

Dementia and Driving Safety

A Clinical Guideline



Driving with Dementia Working Group
Auckland, Counties Manukau, Waitemata and Northland DHBs –
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Executive Summary

As health clinicians we are under an obligation to consider the driving safety of our patients and to deal with any risk to themselves or others from unsafe driving, especially in those who suffer from Mild Cognitive Impairment (MCI) or Dementia. Many will have already voluntarily ceased driving when diagnosed but a significant number continue to drive.

This guideline is designed to assist clinicians, in both primary and secondary care settings, in the sometimes fraught decision-making process around those people who have some form of cognitive impairment and are also continuing to drive a motor vehicle. A review of driving risk should be part of the standard assessment of all those with cognitive impairment.

People who have moderate or severe dementia should be told that they must cease driving, and if they refuse to do this, there is an obligation to notify the New Zealand Transport Agency (NZTA) under Section 18 of the Land Transport Act.

Those who have MCI or Mild Dementia are more difficult to assess and many are safe to continue driving, at least in the short-term. Clinical bedside testing is a poor guide to deciding on a person's driving safety, and they should be asked if they will undertake an Occupational Therapist (OT) Driving Assessment through one of the local agencies. These are unfortunately not funded. Following such an assessment, recommendations regarding driving should be communicated with the person, their family and the NZTA, where necessary. Remember that drivers can be approved to continue driving, or clinicians can recommend restricted driving such as only driving close to home and in non-busy daylight hours. However, for some the outcome will be that they must cease driving.

If a person with MCI or Mild Dementia declines an on-road test or cannot afford one, then we need to make the best decision we can based on an extended clinical assessment. This might include a combination of further cognitive testing, consideration of functional capabilities, review of mental and physical health issues, and a focused review of markers indicating that driving safety might be of concern, including inspecting the car. Questionnaires can be administered to both the person and their family. These can be combined with an alternative and cheaper forms of driving assessment, such as the On-Road Safety Test or using an AA driving instructor, but these tests are not as rigorous as the OT driving assessment, nor are they targeted at a potentially impaired group. Nonetheless they may all be helpful in reaching a clinical decision about driving safety. Occasionally neuropsychological tests may be recommended.

The results of these further investigations should then be reviewed and a clinical decision made about driving safety. Although this testing will not provide the same degree of certainty as the results of an OT Driving Assessment, they will inform us in making the best clinical decision we can about the issue of driving safety.

When the clinical decision is for the person to stop driving or restrict their driving, this should be documented and discussed with the person and their family. If they do not comply with this direction, then we are obligated to notify the NZTA under Section 18. If the person continues to drive in spite of having had their licence revoked, we again must notify the NZTA, as well as confronting them and their family. If a person is assessed as safe to drive, then a suitable review period should be defined.

Remember driving safety is an important part of assessing and managing clients with Dementia. However removal of someone's driving licence has a major impact emotionally and on their lives.

Dementia and Driving

Part 1: Guidelines for using the Driving Assessment Protocol

Introduction:

This guideline is designed to assist all clinical staff in assessing the driving safety of a person who wishes to continue driving in the context of having cognitive impairment¹. It is important to stress that these decisions can be made either in primary or secondary care health services, or after consultation between these sectors. The guidelines reference the step-by-step flow diagram (*Appendix 1*). The guideline is aimed at those clients under our care who have cognitive impairment² or dementia³; however there are numbers of other common medical reasons⁴ which may be a reason for people needing to stop driving.^{5 6} (A list of some of the more common ones we encounter is provided in *Appendix 2*.)

Many people with Mild Cognitive Impairment (MCI) or dementia have already voluntarily limited or ceased driving⁷. However some have not; and it becomes our clinical and legal responsibility to make reasonable efforts to determine that those who are continuing to drive are safe to do so⁸.

A person should be warned in advance that driving safety is one factor that we have to consider in all cases where there are memory problems⁹. This may be done by highlighting the issue in the information package or pamphlet about the service, sent out prior to the person's initial assessment. Otherwise it needs to be explained directly to all those who are being assessed for problems with their memory¹⁰. It also needs to be emphasised both to the person and their families, when necessary, that we have a legal obligation to do this for the sake of both their safety and that of the other drivers on road¹¹.

We should explain to people and their families that there is a clear link between memory impairment, dementia and unsafe driving, and that this is the reason for our concerns and

¹ Carr, D., Duchek, J., Morris, J (2000) Characteristics of Motor Vehicle Crashes of Drivers with Dementia of the Alzheimers type

² Classen, S., Levy, C., McCarthy, D., Mann, W., Lanford, D., Waid Ebbs, K (2009) Traumatic Brain Injury and Driving Assessment: An Evidence Based Literature review

³ Australian and New Zealand Society for Geriatric medicine (2009) Position Statement No 11 – Driving and Dementia

⁴ Molner, F (2010) Approach to assessing fitness to drive in patients with cardiac and cognitive conditions

⁵ McKenna, P., Bell, V (2007) Fitness to drive following cerebral pathology: The Rockwood Driving Battery as a tool for predicting on-road driving performance

⁶ McKenna, P (1998) Fitness to drive: A neuropsychological perspective

⁷ Man Son Hing, M., Marshall, S., Molnar, F., Wilson, K (2007) Systematic Review of Driving Risk and the Efficacy of Compensatory Strategies in Persons with Dementia

⁸ Beran, R (2005) Personal viewpoint – Analysis and overview of the guidelines for assessing fitness to drive for commercial and private vehicle drivers

⁹ Bieliauskas, L (2005) Neuropsychological assessment of geriatric driving competence

¹⁰ Odenheimer, G (2006) Driver safety in older adults – The Physicians role in assessing driving skills of older patients

¹¹ Molnar, F., Byszewski, A., Rapoport, M., Dalziel, W (2009) Practical Experience Based Approaches to Assessing Fitness to Drive in Dementia

apparent focus on driving safety. This is particularly important for those clients who have a Mild Cognitive Impairment (MCI) or similar, and whose condition may worsen over the years ahead. They should be warned about the prospect of becoming unfit to drive in the future, if this is a real prospect for them. All these discussions should become a normal part of our clinical interaction with patients¹².

We need to be aware that some people may be unsafe to drive in spite of having a reasonable cognitive testing performance¹³. Not all those with impairment have progressive cognitive decline. Some may have specific neuro-cognitive deficits such as visuo-spatial problems¹⁴ following a stroke, or prominent executive dysfunction which leads to impaired anticipation of hazards, a lack of concern for road rules or impulsive decision making. Others may be unsafe to drive because of their mental health or addiction issues. We need to listen to the concerns expressed by family members about a person’s driving.

Six things to remember:	
1.	We cannot make a perfect prediction of driving safety even with OT Driving Assessments. We have to make a reasonable clinical decision “on the balance of probabilities” about driving safety and be consistent in our practice. We cannot “do nothing” because we are not sure – we have to be seen to be making a definitive clinical decision about a person’s safety to drive on the road amongst other drivers.
2.	These are guidelines; we have tried to create a user-friendly framework, but as each case is very different, clinicians need to use their judgement and use the guidelines in a flexible manner.
3.	If clinicians are sufficiently concerned about a person’s driving safety then action should be taken immediately to make sure that the person is not driving.
4.	The most useful assessment of driving safety remains the OT Driving Assessment (including an on-road assessment) and throughout the interaction with a person and their family, we need to be encouraging them to undergo this form of assessment if there is any uncertainty about their driving safety.
5.	That assessing someone as being “not safe to drive” is not the same thing as being able to predict who will have an accident in the next year. Accidents and especially fatalities are rare events, and we have to understand that we cannot predict these in advance. However if someone is not safe to drive then other drivers on the road are safer through our actions.
6.	Lastly, if all those that we refer for an OT Driving Assessment fail that test, then our threshold for referral is too high and there will be unsafe drivers on the road – we need to be comfortable with asking people to have the test, even though some will pass.

¹² McKenna, P., Jefferies, L., Dobson, A., Frude, N (2004) The use of cognitive battery to predict who will fail an on – road driving test

¹³ Dawson, J., Anderson, S., Uc, E., Dastry, E., Rizzo, M (2009) Predictors of driving safety in early Alzheimer Disease

¹⁴ Ball, K., Owsley, C., Sloane, M., Roenker, D., Bruni, J (1993) Visual Attention Problems as a Predictor of Vehicle Crashes in Older Adults

Why invest our energy in doing extra testing on people?

The question is asked as to why we should use our own resources to get a better understanding of a person's driving safety. Why not send letters to the NZTA¹⁵ on the entire group of those with mild cognitive impairment or mild dementia, thereby forcing the individual to have the testing if they wish to recover their licence? The answer is that, although we have a duty to protect the person and other road users, we also have a duty not to do harm. This means we cannot put them through the trauma, cost and inconvenience of having their licences revoked without due cause¹⁶. We are also required to have a reasonable level of concern if we are to break our usual duty of confidentiality to the person. Therefore we need to have sound clinical reasons for making such a recommendation to NZTA, and that will not be the case unless we have completed a comprehensive assessment, including a review of driving safety¹⁷. However we have made an effort in this guideline to limit excessive testing which will not offer us any more certainty about a person's driving safety. We have also tried to rely as far as possible on that information which is completed as part of a normal comprehensive assessment, with a few additions when required.

