

Candrive: Driving research for older adults

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About Candrive

Candrive (the Canadian Driving Research Initiative for Vehicular Safety in the Elderly) is a collaborative, interdisciplinary research network dedicated to improve the health and quality of life of Canada's older drivers. The role of occupational therapists in this network has been, and continues to be integral to Candrive's success.

The need for valid and reliable screening of older drivers

With the baby boom generation hitting 65 this year, Canada faces a rapid increase in the number of older drivers on our roads. While some of the safest drivers compared with other age groups, senior drivers have also one of the highest crash rates per mile driven - a fact that has not gone unnoticed by governments, non-governmental agencies and the media. We know this increased crash risk is not due to age itself but due to increased health-related conditions that can affect the ability to drive. The challenge for researchers in this field is in finding ways to balance the risks of driving with the independence and convenience driving provides.

Ten years ago both the Canadian Council of Motor Transportation Administrators (CCMTA) and the U.S. National Highway Traffic Safety Administration (NHTSA) identified a need for research regarding older driver safety issues and for the development of valid and reliable screening and assessment methods based on medical conditions, collision records and functional ability (Man-Son-Hing, et al., 2001).

With the onus on physicians to report those deemed unfit to drive, and inconsistent reporting policies across North America, research efforts on assessment, pre-Candrive, strived towards the goal of an evidence-based set of practical clinical guidelines that could be applied to individuals. However few studies undertook the comprehensive approach needed to provide evidence-based reliability, thus forcing clinicians to continue relying on their own subjective judgment.

At the same time it was becoming increasingly important to determine fitness to drive, it also became clear there were other issues related to the older driver that needed further research, such as the implications and psychosocial impact of driving cessation on drivers, their families and friends and health care providers.

Why Candrive is a different research initiative

Before Candrive there were many Canadian researchers interested in older person driving issues but efforts

were fragmented due to the lack of coordinated effort. In 2002, Canadian Institute of Health Research (CIHR) approved funding for a five-year, new emerging team (NET) grant to form Candrive. The next five years were spent in successfully building up a strong research framework and a team that includes occupational therapists, physiotherapists, psychologists, kinesiologists, epidemiologists and a number of medical specialists in geriatric medicine, physical medicine and rehabilitation, rheumatology and geriatric psychiatry. In addition, Candrive has developed working partnerships with provincial ministries of transportation, the CCMTA and Transport Canada and with professional organizations such as the Canadian Medical Association and the Canadian Association of Occupational Therapists (CAOT). Candrive researchers are also members of several advisory boards, effective in assuring research results get integrated into policy development and clinical practice.

Building on the momentum created as a new emerging team, in 2008 Candrive was successful in obtaining a five-year Team Grant from CIHR, the federal governments main funding body for health research. This team grant is funding a long-term, international, prospective cohort study of older drivers to identify the medical and psychosocial characteristics that determine driving competence and performance. The study is now underway in seven Canadian sites, one site in Australia and soon one in New Zealand. Six related sub-projects are also under way.

The Candrive and occupational therapy partnership

Occupational therapists have been partners with Candrive since its inception; they play a major role in Candrive's current research studies and comprise a large number of Candrive's full and associate members. Occupational therapists, with their background in assisting older adults lead full lives and involvement in all aspects of their daily living, recognize the importance of keeping older drivers safe and driving as long as possible. Responsible for conducting driver assessments both on and off the road, and interested in on-road and auto technology, occupational therapists' connection with Candrive remains essential, providing a unique perspective. Dr. Malcolm Hing, a co-founder and co-principal investigator of Candrive says, "The expertise of occupational therapists is integral to the success of Candrive because driving can be considered a 'super' instrumental activity of daily living (IADL) requiring a functional approach to evaluate."

Candrive's long-term, international, prospective cohort study of older drivers, which began in 2009, has a number of occupational therapists directly involved. Occupational therapy researchers are the site investigators in Montreal (Nicol Korner-Bitensky, Barbara Mazer and Isabelle Gelinias) and Hamilton (Brenda Vrkljan), and several research associates who are involved in recruiting, conducting assessments, collecting data, installing the GPS systems and submitting reports also have an occupational therapy background.

Occupational therapists are also involved in some of Candrive's sub-studies. Jan Miller Polgar and Brenda Vrkljan are leaders in the study Advancements in Automotive Design: Development of a Vehicle Design Rating System (VDRS) that links older drivers' abilities and automotive features. The goal is to determine key features of the automobile that impact older driver safety and to develop a vehicle design rating system that identifies vehicle features which meet the needs of older drivers. Nicol Korner-Bitensky is leading the project on Driver Improvement, the objectives of which are to explore the perspectives of older drivers regarding driving safety and training programs and to implement the Stay-SHARP Pilot driver refresher program.

The CAOT received funding for the development of a *National Blueprint for Injury Prevention in Older Drivers* from the Public Health Agency of Canada. This Blueprint, published in 2009, was developed with the input and assistance of a 21 member National Advisory Committee which included numerous Candrive members. Candrive has also collaborated with occupational therapists at the Older Driver Consensus Conference in 2004 and with developing On Road Driving Assessment Guidelines.

Helping Candrive implement study findings

Candrive's primary goal is to develop and implement a validated, easy-to-use screening tool that will allow clinicians to assess medical fitness to drive in older adults. Occupational therapists will become major players in disseminating and implementing this tool at the primary screening level. Occupational therapists are in an excellent position to use the tool outside of a doctor's office because of their involvement in the provision of the first level of care with different client groups. With their experience and expertise in the local community, particularly where people don't have a family doctor, occupational therapists will know the issues and have the tools to be able to conduct assessments either in the home or in a clinic setting.

In regard to other Candrive studies, such as; *Assessing the relevance of the simulator as a screening tool for at-risk older drivers*, with the aim to further validate the use of driving simulator assessments; and Driver Refresher and Improvement Programs, occupational therapists will have the opportunity for both input into the studies and to use the results in future health promotion and prevention programs.

As for the future, it is important that occupational therapists continue to stay involved with the work of Candrive as so much of their work concerns driving issues, particularly for the older driver, and so many more issues are yet to be addressed.

Reference:

Man-Son-Hing, M., Marshall, S.C., Molnar, F.J., Wilson, K.G., Crowder, C., & Chambers, L.W. (2004). A Canadian research strategy for older drivers. *Geriatrics Today*, 7, 62-83.