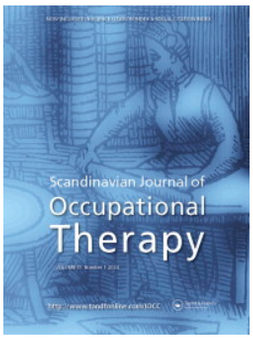

Scandinavian Journal of Occupational Therapy

ISSN: 1103-8128 (Print) 1651-2014 (Online) Journal homepage: www.tandfonline.com/journals/iocc20

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To cite this article: Hayley M. Scott, Anne M. Baker & Carolyn A. Unsworth (2024) Evaluation of a driving clinical decision pathway for generalist occupational therapists: Pilot test of practice change, Scandinavian Journal of Occupational Therapy, 31:1, 2423712, DOI: 10.1080/11038128.2024.2423712

To link to this article: https://doi.org/10.1080/11038128.2024.2423712

Published online: 12 Nov 2024.

SCANDINAVIAN JOURNAL OF OCCUPATIONAL THERAPY
2024, VOL. 31, NO. 1, 2423712
https://doi.org/10.1080/11038128.2024.2423712

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RESEARCH ARTICLE

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Evaluation of a driving clinical decision pathway for generalist occupational therapists: Pilot test of practice change

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ABSTRACT

Background: Few evidence-based resources exist to support generalist occupational therapists address driving in practice. This pilot study aimed to evaluate whether a driving clinical decision pathway can assist generalist occupational therapists to address driving with clients.

Methods: Using a before (Timepoint-1) and after (Timepoint-2) design, data were collected at a multi-site outpatient community rehabilitation service. Medical record audits documenting how driving was addressed in practice and descriptive surveys of therapist's perceptions of pathway use were collected at Timepoints 1 and 2. A driving clinical decision pathway was implemented over 6 months. Descriptive statistics and content analysis were used to analyse and compare data over time.

Results: Timepoint-1 data from 102 client medical records, and 13 clinician surveys were compared against Timepoint-2 data from 144 records and 8 surveys. Following implementation of the pathway, the number of assessments used by generalist occupational therapists increased three-fold, to inform driving process recommendations which increased two-fold. Clinicians' self-reported knowledge, skills and confidence also increased two-fold.

Conclusion: A comprehensive driving clinical decision pathway provided clinicians with increased structure and support to guide practice change and promote role fulfilment in addressing return to driving with adults following a change in health status.

ARTICLE HISTORY
Received 13 August 2024
Revised 22 October 2024
Accepted 26 October 2024

KEYWORDS
Occupational therapy; automobile driving; rehabilitation; clinical pathway; adults

Introduction

Return to driving is a common occupational goal for adults undergoing outpatient rehabilitation following a change in health status [1]. Although there are established evidence-based clinical guidelines for individuals post-stroke seeking to return to driving [2], there is a lack of international literature supporting the development of similar evidence-based guidelines for other health conditions. This lack of comprehensive guidance has led to gaps and inconsistencies in clinical practice, impacting key stakeholders within the area of driving [3–5]

Occupational therapists play a crucial role in addressing driving concerns, with advanced scope of practice roles which have competency standards and guidelines to support specialised occupational therapy driver assessor (OTDA) practice [6, 7]. However, there is a notable gap in similar support for generalist occupational therapists who also need guidance to fulfil their role in clinical practice [8]. It is not currently feasible to develop clinical guidelines given the limited literature in driving and generalist occupational therapy practice, therefore alternative methods are required to address this gap in the meantime. Clinical decision pathways (CDPs) are defined as structured documents used by health professionals which include essential steps to care for a specific health problem [9]. Although CDPs may be implemented in a variety of ways, they are usually designed to provide recommendations, processes and timeframes to reduce variation in care, and improve the

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quality and efficiencies of care and overall patient outcomes [9]. While some pathways are available within the area of driving and generalist occupational therapy practice in the USA [10, 11] and Ireland [12], they lack alignment with Australian medical and licencing guidelines, where this study was conducted, and also specific details regarding the appropriate type and timing of referrals and interventions. Therefore a comprehensive driving CDP was developed to address the diverse range and complexity of driving-related issues to support generalist occupational therapy practice in Australia [13]

Evaluating the implementation of clinical pathways presents challenges in demonstrating sustained change and associated effects [14]. Various methodologies such as implementation science, intervention mapping and knowledge translation have been used in an attempt to tackle these challenges [15–17]. While these methods differ, their common goal is to offer a structured approach for developing and implementing practice change interventions, with particular emphasis on evaluating behaviour change [15]. They often adopt a collaborative approach, recognising the need for a structured method to navigate the complexities within pathway implementation among multidisciplinary teams, however the newly developed CDP is specifically targeted to support a singular profession, the generalist occupational therapy role, with addressing driving. Despite their applicability, these methodologies typically focus on evaluating interventions which is not the focus for this proposed CDP. For these reasons, a specific methodology was not utilised in this study, instead this paper describes evidence-based strategies supporting the implementation of the CDP in generalist occupational therapy practice.