Those patients who refuse to cooperate

Some people do refuse to cooperate with our assessment of their driving safety. In these cases, where there are sufficient grounds for concern (whether from history, cognitive testing to date or reports from family members), we can legitimately notify the NZTA under Section 18, if all other avenues of seeking cooperation with the person have failed. It is not uncommon for the therapeutic relationship between the person and their clinician to breakdown in the course of this process. People are often outraged at the suggestion that they might be unsafe to drive any longer, and sometimes "sack" their clinicians.

Initial assessment or review:

When a person is assessed as having problems with memory or dementia, or has received this diagnosis in another service, then there should be a thorough review of their condition. A comprehensive assessment should include questions about their mental and physical health; functional status, medications and a standardised cognitive test should be administered such as the MMSE, MOCA, RUDAS, ACE-III or equivalent. (*See Box below.*) Appropriate blood tests and scanning should be requested. Collateral history should be sought from family or carers. At the conclusion of the assessment, which may take place over more than one visit, and may require phone calls to family members for information, clinicians should be able to make the diagnosis and make an assessment of the likely dementia stage or severity (see below), and hopefully will have some idea about the most likely aetiology of the dementia. (It is hoped that this clinical decision-making process will be supported in the near future throughout Primary Care, with the introduction of some form of computerised Cognitive Impairment Assessment Tool and Pathway).

As part of the assessment, there needs to be a specific enquiry about the person's driving and the safety of this. This will involve asking the person and their family about their driving

¹⁵ Ministry of Transport (2008) Risk on the road; Ongoing New Zealand Household Travel Survey 2003-2007

¹⁶ Ott, B., Daiello, L (2010) How does dementia affect driving in older patients?

¹⁷ Ott, B., Anthony, D., Papandonatos, G., D'Abreau, A., Burock, J., Curtin, A., Wu, C., Morris, J (2005) Clinician Assessment of the Driving Competence of Patients with Dementia

history and the safety of the person's driving, looking at the person's car and finding out about the person's typical use of their car. There should be some specific enquiry about accidents or near-misses, and episodes of getting lost when out driving or walking. There should also be some attempt to ascertain the likely consequences of a person losing their licence and the impact on them and their family¹⁸.

Remember that this guideline deals specifically with those suffering from memory problems or dementia. Most of those under consideration will be of an age where other medical problems are an issue. For those that already have limitations in other respects such as visual impairment or mobility restrictions, having cognitive problems may start to cause a person's driving to become unsafe earlier than it would have otherwise. The disabilities should be viewed as additive and likely to compound each other. Hence the clinician should be even more cautious about assuming that someone is driving safely.

Cognitive Testing: Notes

The following tests have been included in the discussions in this document, as they are the commonly used tests clinically. The tests described are manageable bedside tests that can be used in both Primary and Secondary care. They each have their strengths and weaknesses, and none is specifically recommended. (However it needs to be noted that the MMSE is now under copyright and theoretically clinical users could be charged for using this as their preferred test.) Nonetheless, it is the test most clinicians are familiar with and is widely used still. It is recommended that clinicians familiarise themselves with the alternative tests (and move away from using the MMSE).

MMSE: Mini-Mental State Examination (scored out of 30)

MOCA: Montreal Cognitive Assessment (scored out of 30)

RUDAS: Rowland Universal Dementia Assessment Scale (scored out of 30)

ACE-III: Addenbrooke's Cognitive Examination – version 3. (Scored out of 100)

If a person requires further or more comprehensive testing, then a huge variety of Neuro-Psychological tests are available through Secondary Care Mental Health or Health of Older People Services, or through private Clinical Psychologists. Most tests used are pen-and-paper-type tests; others may employ computerised testing. This guideline mentions a few such tests such as the **Mazes Test, Trails Test A and B**: these are short tests which can be employed by many clinicians.

¹⁸ Classen, S., Horgas, A., Awadzi, K., Messinger-Rapport, B., Shectman, O., Joo, Y (2008) Clinical Predictors of Older Driver Performance on a Standardised Road Test

Dementia Staging and the Clinical Dementia Rating Scale

The following table (*Table 1*) is designed as the start of a clinical assessment of a person's likely driving safety. The staging shown is based upon the categories used in the Clinical Dementia Rating scale ¹⁹ and other similar scales, and is designed to be a descriptive and realistic picture of the severity of a person's cognitive and functional impairment. Indicative scores on typical cognitive testing scales are given, but much of the staging information comes from collateral history about the person's level of function (in personal cares, household tasks and outside responsibilities), usually obtained from a person's family or carers. Staging Dementia can be challenging, especially in those clients who are still able to provide a convincing affirmation in clinic of having full functional capabilities, but who are often found to be more impaired when a collateral history is obtained ²⁰.

The CDR structure was chosen, over alternatives such as the FAST (Functional Assessment Scale ²¹) and the GDS (Global Assessment Scale of Deterioration ²²), as it is well validated and commonly used in research, and has the advantage of a relatively simple structure. Also, some other Driving safety guidelines have based their recommendations upon this structure, such as those from the American Academy of Neurology.

Accordingly, once a person is identified as having MCI or Dementia, the clinician should attempt to allocate them to one of the CDR stages of Dementia severity. This is so that decisions about driving safety may be commenced, but is also a useful way of ascertaining or estimating a person's need for other interventions such as packages of care or medications such as Donepezil.

It is important to note that we are not using the CDR in a research or rigorous manner; instead we are using the structure of staging of dementia, as defined in that rating scale. The proper CDR uses a formal semi-structured interview (which takes around 45 minutes to complete). It has to be emphasised that we are not suggesting that clinicians complete this process. Rather, it is recommended that clinicians use the results of the person's cognitive testing and information about their level of functional capacity from the clinical and collateral history, to estimate a person's dementia severity or its stage, using a staging structure as defined by the CDR. This is less rigorous than using the formal test, but most of us have neither training nor permission to use the formal test. Nor the time to administer it to our patients. Also, for some people we do not have the luxury of collateral information being available, and therefore our staging decision will always be limited in its accuracy.

¹⁹ Morris, J. (1993) The Clinical Dementia Rating (CDR): Current vision and scoring rules

²⁰ Whelihan, W., Di Carlo, M., Paul R (2004) The relationship of neuropsychological functioning to driving competence in older persons with early cognitive decline

²¹ Sclan, S., Reisberg, B (1992) Functional Assessment Staging (FAST) in Alzheimers disease: reliability, validity and ordinality

²² Reisberg, B., Ferris, S., de Leon, M., Crook T (1982) The global deterioration scale for assessment of primary degenerative dementia

Table 1. Dementia Staging

Dementia Stage	Typical Cognitive Scores*	Cognitive and Functional levels
No Dementia	MMSE:> 27/30 ACE-III:> 90/100 MOCA :> 26/30 RUDAS:>26/30	No cognitive impairment: Normal memory and cognition Independent function Competent in home, work and hobbies
Mild Cognitive Impairment	MMSE: 24 – 27/30 ACE-III: 80-90/100 MOCA:18 – 26/30 RUDAS: 23-26/30	A mild but noticeable decline in cognition: Mild forgetfulness Mild disorientation Mild impairment in problem solving Generally independent in most activities May struggle with complex tasks
Mild Dementia	MMSE:18-23/30 ACE-III: 65-76/100 MOCA : 11-17/30 RUDAS: 17-22/30	Definite cognitive decline and impairment Moderate memory loss and disorientation Impaired problem solving Mild impairment in household tasks / personal cares Requires prompts or supervision with some tasks Complex tasks and roles no longer possible Social interactions often well preserved
Moderate Dementia	MMSE:10 – 18/30 ACE-III: 35 -64 /100 MOCA : 6 – 10 /30 RUDAS: 10 – 16/30	Significant impairment of cognition/function Marked memory loss Disorientation to time and place Decreasing ability to make judgements Decreasing ability to engage socially Decreasing ability to function independently Needs assistance with personal cares Requires supervision when leaving home May get lost when away from home Limited capacity to complete tasks in home No longer able to participate in usual activities
Severe Dementia	MMSE:<10/30 ACE-III: <35 /100 MOCA : <6 /30 (or not testable) RUDAS: <10/30	Profound impairment of cognition / function Severe memory impairment / disorientation Spoken language limited or lost Incontinence No capacity for making judgements High dependency on others for personal cares Unable to contribute to household chores Often unable to recognise family members Increasing loss of psychomotor skills Frequent behaviour or psychiatric complications

*The cognitive testing scores provided are indicative. The tests included are those commonly employed in New Zealand in both primary and secondary care. The MMSE is well validated and there are also studies completed showing typical scores in the different stages of dementia such as the CDR stages. However, there is still variation between different studies in this regard. (Complicating the use of the MMSE is the fact of its copyright status, and potential for cost to clinicians using this test. Accordingly, many services have already switched to other forms of testing such as the RUDAS, ACE-III and MOCA). In contrast to the MMSE, while the RUDAS, the ACE-III and the MOCA have been validated to define thresholds between normal, MCI and Dementia cases, they have not been studied further to link scores with the different stages of established Dementia. As a result, the staging scores (especially between mild, moderate and severe dementia) given in the table are based more on clinical experience than research studies. All the tests suffer from both ceiling and floor effects to different degrees (i.e. they are not sensitive to mild degrees of impairment and cease to be useful before the end of the illness). The correlation between scores and staging is compounded by factors such as age, language spoken, education, baseline intellectual functioning, specific cognitive issues such as dysphasia, and according to the aetiology of dementia. In particular, those with Fronto-temporal dementia may have relatively well-preserved scores on tests such as the MMSE in spite of quite high levels of impairment and behavioural disturbance.

