also considered were the heterogeneity of the older population with respect to suitable interventions to enhance individual driving skills, vehicle re-design that might compensated for age-rlated changes in driving performance, and interventions designed to favorably redesign traffic environments to better fit the needs of the elderly. Finally, I briefly commented on policy issues with respect to mobility demands related to the need of prolonging the work life of today’s elderly.

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