The development of the driving CDP has been described elsewhere [13]. Therefore, the focus of this paper was to evaluate clinical practice changes of generalist occupational therapists when addressing driving for adults with health-related problems following implementation of the driving CDP. Scott et al. [8] described current Australian generalist occupational therapy practice when addressing driving in a community rehabilitation setting. The findings highlighted inconsistencies in practice due to reduced knowledge, skills and confidence among clinicians which urgently called for resources to support practice. The driving CDP was subsequently developed, validated and implemented into generalist occupational therapy practice. To evaluate the driving CDP's effectiveness, the research questions from this previous study were reviewed to determine if they could be used in a pilot study to identify change in practice, and it was found they could. Therefore, the aims of this pilot study were to evaluate whether there is a change from before to after the implementation of the CDP in relation to three research questions (as used in the before study): (i) Are generalist occupational therapists addressing driving as part of routine clinical practice? (ii) What assessments are generalist occupational therapists using to aid their clinical reasoning when determining return to driving process recommendations? (iii) Do generalist occupational therapists report adequate levels of knowledge, skills and confidence in the process of return to driving?

Method

Study design and setting

A before and after design was adopted in this evaluative mixed methods research. Data from Scott et al. (2021)'s study (before CDP implementation) was compared with data from this study in 2023 (after CDP implementation) to evaluate changes in generalist occupational therapy practice. For the purposes of this paper, data from 2021 are described as Timepoint-1 and data from 2023 are described as Timepoint-2. The same methods were used across both studies to compare changes in practice, which included reviewing data from file audits at Timepoint-1 to Timepoint-2 and clinician responses from a descriptive survey at Timepoint-1 to Timepoint-2. Quantitative data from the medical file audits included retrospective audits to review past practice and clinician self-report audit templates where clinicians provided increased detail of which assessments were used and the types of driving process recommendations provided to address driving in current practice, which maximised information gathering in the case of reduced documentation practices. The audits were supported by a descriptive survey which explored changes in clinicians' level of knowledge, skill and confidence in addressing driving and their perceptions of using the driving CDP in practice.

This data for Timepoint-1 and Timepoint-2 were collected at the same outpatient community rehabilitation service as Timepoint-1 within a large metropolitan hospital in Victoria, Australia. The study was approved by Western Health (QA2022.77) and Federation University Human Research Ethics Committees (2023/002) before commencing data collection. As the data collection from Timepoint-1 have been previously described [8] and are almost identical to the data collection for Timepoint-2, only Timepoint-2 data collection are described in this paper.

Participants

Part 1: file audits

Files from occupational therapy outpatient referrals made to community rehabilitation between May – October 2023 were retrospectively audited, using convenience sampling. Client files were included if they had a change in health status, were previously driving and had a desire to return to driving. Clients who were not previously driving (such as never drove before or ceased driving for a prolonged period of time) or did not wish to return to driving were excluded from the audit. Clinicians completed the self-report audits for recently discharged clients who they had worked with to address their return to driving goal.

Part 2: survey

All generalist occupational therapists across all grade levels working in the community rehabilitation service were eligible to participate in the study, using volunteer sampling.

Instruments

Driving CDP

A valid and clinically useful driving CDP was developed by Scott et al. [13] to support generalist occupational therapists to address driving in response to a lack of context-specific resources [8]. The CDP consists of five key sections: introduction to driving as an occupation and the roles of key stakeholders, legal and medical standards, evidence-based practice summaries, assessment tools and clinical decision-making tools for interpretation of assessment results, communication and documentation templates and a range of other resources to support practice. The effectiveness of the CDP to support their practice was evaluated through file audits and a survey. The CDP can be freely accessed and downloaded by clinicians at https://otdrivingclinicaldecisionpathway.wordpress.com/

Part 1: file audits

The retrospective and clinician self-report audit templates used at Timepoint-2 consisted of the same 10 questions which collected information on whether driving was consistently addressed in practice at Timepoint-1. Where it was identified that a file did not contain enough detail to determine if the client was previously driving and/or wished to return to driving, this was clarified with the treating clinician. If the client met the inclusion criteria, an adapted version of the retrospective audit template was completed.

Part 2: survey

At Timepoint-2 the same survey was used that has been previously described at Timepoint-1 [8]. The survey explored clinicians' level of knowledge, skill and confidence in addressing driving before and after using the driving CDP. Five additional questions were added which gathered clinician responses about their experiences of implementation and use of the driving CDP in practice. The final survey consisted of 20 questions which included multiple choice (quantitative) and open-ended questions (qualitative).