(A recent study by Gary Cheung et al (personal communication: not yet in print) suggested that the cut-off scores for ACE-III and MOCA, dividing those with mild dementia from controls was lower in New Zealand clinic populations, than in the usual validation studies. They found that the validated RUDAS scores was similar to the results in the clinic population. Hence the scores in the above table may yet be amended over the next year, and should be further seen as “indicative.”)

Other services may be employing other cognitive tests not listed in this table, such as the SLUMS or informant questionnaires such as the IQCODE. However, it is important to recognise that, regardless of the test used, much of the useful information that allows clinicians to determine CDR-type staging comes from the combination of a full clinical assessment of the person, and from a reliable source of collateral information about the person.

Dementia Staging and Driving Safety

The purpose of making an assessment of the person’s dementia severity or stage, is that clinical decision-making about driving safety follows on from this. The following Table (*Table 2*) is a summary of clinical recommendations about driving safety according to Dementia Stage/Severity (and by implication, shows the clinical advice re continuation, restriction or cessation of driving).

Table 2. Dementia Stage and Driving Recommendations

Dementia Stage	Driving Recommendation
No Dementia	<p>May continue to drive Check for Other Medical Conditions</p>
Mild Cognitive Impairment	<p>Most people Safe to Drive Consider OT driving assessment, Restricting or stopping driving if:</p> <ul style="list-style-type: none"> • Family concerns • Recent accidents or near-misses • Functional impairment in some complex tasks • Behavioural disinhibition – “risk-taking” • (Notify NZTA)
Mild Dementia	<p>Driving Safety is Uncertain: Some people safe, others unsafe to drive Safety not predicted by Cognitive testing / Dementia Stage</p> <p>Person needs further investigation / review:</p> <ul style="list-style-type: none"> • OT Driving Assessment ** (Preferred and Recommended) • Further Collateral History • Clarification of Function level in other areas • Driving Questionnaires • Further cognitive testing • Alternative on-road driving assessment • Second Opinion <p>Clinical Decision needs to be made!</p> <ul style="list-style-type: none"> • Continue Driving – Review Date, • Restricted Driving – Review Date, or • Stop Driving Immediately • Notify NZTA
Moderate Dementia	<p>Must Stop Driving! Notify NZTA</p>
Severe Dementia	<p>Must Stop Driving! Notify NZTA</p>

For those without Dementia and those with Moderate or Severe Dementia, the recommendations are relatively clear and uncontested. Those people not suffering from MCI or dementia may continue to drive as long as other medical conditions are no obstacle. Those with Moderate or Severe Dementia must cease driving, as they will be no longer safe to do so, and will certainly have some of the impairments described in the Medical Aspects of Fitness to Drive. These clients should be asked to stop driving immediately, and the NZTA should be notified (A letter template to the NZTA is included below in *Appendix 3*.) There is nothing to be gained from referring these groups for an OT Driving Assessment, as they are unlikely to pass and should not be put through the trouble and expense. There will be a few individuals who will demand the right to such an assessment, and a clinical decision regarding the usefulness of this will need to be taken, including whether the medical practitioner would still consider the person unfit to drive even if they were to pass the assessment.

For those with Mild Cognitive Impairment, most will be safe to drive for the immediate future, but should be specifically reviewed by a clinician in six months or one year. However, it is worthwhile checking with families or carers to see if they have any concerns about the person's driving safety. Specific questions should be asked about recent accidents, behaviour when driving, near-misses, getting lost and early impairment in other areas of complex task completion (e.g. cooking or managing finances). If there are concerns, the person may be asked to restrict their driving to non-rush hour driving times and to not drive outside a radius of around 5km from their home. If restrictions are recommended, then the NZTA should be notified so that the person's driving licence can be amended accordingly (*Appendix 3*). Rarely a person will be advised that they should cease driving, often in the context of compounding impairment from physical illness or behavioural disinhibition making their driving unsafe. For those who are assessed as safe to drive, it is worth telling the person and their family that MCI does in some cases progress to dementia, and that driving safety will need to be reviewed at that point. (However they do need to be reassured that for many people, MCI does not show any such progression.) If the clinician is uncertain about the person's driving safety or feels unable to make a decision, then further investigations may be completed, as per the group with Mild Dementia (see below).

Those with Mild Dementia (those with mild memory and cognitive impairment and a clear functional loss) are unfortunate in that their driving safety is uncertain and cannot be inferred from their cognitive test results, diagnosis and clinical stage. Studies have shown that some of these individuals drive as well as their non-demented age-peers. However, others are definitely unsafe to drive, will fail an on-road driving assessment and are at risk of causing a potentially fatal road accident. The difficulty is that these two groups cannot be distinguished by looking solely at their cognitive testing scores and/or level of functional impairment. On occasion, clinicians may feel confident that a person is not safe to drive, especially if they are impaired in a number of other functional areas, or there is a clear history of concern from family already expressed. If this is the case, then the clinician may proceed with making their recommendation about driving, on the basis of that clinical view.

However, most often, the driving safety of a person with Mild Dementia will be uncertain, and further review and investigation is required before a clinical decision can be made. Having said which, the clinician must make a definite decision about driving safety in someone who has Mild Dementia, such that this can be documented and communicated with the person and their family. The situation and decision about a person's driving cannot be "parked" and events allowed to evolve.

The following section describes some of the further investigations that may be undertaken in either primary or secondary care settings (or a combination of both), to further inform the clinical decision making about a person's driving safety.

Driving Safety in those with Mild Dementia: Further Investigations

This section describes some of the options available to clinicians who are trying to ascertain the driving safety of someone with Mild Dementia (if this is not already apparent). The suggestions made below are not prescriptive, and are often not clinically possible as described. For example, many clinicians do not have access to easy sources of collateral information about a person's driving (or the person may have a family with a vested interest in the retention of their driving licence). In other cases, what is possible in the way of further testing may be limited by the person's ability or willingness to pay, availability of testing or the person's absolute refusal to cooperate. In such cases, clinicians should gain what information they can and make the best decision possible in the circumstances.

The further investigations have been divided into two different stages:

First Stage: Seeking Readily-available Information.

Further clinical review should be undertaken to gather some of the following information or review associated issues. This may be completed by the assessing clinician or another person in the service.

- Standard cognitive testing may be checked, repeated or extended. For example, if testing was done in hospital in the context of delirium, then the tests should be repeated. If the diagnosis was made on the basis of an MMSE score, then perhaps either MOCA or ACE-III testing could be completed.
- Collateral history should be sought from families regarding the dementia severity, and overall functional capacity, observed driving behaviour, traffic violations, accidents and near misses. Asking if family are comfortable travelling as passengers (or allow grandchildren to be passengers) is often a telling indication of concern. The Driving Questionnaires can be administered (see *Appendices 4 & 5*)
- Other medical problems, physical disabilities or medication risks can be reviewed with the person.
- Mental Health factors, medication and use of alcohol or other substances should be considered.
- There should be some discussion about car usage and availability of alternative forms of transport or other drivers in the household. The practical impact of losing one's driving licence needs to be explored. The person should be asked if they have already restricted their driving voluntarily and why.
- If the person's car is available (e.g. parked outside), it should be inspected for signs of damage. (It is not uncommon to find that the car is significantly damaged.)

At the completion of the First Stage, the clinician may feel that there is now sufficient extra information to allow them (or their team) to make a decision about the person's driving safety. If this is the case, then the person should have this discussed with them, and if their driving is to be restricted or stopped, then the NZTA should be notified accordingly. If a clinical decision cannot be made comfortably, then specific review required to investigate the likely safety of the person's driving, as described under the Second Stage below.

