

NATIONAL HEALTH AND AGING TRENDS STUDY (NHATS)

Driving and Transportation Measures in the National Health and  
Aging Trends Study

February 12, 2014

Suggested Citation: Skehan, Maureen E, Judith D. Kasper and Vicki A. Freedman. 2014. Driving and Transportation Measures in the National Health and Aging Trends Study. NHATS Technical Paper #8. Baltimore: Johns Hopkins University School of Public Health. Available at [www.NHATS.org](http://www.NHATS.org). The technical paper was prepared with funding from the National Institute on Aging (U01AG032947).

## **Introduction**

Satariano and colleagues (2012) define optimal mobility as “being able to safely and reliably go where you want to go, when you want to go, and how you want to get there.” The National Health and Aging Study (NHATS) incorporates a wide range of measures that can be used to characterize the extent to which optimal mobility is achieved by older adults. These measures provide information on varied means of transportation and the activities these are related to, which in conjunction with information on functioning and the environments in which individuals live, allow for study of how older people get around. Measures that reflect changes in driving habits, and transportation restrictions in the ability to participate in valued activities, provide information to assess the impact of transportation barriers, which are a particular concern at older ages (Degood, 2011). NHATS also collects additional information on sources of transportation available to, and used by, individuals who reside in residential care settings, which often offer transportation services to residents. This paper is intended as a guide to transportation-related information in NHATS and approaches to analyzing these data.

## **Driving Habits**

The Driving and Transportation (DT) section asks about driving. At Round 1 about two-thirds of NHATS participants had driven a car in the past year. Persons are asked about driving in each annual interview until they report they never drove in the last month. Those who reported at baseline that they no longer drove (and those who reported being blind or not leaving their residence) were asked when they last drove. Respondents provided either a date (month and year) when they stopped driving, a length of time since they last drove (number of months and/or years), or their age at the time they last drove.

Persons who currently drive are asked frequency of driving and about situations in which they have avoided driving in the past month. These situations include driving at night, alone, on busy roads or highways, or in the rain or other bad weather.

Starting in Round 2, driving questions are skipped for persons who reported in Round 1 that they never drove.

## **Getting Places**

**Walking.** Walking is the most basic form of transportation and walking behavior is affected by many factors, including the built environment (Satariano et al. 2012). The home environment (HO) and environmental modifications (EM) sections obtain information on building entrances, ramps, and elevators. The Interviewer Remarks (IR) section includes an environmental checklist that is completed by the interviewer. This section includes items about walking surfaces and, starting in round 2, asks if there are continuous sidewalks outside of the respondent’s home. Walking is included in the list of options for getting to places for shopping and to get to the doctor.

**Getting to places outside your home.** A general question (DT4) is asked of everyone in the Driving and Transportation Section about how someone got to places outside his or her home in the last month

(whether driving is one of the ways is obtained in DT1). Each of the options listed is read to the respondent so that multiple options can be selected:

- Walk\*
- Get a ride from a family member, friend, or someone paid to help
- Use a van or shuttle service provided by the place you live\*\*
- Use a van or shuttle service for seniors or people with disabilities\*\*\*
- Take public transportation (the bus, subway, or train)
- Take a taxi
- Other

\*If the person reported earlier that he or she used a wheelchair or scooter, then the question is asked as “walk or use your wheelchair (or scooter)”

\*\*Asked only if a person lived in a residential care setting or a retirement community

\*\*\*If the person lives in a residential care setting or a retirement community, then the question is asked as “use a van or shuttle service for seniors or people with disabilities not provided by the place you live”

**Getting to the store or the doctor.** For two activities, shopping and getting to the doctor, modes of transportation in the last year are obtained. The list of options from the DT Section, with driving added, is used and respondents are asked how they got to the store to shop (HA23) or to their regular doctor (MC15). Respondents can also answer that their doctor came to see them at home as an option for how they got to their regular physician. Interviewers select all options that are reported.

### **Transportation Restrictions in Activities**

The Participation (PA) section of the interview asks about participation in activities that are elective but valued (Freedman, 2009). Questions are asked about participation in activities in the last month and how important it is to the respondent to do the activity. For selected activities, if the person did not drive, he or she is asked if transportation problems kept him or her from doing the activity. The question about transportation restrictions is asked for: visiting friends or family; attending religious services; participating in clubs, classes, or other organized activities; and going out for enjoyment.

### **Transportation Services Available in Residential Care Settings**

The Service Environment Section (SE) includes questions about whether transportation services are available for persons who live in residential care settings. Two transportation items are in a list of services that is read: “Please tell me if NAME OF PLACE where you live offers”:

- A van or shuttle to doctors or other medical care providers
- A van or shuttle to stores or events like concerts

If the service is reported as available, persons are asked whether they used it in the last month. For each service used, persons are asked whether it is included in what the person pays to live at the place or if there is an extra charge.