Second Stage: Specific Driving-Related Investigations

In this stage, clinicians need to seek information that is more specific to actual Driving Safety, and which will allow a definitive decision to be made regarding the continuation or restriction of driving. The best information that can be sought is for the person to undergo an Occupational Therapy (OT) Driving Assessment by one of the specialised services providing for this. An OT Driving Assessment normally includes both off-road testing and, if recommended, an on-road driving test which is standardised and rigorous. These tests are not funded in most parts of New Zealand, and the total cost of both parts of the assessment can be in excess of \$500. This cost is frequently an impediment to clients going onto having these tests completed.

In making a referral to an OT Driving Assessment agency, relevant clinical information should be included such as history and cognitive test results, highlighting those most pertinent to driving. (A letter template for the Auckland region is included in *Appendix 6*.)

It needs to be emphasised that although OT Driving Assessments are regarded as the most reliable indicator of driving safety, this form of testing is not without its critics. The different companies offering this service use different tests and scoring protocols, and the equivalence of their testing is therefore uncertain. Furthermore, the companies operate in different ways and the level of cooperation with the referring clinician can be variable. Lastly, the testing does still not test how a person is likely to react in an emergency situation. Therefore, while the results of OT assessments should be viewed as being the strongest available evidence about a person's driving ability, they should not necessarily be viewed as the last word on the matter (see Cochrane Review of driving and dementia)²³.

Where people are unwilling or unable to undertake an OT Driving Assessment, clinicians need to turn to alternative but less informative sources of information about the person's driving skills. This includes other forms of On-Road driving assessment, further collateral information about driving, and / or more extensive cognitive testing. It is also possible to investigate the person's performance in other activities of daily living: if they have obvious impairments in complex tasks such as cooking, managing their finances, paying bills, and shopping, these impairments may provide an indication of their likely performance in driving. It is also possible to obtain a second opinion, possibly from a colleague or from another service such as a specialised memory or dementia service. None of these options will provide a definitive answer to the question of driving safety, but may be useful in informing the clinical decision in this regard. The alternatives are summarised in *Table 3* below.

All of the proposed alternatives have their limitations. The problem with other forms of On-Road driving assessment is that the testing is not as rigorous and the testers do not have the clinical insights into the conditions of those being tested. Further collateral information can be useful, for example filling in the Driving Questionnaires (*Appendices 4 & 5*), but literature shows that family members are not totally reliable in assessing the driving safety of a person, and are often conflicted about what response to give the clinician. Many have a vested interest in the person continuing to drive, or believe that if they are present as a "guiding and directing" passenger, then no major accident is likely. Further cognitive testing can be useful in identifying cognitive deficits, but these forms of testing, even those that are

²³ Martin, A., Marottoli, R., O'Neill, D (2009) Driving assessment for maintaining mobility and safety in drivers with dementia (Review)

completed in driving simulators, do not reliably separate those clients who will not pass an OT Driving Assessment from those that will pass²⁴. Other forms of functional impairment can be helpful, but are only suggestive of driving capabilities. Lastly, a second opinion from a colleague or someone experienced in dealing with this situation can be helpful, but their clinic-based assessments are still likely to be less accurate than the OT Driving Assessment. Nonetheless, if the person will not undergo an OT Driving Assessment, these other sources of information have to be the basis on which a clinician must make their clinical decision (however imperfect that may be) about whether someone with MCI or Mild Dementia should still be driving.

The alternative forms²⁵ of testing can all be employed in making the decision. An on-road driving test with an AA instructor can be requested at the same time as asking a family member to complete a Driving Questionnaire, looking at the person's car, **and** completing Trails tests A and B. A clinical decision can then be made using all that information collected.



Remember that we are able to recommend three options to people

1. That they can continue to drive for the moment
2. That they can only drive under certain limitations such as time of day and/or in their local area; or
3. That they must cease driving altogether.

²⁴ Brown, L., Stern, R., Cahn-Weiner, D., Rogers, B., Messer, M., Lannon, M., Maxwell, C., Souza, T., White, T., Ott, B (2005) Driving Scenes test of the Neuropsychological Assessment Battery (NAB) and on-road driving performance in aging and very mild dementia

²⁵ Innes, C., Jones, R., Dalrymple-Alford, Hayes, S., Hollobon, S., Severinsen, J., Smith, G., Nichols, A., Anderson, T (2007) Sensory – motor and cognitive tests predict driving ability of persons with brain disorders

Table3: Further Investigation of those with Mild Dementia

Drivers with Mild Dementia: Further Reviews needed	
First Stage: Review / Seek Readily-Available Information	<ul style="list-style-type: none"> ➤ Review / repeat Cognitive Testing ➤ Obtain Collateral History ➤ Review other medical issues / medication ➤ Address MH issues / substance abuse issues ➤ Discuss car usage and restriction ➤ Inspect car where possible
<p>Can a Clinical Decision be Made about Driving Safety?</p> <p>Yes  Discuss with person and family. Notify NZTA as required</p> <p>No  Go to Second Stage (Below)</p>	
Second Stage: Specific Driving-Related Investigations	<p><u>Preferred option: **</u> Referral for OT On-Road Driving Assessment</p> <hr/> <p>Alternatives: Other On-road driving assessment</p> <ul style="list-style-type: none"> ➤ On-Road Safety Test ➤ Driving Instructor e.g. AA Driving School <hr/> <p>Alternatives: Further cognitive / functional testing</p> <ul style="list-style-type: none"> ➤ Trails A & B and/or Mazes test ➤ Neuropsychological Testing ➤ Computerised testing in simulator ➤ OT assessment of other functional skills – IADLs <hr/> <p>Alternatives: Further information:</p> <ul style="list-style-type: none"> ➤ Inspection of car ➤ Driving Questionnaires (<i>Appendices 4&5</i>) <hr/> <p>Alternatives: Referral for another opinion:</p> <ul style="list-style-type: none"> ➤ Referral to Secondary Care service ➤ Referral to colleague
<p>Make Definitive Clinical Decision re Driving Discuss with Person and their Family. Notify NZTA where necessary.</p>	

Notes about Referrals for an On-Road Driving Assessments

These notes are included because of the issues that arise when referring someone for an On-Road Driving Assessment, especially where the person is required to pay for that assessment out of their own pocket. Where the person is paying and is clearly the “customer” of the agency performing the testing, it is nonetheless vital clinically for the information obtained through testing to come back to the referrer. This issue applies whether the referral is for an OT Driving Assessment or to another agency such as a driving instructor.

As a result, it is crucial for the referrer to have agreed with the person being tested for there to be communication between the testing agency and the referrer. This must be agreed at the time the referral is made, and permission sought from the person to allow the information to be sent back to the referrer. The clinician needs also to be clear about whether driving should cease until the testing has been completed. A formal referral letter then should be written explaining the situation, confirming that the person has consented to release of the testing results, and asking for an opinion on driving safety (including whether a restricted driving license would be suitable). If a clear opinion has not been made by the testing agency, then the referrer should feel free to contact the tester to discuss the performance in the driving test. (A sample letter template has been included in the *Appendix 6*.)

When the testing has been completed, a follow-up appointment needs to be made so that the results can be discussed and recommendations made about driving. If the person is deemed unfit to drive or is advised to restrict their driving (usually to between 10am and 2pm, and to only drive within 5km of their house), then the NZTA should be notified accordingly. This is to formalize the decision and make sure that the person’s license details held by the NZTA are up-to-date.

When the person has consented to an OT Driving Assessment, then a referral should be made to one of the local agencies providing this. Currently, in the Northern Region, there are a number of alternative agencies providing these tests and the person and their family should be provided with the opportunity to choose. If a person passes the OT Driving Assessment, then the report will be sent back to the referrer. However, when a person fails the test, it is the practice of most OT Driving agencies to notify the NZTA directly. We would prefer that there is a discussion between the referrer and the OT Assessor prior to this step being taken; however this would require a change of protocol in some of the agencies. In contrast, the other testing agencies such as Driving Instructors will not notify the NZTA about fail results.

Some people, having failed one On-Road Driving test may undertake further testing, and may pass that assessment. We are not always aware of this process as referrers. If clinically, our assessment remains that the person is probably unsafe to drive, then we should seek to have their licence revoked by the NZTA, under Section 18 of the Land Transport Act.

Not all the OT Driving Assessments available use the same testing protocol or scoring system. We need to be aware that there are differences between the available tests. The OT Driving Assessment also has its limitations and cannot predict accidents or fatalities with any certainty. No available testing process will evaluate directly how a person may respond in a real emergency situation.

Making a Decision about Driving Safety

Following assessment of the person's dementia, and investigation into their likely driving safety, the clinician needs to make a decision about whether the person can continue to drive as before, or to recommend that their driving be restricted or cease altogether²⁶. As discussed, where the person has no evidence of dementia or has moderate or severe dementia the decision is relatively straightforward. Where the person has MCI, driving is usually possible, but restrictions may be recommended if there are concerns from family or about behaviour. Rarely, people with MCI may be asked to stop driving. However, for those clients who have Mild Dementia, a definitive decision often can only be made following further investigation into likely driving safety as outlined above.

The preferred option is for the person to undertake a formal OT Driving Assessment. However in many cases, especially when the person would not consent to an OT Driving Assessment, the decision can only be based on the information obtained, clinical judgement and a balance of probabilities. However, clinicians do have a clinical and legal responsibility to make a clear decision in these cases, and cannot defer or ignore the issue in front of them.

Once the decision has been made, it is critical to communicate this with the person and their family, clearly document the decision and notify any other clinical teams involved, and notify the NZTA so that appropriate changes can be made to the person's licence details. It is possible, in view of the threat to therapeutic relationships caused by removal of someone's licence, for the clinician to write to the NZTA and have that agency make the "final decision." Research completed at Auckland DHB suggested that families prefer that any change to a person's driving status or permission is communicated to the NZTA. This makes it easier for families to remind the person that they are no longer able to drive or have restrictions in place, when the person may have forgotten the conversation and their promise to abide by the clinical advice²⁷.

When the NZTA receives a clinical recommendation that the person is no longer safe to drive, the Agency will write to the driver giving them the opportunity to surrender their licence voluntarily in the following two weeks. If this does not happen, then the person's driving licence will be formally revoked by the Agency. A person who has had their driving licence revoked by the NZTA, may challenge that decision by virtue of making an appeal to the District Court under Section 106 of the Land Transport Act (1998).

If the clinical decision is that the person should stop driving, then there are further recommendations, listed in the section below.

Following assessment as not safe to drive

For those clients who have their licence revoked or driving stopped due to their cognitive impairment, the impact can be devastating, both emotionally and in terms of their ability to

²⁶ Alexandersen, A., Dalen, K., Bronnick, K (2008) Prediction of driving ability after inconclusive neuropsychological investigation

²⁷ Chakcko, E (2013) Driving Assessment and Beyond: An Observational Study (DABOS). Dissertation submitted to Royal Australian and New Zealand College of Psychiatrists - Faculty of Psychiatry of Old Age Training Programme.

maintain their independence.²⁸ The capacity to drive is a potent personal symbol of freedom and autonomy, and clinicians should not be surprised at the hostility that often results from suggesting that someone's driving should be restricted or stopped altogether. It is not uncommon for people to become depressed following having had their driving licences revoked. There is also some suggestion that removal of a person's licence may hasten placement into care. Certainly social isolation, diminished community engagement and feelings of loss may occur. There is also a marked handicap for those who have lost their licence in completing tasks such as shopping or attending appointments.

Key workers will need to help the person and their family manage their new situation. It is critical that any concerns and decisions are communicated sensitively and with family present. It is also vital that the person is offered emotional and practical support, including:

- Counselling and support
- Providing the client with written information / pamphlets / local resources
- Engaging with client's family / whanau to seek their assistance with transport
- Transport advice, including access to Gold Cards and information about public transport
- Referral to Age Concern for Total Mobility Transport Subsidy (Half price taxis)
- Information about services such as Driving Miss Daisy

Many people reject the advice to stop driving when this is recommended. A small number will request second opinions or further testing. In general, if the person has moderate or severe dementia, then the clinician should attempt to dissuade them from further testing (which is likely to be a futile exercise and a waste of money.) If the person has mild dementia, then having conflicting results from repeated testing becomes a possibility and leaves all parties uncertain as to making any clinical decision on driving safety.

A person who refuses to stop driving:

Some patients refuse to stop driving even after receiving notification from the NZTA that their driving licence has been revoked. When this happens the following are recommended:

- The person should be reminded of their licence status (this should be followed by a letter to them and their family).
- They should be informed that they will be effectively uninsured if they drive
- The assistance of the person's family/Enduring Power of Attorney should be enlisted, where possible, to help with situation (disabling or removal of vehicle etc)
- Notification of authorities. Where a person has had their driving licence revoked due to dementia, but is continuing to drive against medical advice, it is recommended that a letter be sent to either the police and/or the NZTA. This breach of confidentiality is allowed under Principle 11(f) of the Health Information Privacy Code, where the disclosure is necessary to "prevent or lessen a serious threat" to either public safety or the life and health of the individual. We have had conflicting advice regarding whether clinicians should notify the police directly about someone continuing to drive without a licence. It is the NZTA's view that clinicians should send a letter to the Agency alone, and that the Agency will alert the police to the situation. It is the view of the NZTA that

²⁸ Liddle, J, Bennett, S, Allen, S, Lie, D, Standen, B (2013) The stages of driving cessation for people with dementia: needs and challenges.

clinicians may be more vulnerable to complaints about breach of confidentiality or privacy, if they go directly to the police. However, the contrary view has been expressed in a legal opinion obtained in preparing this update; in the view of this opinion, it is reasonable for clinicians to notify the police directly, where a person is clearly a risk to others and themselves because of continued driving following the removal of their licence. It is therefore recommended that the clinician certainly notify the NZTA in all cases of someone continuing to drive having had their licence revoked; it is also recommended that clinicians notify the local police directly, perhaps where the assessed risk is relatively high. Regardless, the person and their family should be told of the course of action that the clinician is taking. This may be couched in terms of the legal obligations on all clinicians to inform authorities about people who are no longer safe to drive, but are not abiding by that clinician's assessment.

If the clinician is concerned that there might be a potential complaint from the person, following such notification of either the NZTA or police, then it may be advisable to seek legal advice or discuss the case with a colleague – which should then be documented.

Driving and Dementia

Part 2: Clinical and Legal Background

Introduction

This guideline is designed to assist clinicians in the decision-making process around those people who have some form of cognitive impairment and are also continuing to drive a motor vehicle. This section provides some of the legal background in more detail, and also refers to the research literature relating to issues around driving safety.

People aged 80 and over have the same number of mortalities per kilometre- driven as 16 - 20y olds. This is likely in part to be due to their greater physical fragility, even in slower-speed collisions, but it is also be due to a subset of that age bracket that are driving with cognitive impairment^{1 2} and are therefore at a higher risk of causing a MVA¹⁵.

It is accepted that people with moderate to severe dementia are not safe when driving a car. However it is known that many of those with mild cognitive impairment or in the early stages of dementia may be able to drive at least as safely as their peers. Unfortunately for this latter group there is no fool-proof standardised bedside clinical test³, which can be used to allow a clinician to make the decision about safety of someone's driving¹⁵. It is recognised that as people's performance on cognitive or neuropsychological testing diminishes then their driving safety also does²⁹. However there is generally no definitive "cut-off" point in any test that allows for the accurate identification of the subgroup that is unsafe to drive³⁰. For example, although one study did show that 64% of those with an Mini-Mental State Examination (MMSE) score of <24 failed an Occupational Therapist (OT) Driving Assessment, similar studies have not shown a strong relationship between MMSE score and driving safety³¹. A recent meta-analysis of studies looking for links between cognitive testing, executive functioning and driving safety, found that most forms of testing have only modest predictive value, at best.³² Most bedside or neuropsychological test batteries unfortunately have only modest degrees of sensitivity and specificity when used to predict a person's capacity to pass an OT Driving Assessment. The use of combinations of short bedside cognitive and/or functional assessments may offer some improvement in predictive value.³³ However, the rate of false positives and false negatives are still too high to make the assessments of driving safety with confidence, using only bedside or neuropsychological tests. This also

²⁹ Reger, M, Welsh, R., Stennis Watson, G., Cholerton, B., Baker, L., Craft, S (2004) The Relationship Between Neuropsychological Function and Driving Ability in Dementia: A Meta-analysis

³⁰ Ott, B., Heindel, W., Whelihan, W., Caron, M., Piatt, A., DiCarlo, M (2003) Maze Test Performance and Reported Driving Ability in Early Dementia

³¹ Sylyk, J., Myers, L., Xia Zhang, Y., Wetzell, L., Sharpiro, R (2002) Development and assessment of a neuropsychological battery to aid in predicting driving performance.

³² Asimakopulos, J, Boychuck, Z, Sondergaard, D, Poulin, V, Ménard, I, Korner-Bitensky, N. (2012) Assessing executive function in relations to fitness to drive and their ability to predict safe driving.

³³ Carr, D, Barco, P, Wallendorf, M, Snellgrove, C, Ott, B. (2011) Predicting road test performance in drivers with dementia.

applies to forms of computerised cognitive testing and the use of driving simulators.³⁴ Furthermore, comprehensive batteries of bedside cognitive tests and neuropsychological testing are generally only available in secondary care settings or in private. This guideline hopes to provide some practical guidance for clinicians attempting to make a decision about driving safety, in all health care settings.

Likewise, reports of concern by family members or having had a recent motor vehicle accident⁷ (MVA) can be an indicator of problems with driving, but neither is totally reliable as a guide to making a clinical decision⁸ about someone's safety on the road⁷.