The Facility Questionnaire (FQ) also includes questions about transportation services available to residents “at the NHATS participant’s level of care.” The staff person is not asked whether the NHATS participant has used the service, but is asked whether the service is part of the participant’s package of services and whether there is an extra charge for it. The services asked about mirror those in the SE Section (van/shuttle to doctors or other medical care providers or to stores or events like concerts).

### **Who Helps Older Persons to Get Places**

When “getting a ride from a family member, friend, or someone paid to help” is reported as a means of transportation in the DT section, the respondent is asked which family member, friend, or someone paid to help took him or her places most often and the relationship of the person named is obtained. Persons are then asked whether there was another friend or family member who took them places in the last month. If a second person is named, the relationship of this individual also is obtained. Two variables indicating “helped with transportation by giving rides” were created for the Other Person (OP file): op#tkplhlp1 and op#tkplhlp2 (where # indicates round of data collection). The relationship of these transportation helpers to the sample person is identified by op#relatnshp.

Persons who live in residential care or a retirement community are given the option to select “use a van or shuttle service provided by the place you live” from the list of transportation options. If they do so, this is reflected in an SP file variable (dt#getoplcs3), however this information is not transferred to the OP file. If persons in these settings select “getting a ride from a family member, friend, or someone paid to help,” in addition to identifying other persons who helped with transportation, they may also choose “use of a van or shuttle service provided by the place.” In these cases, OP records with relationship equal to 37 (someone/service from the place SP lived) will have the op#tkplhlp1 or op#tkplhlp2 flag turned on. We therefore recommend users interested in transportation for persons in residential care or retirement communities consult both the SP file and the OP file.

### **Selected Transportation Themes**

**Persons who Use Public Transportation.** There are several questions where the respondent can indicate that they have used public transportation. Persons can indicate at DT4E (dt#getoplcs5) that they used public transportation, such as a bus, subway, or train, within the past month to get places.

Persons can indicate at HA23 that they used public transportation (ha#howgtstr5) to get to the store within the past year. The use of public transportation is also asked about at item MC15. Here, persons

can indicate that they used public transportation (mc1hwgtregd5) to get to the doctor within the past year.

**Persons who Use Van or Shuttle Service Provided by the Place They Live.** Persons who live in residential care settings and those in retirement communities have the option to report this form of transportation. Persons in residential care settings may report use of a van or shuttle service provided by the place he or she lives to get to places in several sections: the SE Section (SE2f, SE2g), the DT Section (DT4C), the HA Section (HA23), and the MC Section (MC15). Variables from these questions are located on the SP File. For persons who live in retirement communities, the same items are available with the exception of the SE section, which was not administered to persons in retirement communities. As described earlier, information from the DT Section may be reflected in both SP and OP file variables.

**Availability of transportation services in residential care.** Questions in the SE Section—whether the place provides a van or shuttle to doctors or other medical care providers (se#servcoff6) or to stores or events like concerts (se#servcoff7)—and questions in the facility questionnaire (FQ) conducted with a staff member of a residential care facility also obtain information about transportation options available. In Round 1, the SE Section from the SP Interview is available for persons in non-nursing home residential care, but not for nursing home residents. Starting in Round 2, nursing home residents who are interviewed will have SE information as well. The FQ is administered for both residential care and nursing home residents.

## References

DeGood K. (2011). Aging in Place, Stuck without Options: Fixing the Mobility Crisis Threatening the Baby Boom Generation: Transportation for America. Obtained from <http://t4america.org/docs/SeniorsMobilityCrisis.pdf>

Freedman VA. (2009). Adopting the ICF Language for Studying Late-life Disability: A Field of Dreams? *J of Gerontol A Biol Sci Med Sci.* 64A(11): 1172–1174.

Satariano WA, Guralnik JM, Jackson RJ, Marottoli RA, Phelan EA, Prohaska R. (2012). Mobility and Aging: New Directions for Public Health Action. *American Journal of Public Health* 102(8): 1508-1515.

## Sources of information for Transportation Measures in the National Health and Aging Trends Study (NHATS)

SP's Driving Habits		
Item	Variable Name	Variable Label
DT1	dt1oftedrive	R1 DT1 HOW OFTEN DRIVE PLACES
DT2	dt1lastdrove	R1 DT2 WHEN LAST TIME YOU DROVE
DT2A1	dt1mthltdrov	R1 DT2A1 MONTH LAST DROVE
DT2A2	dt1yrlstdrov	R1 DT2A2 YEAR LAST DROVE
DT2B	dt1mthagodrv	R1 DT2B MONTHS AGO LAST DROVE
DT2C	dt1yragoldrv	R1 DT2C HOW MNY YRS AGO LST DROV
DT2D	dt1ageltdrov	R1 DT2D AGE WHEN LAST DROVE
DT3A	dt1avoidriv1	R1 DT3A AVOID DRIVING AT NIGHT
DT3B	dt1avoidriv2	R1 DT3B AVOID DRIVING ALONE
DT3C	dt1avoidriv3	R1 DT3C AVOID DRIVING HIGHWAYS
DT3D	dt1avoidriv4	R1 DT3D AVOID DRIVING BAD WEATHR
DT Flag Variable	fl1drives	R1 F DT SP DRIVES CAR
DT Flag Variable	fl1drvlstyr	R1 F DT SP DROVE CAR IN PAST YR
DT Flag Variables	fl1dneverdrv	R1 F DT SP NEVER DROVE