In the absence of an accurate, sensitive and specific bedside or in-clinic test which accurately predicts driving safety, clinicians are nonetheless still faced with the problem of having to decide how safe someone who has mild dementia will be on the road³⁵. Getting this decision wrong, may potentially result in allowing an unsafe driver to continue to drive, or unfairly penalising those who would have been safe to continue driving (for the time being)³⁶.

The test that is regarded as the most accurate and reasonable indicator of driving safety is an on-road driving assessment¹¹, preferably with a trained Occupational Therapist. The OT Driving Assessment usually involves a mixture of off-road testing (either cognitive assessment³⁷ ³⁸ or in a driving simulator) and a scored on-road driving test³⁹.

In our experience, many people react with more distress and anger to the news⁴⁰ that they can no longer drive than to receiving the diagnosis of dementia itself. Having to tell someone that they can no longer drive is often a challenge to maintaining any therapeutic relationship. This is, in part, because of the loss of insight or appreciation of their illness experienced by a high number of those with dementia. And for many people the loss of their driving licence is a major obstacle to continuing to live independently. In many parts of New Zealand there are few alternative means of transport. (Although half-price taxis are available, after someone gains approval for a Total Mobility card from Age Concern.)

As a result of this reaction to questions about their driving, many drivers refuse to submit to an expensive on-road driving test (or cannot pay to have one). Furthermore, the removal of their driving licence by the New Zealand Transport Agency (NZTA) often does not stop a small subset of drivers continuing to drive (due to either rejection of assessed risk or poor memory for the advice given), and the request by clinicians for intervention by family members may not prevent them driving. It is not uncommon for us to be confronted with a person who is clearly impaired as a driver and who is unlicensed but nonetheless continues to drive¹⁰.

³⁴ Hoggarth, P, Innes, C, Dalrymple-Alford, J, Jones, R. (2013) Predicting on-road assessment pass and fail outcomes in older drivers with cognitive impairment using a battery of computerised sensory-motor and cognitive tests.

³⁵ Molnar, F., Byszewski, A., Marshall, S., Man-Son-Hing, M (2005) In-office evaluation of medical fitness to drive – Practical approaches for assessing older people

³⁶ Iverson, D., Gronesth, G., Roger, M., Classen, S., Dublinsky, R., Rizzo, M (2010) Practice Parameter update: Evaluation and management of driving risk in dementia – Report of the Quality Standards Subcommittee of the American Academy of Neurology

³⁷ Freund, B, Gravenstein, S., Ferris, R., Burke, B., Shaheen, E (2005) Drawing Clocks and Driving Cars – Usage of Brief Tests of Cognition to Screen Driving Competency in Older Adults

³⁸ Elkin-Frankston, S., Lebowitz, B., Kapust, L., Hollis, A., O'Connor, M (2007) The use of the Color Trails Test in the assessment of driver competence: Preliminary report of a culture – fair instrument

³⁹ ACC (2004) Computerised Off-Road Driving Assessment

⁴⁰ Kay, L., Bundy, A., Clemson, L (2009) Predicting Fitness to Drive in People With Cognitive Impairments by Using DriveSafe and DriveAware

Availability of testing in New Zealand

The Ministry of Health ceased funding for on-request OT driving assessments in 2003. The OT Driving Assessment currently costs a person around \$170 - \$230 for the preliminary testing (a driving simulator test or computerised cognitive testing), and up to a total of \$400-700 if this is combined with the on-road test. These tests are available locally through a number of different agencies. However many drivers refuse to pay these costs or are in no position to do so ⁴¹. This fact is one of the major obstacles we face in making an accurate assessment of someone's driving safety. (Some District Health Boards in New Zealand do fund a small number of tests, but these are not available to the vast majority of people.)

Due to the costs of the OT Driving Assessments, some DHBs may refer patients to local driving instructors or equivalent. This certainly can be a cheaper option for an assessment of driving ability but lacks the rigor, validation and standardisation of the OT driving assessments. Nonetheless, for some people, this may be the only form of On-Road testing that can be negotiated with the person or their family ⁴².

Drivers are obliged to have their driving licence renewed at ages 75, 80 and every two years after that. This may be approved in clinic by their GP. However they may be referred for an "On-Road Safety Test" by their GP if there are any concerns about their potential driving safety ⁴³. This is an NZTA-approved on-road driving assessment, that involves driving with an assessor (not an OT) in the car on the road. This costs around \$60-70 including the cost of the new drivers licence and it is the driver's responsibility to organise this. The New Zealand Transport Agency (NZTA) advises that this system can be used at any point over the age of 75, to test people's driving, and not just at the point at which the person's existing driving licence is due to expire. We can make referrals ourselves through this system. However the ability to access this facility is not widely known amongst practitioners and it is clearly a much less rigorous test than the OT Driving Assessment. The testing is much less sophisticated than the OT driving assessments but is nonetheless clearly regarded as adequate for driver relicensing by NZTA. This testing is more likely to detect drivers who are obviously unsafe but may pass some who would fail an OT test, creating the potential for false reassurance of the client and unease in clinicians. Drivers under 75 have no access to this source of testing.

⁴¹ Wagner, J., Muri, R., Nef, T., Mosimann, U (2011) Cognition and driving in older persons

⁴² Lococo, K., Tyree, R (2010) Functional Abilities and Safe Driving *Medscape CME Pharmacists* 08/04/2010 Retrieved from <http://www.medscape.com/viewarticle/578231>> October 2013

⁴³ New Zealand Transport Authority (2009) Medical aspects of fitness to drive – A guide for medical practitioners

Legal considerations: “Medical Aspects of Fitness to Drive (2009)”:

The NZ Transport Agency defines two main legal obligations on medical practitioners (and by implication on other health professionals) under the Land Transport Act (1998)⁴⁴. These are:

- Consideration of any medical or other problems an individual may have when conducting an examination of an individual’s fitness to drive (or the implications of any newly diagnosed problems on their driving)⁴⁵, and
- To report to the NZTA any individual who continues to drive when advised not to (under Section 18 of the Land Transport Act).

Medical practitioners may recommend that drivers stop driving completely or may recommend that they drive only in accordance with certain limitations (e.g. only driving during daylight hours or in a localised area)⁴⁶. If a person voluntarily abides by our clinical recommendation, then there is no legal requirement to notify the NZTA but it is our belief that the NZTA should be notified by the clinicians involved. (This is because we believe that it is helpful for the person to receive a letter with the changes outlined from the NZTA, reinforcing and crystallising the clinical decision.) This should all be documented in the person’s clinical file. It may also be helpful if the person receives a copy of the letter of notification to the NZTA.

The Medical Aspects of Fitness to Drive (2009) makes the following statements about individuals with dementia:

- **“Driving may be permitted in cases of early dementia, provided that the medical practitioner is satisfied that there is no significant loss of insight or judgement and an individual does not show signs of disorientation or confusion.”**
- **“A driving assessment with an occupational therapist is recommended in all cases where there is some doubt about driving ability, especially should family members have concerns”⁴⁷.**
- **“(Individuals with confirmed dementia or cognitive impairment from whatever cause should not drive.” *This only applies to commercial or special licences.*)**

These statements highlight that those drivers with mild or early dementia may be permitted to drive but clinicians (with the assistance of OT Driving Assessments) have the responsibility of identifying the driving safety or otherwise of this group⁴⁸. Those with moderate or severe dementia can be assumed to lack judgement and/or display confusion and disorientation, and therefore should not be driving.

⁴⁴ Kumar, S., Pickering, B (2001) “Fitness to drive” in New Zealand: psychiatric aspects and the clinicians role

⁴⁵ Langford, J (2007) Usefulness of Off-Road Screening Tests to Licensing Authorities when Assessing Older Drivers Fitness to Drive

⁴⁶ Langford, J (2007) Usefulness of Off-Road Screening Tests to Licensing Authorities when Assessing Older Drivers Fitness to Drive

⁴⁷ Lincoln, N., Taylor, J., Vella, K., Bouman, W., Radford, K (2010) A prospective study of cognitive tests to predict performance on a standardised road test in people with dementia

⁴⁸ Molnar, F., Patel, A., Marshall, S., Man-Son-Hing, M., Wilson, K (2006) Clinical Utility of Office-Based Cognitive Predictors of Fitness to Drive in Persons with Dementia: A Systematic Review

Ethical considerations:

There are a number of conflicting principles that need to be reconciled in dealing with a person who may have some degree of impairment in their driving.

- We want to encourage the person's own expression of autonomy in any decision-making about their future driving. To this end the clinical relationship aims to be inclusive and with the goal of person being comfortable with the choice, along with their family, to stop driving or undertake the more definitive OT driving test if required ²⁹.
- We need to consider the implications of forcibly stopping someone from driving. This includes both their emotional reaction and the practical implications of no longer having a driving licence. The latter is critical in those people who have little access to other forms of transport ⁴⁹.
- We have an ethical responsibility to ensure the safety of the person themselves, as well as other road users, in those situations where there is clear or highly suggestive evidence that the person's driving is no longer safe.
- If we are going to breach our duty of confidentiality to someone, in the above situation (by notifying the NZTA or others), then we need to have clear indication of concern, which requires a thorough assessment of the client and complete honesty about our actions.

Summary:

In summary, we all have a responsibility to consider the safety of all individuals under our care when they are driving. This guideline is focussed upon the context of cognitive decline but attention needs also to be given to those with cerebrovascular disease, diabetes, visual impairment, cardiac problems and those impaired by mental health disorders or medication. Those who are at increased risk of having an accident when driving should be asked to stop driving, and if they will not accept this advice then notification of the NZTA is legally required. It is often difficult to assess the safety of an individual's driving when the cognitive impairment is relatively mild. Cognitive testing does not provide a definitive assessment of driving safety although deteriorating scores on testing do correlate with a worsening performance on driving assessments. An on-road Occupational Therapy driving assessment remains the accepted "gold-standard" in terms of assessment of driving skills and safety, and we need to be encouraging clients to "take the test". Unfortunately these are not funded and are expensive. We all need to be mindful of the likely emotional reaction to deciding that someone is no longer safe to drive, as well as the practical implications for them continuing to live independently.

⁴⁹ Carr, D., Ott, B (2008) The Older Adult Driver with Cognitive Impairment "It's a Very Frustrating Life"

Glossary

MHSOP	Mental Health Services for Older People
MCI	Mild Cognitive Impairment
NZTA	New Zealand Transport Agency
OT	Occupational Therapy / Occupational Therapist
MMSE	Mini-Mental State Examination
MOCA	Montreal Cognitive Assessment
RUDAS	Rowland Universal Dementia Assessment Scale
ACE-III	Addenbrooke's Cognitive Examination – version 3
CDR	Clinical Dementia Rating scale
FAST	Functional Assessment Scale
GDS	Global Assessment Scale of Deterioration
SLUMS	St Louis University Mental Status Examination
IQCODE	Informant Questionnaire on Cognitive Decline in the Elderly
IADLs	Instrumental Activities of Daily Living
On-Road Safety Test	NZTA-approved on-road driving assessment for driving licence renewal
AA	Automobile Association
EPOA	Enduring Power of Attorney
GP	General Practitioner
CVA	Cerebro-vascular accident
TIA	Transient Ischaemic Attack
CTO	Compulsory Treatment Order
LTA	Land Transport Act (1998)

Useful Resources

- New Zealand Transport Agency

<http://www.nzta.govt.nz/resources/supporting-older-drivers/docs/supporting-senior-drivers.pdf>

Pamphlet “Supporting older drivers – Help your older friend or relative stay mobile safely”

<http://www.nzta.govt.nz/resources/total-mobility-scheme/docs/total-mobility-around-new-zealand.pdf>>

Brochure – National Total Mobility Scheme

<http://www.nzta.govt.nz/resources/keeping-moving/docs/keeping-moving.pdf>.

Booklet – Keeping Moving: the positive guide for senior road users

- New Zealand Association of Occupational Therapy

<http://www.nzaot.com/about-occupational-therapy/driving-assessments.php>

Website description of OT Driving Assessments

- Office for Senior Citizens

<https://www.msd.govt.nz/documents/about-msd-and-our-work/publications-resources/research/coping-without-a-car/how-will-you-get-around-without-a-car.pdf>

Pamphlet “How will you get around when you stop driving – plan ahead so you can still do the things you enjoy”

- The Hartford – Insurance and Financial company USA

<http://www.thehartford.com/sites/thehartford/files/dementia-warning-signs.pdf>

Pamphlet “Warning signs for drivers with dementia”

<http://www.thehartford.com/sites/thehartford/files/1287779111224.pdf>

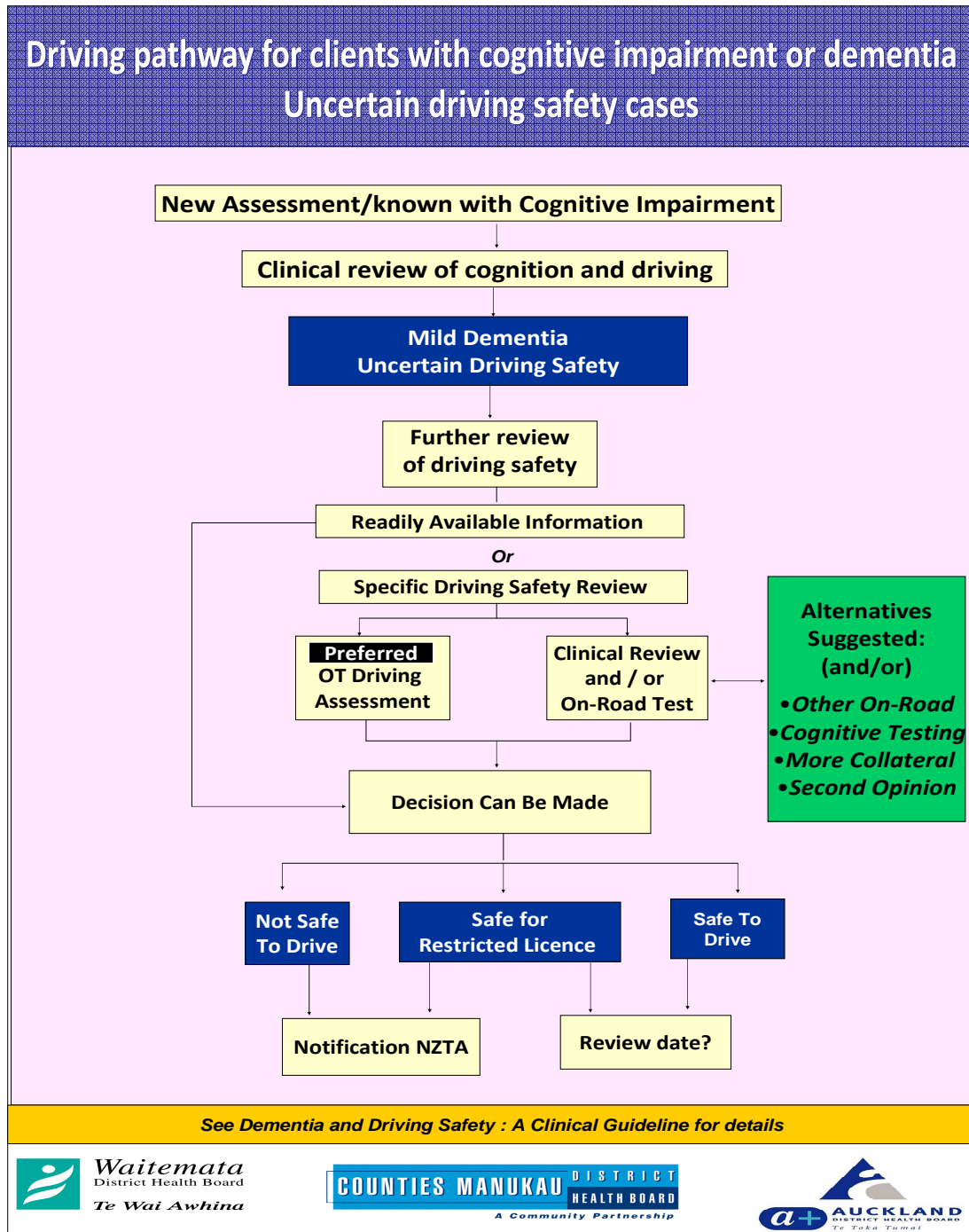
Pamphlet “Conversation Planner: How can I have good conversations about not driving”

- The Stroke Foundation

<http://www.stroke.org.nz/resources/Driving%20after%20a%20stroke.pdf>

Pamphlet “Driving after a stroke or TIA”

Driving pathway for clients with cognitive impairment or dementia



Other conditions affecting driving

This table contains a summary of some of the common conditions seen in practice. For a full description of the details of driving restrictions for these disorders and many others please consult Medical Aspects of Fitness to Drive (MAFTD) 2010. Remember that regardless of the cause, if an individual appears unsafe to drive it may be because of a combination of disorders and action needs to be taken. The following summary only applies to ordinary driving licences and not to commercial driving licences.

Conditions	Restrictions on Driving (Medical Aspects of Fitness to Drive)
CVA	An individual should not drive until clinical recovery is complete, with no significant residual disability affecting their ability to drive. They cannot drive within 1 month of the CVA. Individuals with residual disabilities should be assessed by an OT driving test. Those with homonymous hemianopia should not drive.
TIA	An individual should not drive for 1 month after a single TIA. For those with recurrent TIAs, they may resume driving after being symptom-free for 3 months.
Collapse	Individuals should not drive for 2 months following a collapse (syncope or cardiac arrest)
Angina	Individuals with angina at rest or on mild exertion should not drive. They may resume driving once they are free of angina on mild exertion provided there are no other conditions (e.g. arrhythmias) that would exclude them from driving.
Myocardial infarction	An individual should not drive for 2 weeks following an uncomplicated MI. They can resume driving following a specialist assessment.
Epilepsy/ Seizure	Individual should not drive following single seizure or since their last seizure for those with epilepsy for one year. Generalised and partial seizures are not treated in the same manner. Period may be shortened if there was a particular factor causing seizure and recurrence is unlikely. Individuals with sleep epilepsy may drive after three years of establishing this pattern.
Visual Impairment	Visual acuity needs to be 6/12 in both eyes together, with or without correcting lenses. For those with marked impairment in one eye or visual field defects specialist assessment is required.
Vertigo/ Meniere's	Where the attacks of vertigo or giddiness are sufficiently disabling to impair an individual's ability to drive, they should not drive until the condition is treated.