How SP Gets Places Other than Driving		
Item	Variable Name	Variable Label
DT4A	dt1getoplcs1	R1 DT4A SP WALKED GOT PLACES
DT4B	dt1getoplcs2	R1 DT4B GOT RIDE FAM FRIEND PD
DT4C	dt1getoplcs3	R1 DT4C VANSHUTTLE PROV BY PLACE
DT4D	dt1getoplcs4	R1 DT4D VAN SHUTTLE FOR SENIORS
DT4E	dt1getoplcs5	R1 DT4E SP TOOK PUBLIC TRANSPRT
DT4F	dt1getoplcs6	R1 DT4F SP TOOK TAXI GOT PLACES
DT4G	dt1getoplcs7	R1 DT4G GOT PLACES OTHR SPECIFY

Who Helps SP by Giving Rides		
Item	Variable Name	Variable Label
DT5A	op1tkplhlp1	R1 DT5A TAKES SP PLACES MOST*
DT6	dt1otfrfamtk	R1 DT6 ANTH FND FAM MEM TOOK YOU
DT7A	op1tkplhlp2	R1 DT7A TAKES SP PLACES OTH*

\*Relationship of helper can be 37 (someone/service from the place SP lives) for those in residential care or retirement communities.

SP Getting Places		
Item	Variable Name	Variable Label
HA23	ha1howgtstr1	R1 HA23 DROVE TO THE STORE
HA23	ha1howgtstr2	R1 HA23 FAM FRND PD HLP DROVE
HA23	ha1howgtstr3	R1 HA23 VAN PLACE SP LIVES DROVE
HA23	ha1howgtstr4	R1 HA23 VAN 4 DIS SENIORS DROVE
HA23	ha1howgtstr5	R1 HA23 PUBLIC TRANSPORT 2 STORE
HA23	ha1howgtstr6	R1 HA23 SP TOOK TAXI 2 THE STORE
HA23	ha1howgtstr7	R1 HA23 SP WALKED TO THE STORE
HA23	ha1howgtstr8	R1 HA23 OTHR SPECIFY TO STORE
MC15	mc1hwgtregd1	R1 MC15 SP DROVE SELF TO REG DOC
MC15	mc1hwgtregd2	R1 MC15 FAM PD HLP DRVE REG DOC
MC15	mc1hwgtregd3	R1 MC15 VAN PLCE SP LIVE REG DOC
MC15	mc1hwgtregd4	R1 MC15 VAN FR DIS SENIOR REG DC
MC15	mc1hwgtregd5	R1 MC15 PUBLIC TRANSPORT REG DOC
MC15	mc1hwgtregd6	R1 MC15 SP TOOK TAXI TO REG DOC
MC15	mc1hwgtregd7	R1 MC15 SP WALKED TO REG DOC
MC15	mc1hwgtregd8	R1 MC15 REG DOC WAS HOME VISIT
MC15	mc1hwgtregd9	R1 MC15 OTHR SPECIFY REG DOC
PA3	pa1trkpfvis	R1 PA3 TRAN PRB KP FR VST FRNDS
PA7	pa1trprrels	R1 PA7 TRAN PRO KEEP FM RELG SER
PA11	pa1trprkpfgr	R1 PA11 TRANS PROB KEEP FM GROPS
PA15	pa1trprgoout	R1 PA15 TRANSPROB KEEP FM GO OUT

SE1F	se1servcoff6	R1 SE1 FAC SERV VAN TO DOCTOR
SE1G	se1servcoff7	R1 SE1 FAC SRV VAN TO STORE EVNT
SE2F	se1servused6	R1 SE2 SERVS USED VAN TO DOCTOR
SE2G	se1servused7	R1 SE2 SERVS USED VAN TO STORE
SE3F	se1payservi6	R1 SE3 PAYMNT FR SERV VAN TO DOC
SE3G	se1payservi7	R1 SE3 PAY FOR SERV VAN TO STORE
FQ15	fq1servaval6	R1 FQ15 TRANSPRT MED CARE PROV
FQ15	fq1servaval7	R1 FQ15 TRANSPRT TO STORE EVENT