Diabetes	<p>Diabetes is generally not an obstacle for driving unless the person is having hypoglycaemic attacks. Where these are recurrent and the person has poor hypoglycaemic awareness, they should not drive until this is managed.</p> <p>An individual who has a hypoglycaemic attack while driving should not drive for one month until remedial action is taken.</p>
Advancing age	<p>Advancing age is not an obstacle to driving per se. However if there are concerns about an individual's driving safety due to a combination of medical, cognitive, medication or biomechanical issues, formal OT driving assessment should be sought.</p>
Severe Mental Disorder	<p>When an individual has a severe enduring mental disorder affecting their ability to drive safely due to impairments in cognition, behaviour, impulsivity or mood, they should not drive until treated for a period of at least 6 months.</p> <p>The NZTA should be notified about all individuals subject to an Inpatient CTO under Section 19 of the LTA. These individuals are still permitted to drive unless they are assessed as unsafe to do so.</p>

This letter template is designed to be adapted to a variety of uses:

- Letter to client / GP approving driving but suggesting review in six months
- Letter to OT Driving Assessment Agency requesting OT driving assessment
- Letter to NZTA making recommendation about restriction on, or withdrawal of clients driving licence

<div style="border: 1px solid black; width: 40%; margin: 0 auto; padding: 5px; background-color: #f0f0f0;">Service Logo</div>		
Date	CC	Client
	CC	GP
Dear		
<div style="border: 1px solid black; width: 60%; margin: 0 auto; padding: 5px; background-color: #f0f0f0;">Patient Details</div>		
<h3 style="margin: 0;">Driving Assessment Letter</h3> <hr style="border: 1px solid black;"/>		
Problem List:	1 Driving Safety issues 2 Cognitive Impairment 3 (Recent MVAs) 4 Relevant Medical issues	
Delete paragraphs (and numbering) as required:		
<ol style="list-style-type: none"> 1. Mr/Mrs has voluntarily agreed to stop driving following medical advice. It is not likely that driving will be possible safely in the future, and it is my recommendation that his/her licence is revoked at this time by the NZTA. 2. Mr/Mrs has voluntarily agreed to restrict his/her driving following medical advice. I have suggested that he/she does not drive outside the hours of 10am to 2pm, and should not drive further than 5km from his/her home. I would recommend that his/her licence is amended accordingly at this time by the NZTA. 3. Mr/Mrs has been advised by me that he/she should no longer be driving due to the medical conditions described. Unfortunately, he/she has not agreed to stop driving, and I am therefore notifying the NZTA under Section 18 of the Land Transport Act, with the recommendation that his/her driving licence be revoked. 4. Mr/Mrs no longer has a driving licence but is continuing to drive a motor vehicle on roads. I would be grateful if you would communicate with him/her regarding this and with a reminder that his/her licence is no longer valid. (I believe that there is some significant risks associated with him/her driving, and I would recommend that the NZTA ask the local police to visit Mr/Mrs about driving.) 		
Background Information: (Relevant supporting clinical information.....)		

Driver's Questionnaire

This questionnaire addresses historical features with Level A, Level B or Level C evidence of relevance to driving competency, as well as selected items from the Manchester Driver Behaviour Questionnaire. It is only intended to be used in the qualitative determination of driving risk in elderly patients and patients with dementia, and has not been validated for use in the quantitative determination of driving risk.

1.	How many times have you been stopped or ticketed for a traffic violation in the last three years? (0, 1, 2, 3, 4 or more)	
2.	How many accidents have you been in, or caused, within the last three years? (0, 1, 2, 3, 4 or more)	
3.	In how many accidents were you at fault in the last three years? (0, 1, 2, 3, 4 or more)	

Use this scale to answer the following questions below:

1 = strongly disagree, 2 = disagree, 3 = no opinion, 4 = agree, 5 = strongly agree

1.	I have concerns about my ability to drive safely	
2.	Others have concerns about my ability to drive safely	
3.	I have limited the amount of driving that I do	
4.	I avoid driving at night	
5.	I avoid driving in the rain	
6.	I avoid driving in busy traffic	
7.	I will drive faster than the speed limit if I think I won't be caught	
8.	I will run a red light if I think that I won't be caught	
9.	I will drive after drinking more alcohol than I should	
10.	When I get angry with other drivers, I will honk my horn, gesture, or drive up too closely to them	

How many kilometres a week do you drive?

Km

Family or Caregiver Questionnaire

1.	How many times has the driver been stopped or ticketed for a traffic violation in the last three years? (0, 1, 2, 3, 4 or more)	
2.	How many accidents has the driver been in, or caused, within the last three years? (0, 1, 2, 3, 4 or more)	
3.	In how many accidents was the driver at fault in the last three years? (0, 1, 2, 3, 4 or more)	

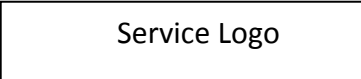
Use this scale to answer the following questions below:

1 = strongly disagree, 2 = disagree, 3 = no opinion, 4 = agree, 5 = strongly agree

1.	I have concerns about the person’s ability to drive safely	
2.	Others have concerns about his/her ability to drive safely	
3.	The person has limited the amount of driving that he/she does	
4.	He/she avoids driving at night	
5.	He/she avoids driving in the rain	
6.	He/she avoids driving in the busy traffic	
7.	The person will drive faster than the speed limit if he/she thinks they won’t get caught	
8.	The person will run a red light if the patient thinks that he/she won’t be caught	
9.	The person will drive after drinking more alcohol than he/she should	
10	I do not feel safe when being driven by the person	
11.	I would be reluctant to let the person drive my children (or friends)	

How many kilometres a week does the client drive?	<i>Km</i>
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**REFERRAL FOR
OCCUPATIONAL THERAPY DRIVING ASSESSMENT**



Organisation of Therapy and Rehabilitation Services (OTRS)
 C/- DRC, 14 Erson Avenue, Royal Oak
 PO Box 4138, Hamilton
 Phone – 0800 687 748
 Email – info@otrs.co.nz
 Web – www.otrs.co.nz
 Fax – (07) 838 0152

Driver Assessment Service
 2 Canon Place, Pakuranga
 PO Box 51056, Pakuranga, Manukau 2140
 Phone – (09) 236 9033 or 0800 427 327
 Email – das.ot@ihug.co.nz
 Web – www.driverassessment.co.nz
 Fax – (09) 236 9135

Anne Molloy Occupational Therapy Consultancy
 5 Moreland Road, Mt Albert, Auckland
 Phone – (09) 8460046
 Email – amolloy@driveable.co.nz
 Web – www.driveable.co.nz
 Fax – (09) 846 0048

Monica Grimshaw: Able-2-drive: North Shore and Rodney
 7 Greenview Lane, Red Beach, Auckland
 Phone (09) 4211511, Fax (09) 5211529
 Web: www.able-2-drive.co.nz

Patient Details

Name: _____ DOB: _____ NHI: _____

Address: _____

Phone: _____ Mobile: _____

Preferred Contact Person: _____ Relationship: _____

Phone: _____

Name of GP: _____ Phone: _____

Address: _____

Referrer Details

Name: _____ Position: _____

Mailing Address: _____

Phone: _____ Email: _____

Name of Specialist:	
Phone:	Email:
<u>Reasons for referral / driving concerns</u>	
<input type="checkbox"/> Please contact the referrer for further information.	

<u>Clinical Details</u>	
Diagnosis:	Date of Diagnosis:
Current Psychotropic Medication:	
Relevant Medical & Neurological condition:	
Cognitive Assessment:	
(Addenbrook's) ACE-III	/100
RUDAS / MOCA / MMSE	/30
Eyesight: Right:	Left:

<u>Notification to NZTA</u>	
Phone: 0800 822 422	Fax: (06) 953 6261
Email: mark.pugin@nzta.govt.nz	
<p>1. The patient has been informed to cease driving until he/she has an occupational therapy driving assessment.</p> <p style="text-align: center;"><input type="checkbox"/> YES <input type="checkbox"/> NO</p>	
<p>2. A copy of this referral form has been forwarded to NZTA.</p> <p style="text-align: center;"><input type="checkbox"/> YES <input type="checkbox"/> NO</p>	

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