Procedure

Implementation of the driving CDP

Implementation of the driving CDP consisted of various components: clinician education and involvement, reminder and check in systems, support from local leaders (champions) and gathering feedback for the pilot test [9]. The driving CDP was introduced to generalist occupational therapists working in community rehabilitation in March 2023. All 12 clinicians in this practice area were invited to participate in a 60-minute face-to-face education session which introduced the CDP and the research study. For those clinicians unable to attend on the day or who rotated into the area at a later date, an additional education session was facilitated. Over the 6-month pilot period, three online follow up question and answer sessions were conducted in April, July and September which ran for 30-60 min. During these sessions, local leaders (champions) assisted with following up actions such as developing local folders on the system for easy access to assessment tools. The pilot concluded in November 2023.

Part 1: file audits

Electronic Medical Records (EMR) of clients were retrospectively audited between November – December 2023 using REDCap database [18]. Following the implementation period of the CDP, all clinicians in community rehabilitation were emailed a link to anonymously complete the self-reporting template in the REDCap database to record details of how they addressed driving with clients they recently discharged who had return to driving goals.

Part 2: survey

An email invitation via the REDCap database was sent out to all clinicians working in community rehabilitation in November 2023 to volunteer to participate in the survey.

Data analysis

Part 1: file audits

Retrospective EMR audit data and clinician self-report audits were exported from the REDCap database into the Statistical Package for the Social Sciences (SPSS) program [19]. Simple summary statistics, reported as averages and percentages were used to describe the demographic data. The next step was to develop a strategy to review the differences between data recorded at Timepoint-1 and Timepoint-2. A Shaprio-Wilk test was used to test for normality. As not all variables were normally distributed, a Mann-Whitney U test was used to examine differences between Timepoint-1 and Timepoint-2 for continuous variables (age) and Chi-Square tests were used for categorical variables (gender, diagnoses and driving-related characteristics). As per assumption guidelines, calculations were not performed with variables with a cell count of <5. Additionally, as the number of client files in each of these Chi-Square analyses varied once it was identified that a client did not wish to return to driving, further information from that file was not present to extract or analyse. The degree of change in the percentage values between Timpoint-1 and Timepoint-2 were used to evaluate practice change and to make judgements about clinical significance. The authors set clinical significance at a 5% increase in the difference between percentages to be clinically meaningful however, the reader is invited to form their own clinical judgement as per standard practice [20].

Part 2: survey

Data collected from the completed surveys were exported from the REDCap database into an Excel spreadsheet for analysis. Non-parametric statistics for statistical significance were not completed due to small sample size. Instead, percentages were calculated by totalling the overall number of clinician ratings over the maximum 5-point Likert scale for the total number of participants (i.e. 40), to determine differences in clinicians' level of knowledge, skill and confidence from Timepoint-1, prior to CDP implementation pilot period, to Timepoint-2. Individual differences in clinicians' self-reported levels of knowledge, skill and confidence could not be compared between Timepoint-1 and 2 due to staffing changes during this time, and a new set of eight clinicians completing the survey. A general qualitative approach was used to analyse the open-ended survey responses which supplemented the quantitative data [21]. Content analysis included preparing, organising and reporting the data using simple tabulations of coded categories [22]

Results

As noted above, results of data collected at Timpoint-1 have been previously published and are only reported in this paper as a point of comparison with Timepoint-2.

Summary of data analysed

At Timepoint-2, 332 files a total of 121 files were retrospectively audited, and 37 of these files required clarification with treating clinicians to meet the inclusion criteria. In addition, 23 client participants from clinician self-report audits provided a total of 144 files to audit.

Of the client files, $n = 81$ (56.25%) were male, mean age was 60 years (SD 17.08). The majority of clients, $n = 74$ (51.38%) had experienced a stroke. There were no differences in relation to age, gender or diagnostic groups between Timepoint-1 and Timepoint-2. A Mann-Whitney U test revealed no significant difference inage between Timepoint-1 (Md = 64, $n = 102$) and Timepoint-2 (Md = 63, $n = 144$), $U = 7017$, z= −.595, p=.552, r= −.03. A chi-square test of independence (with Yates' Continuity Correction) indicated no significant association between gender and timepoints, x^2 (1, $n = 246$) = 2.79, p=.094, phi= −.115). A chi-square test of independence (with Yates' Continuity Correction) indicated no significant association between a diagnosis of stroke (x^2 (1, $n = 246$) = .172, p=.687, phi= .035), acquired brain injury (x^2 (1, $n = 246$) = .023, p=.879, phi= .027), other neurological condition x^2 (1, $n = 246$) = 2.86, p=.091, phi= −.118) or orthopaedic condition x^2 (1, $n = 246$) = .391, p=.532, phi= .054) and time points. While there was a significant difference in the number of participants with a spouse who drives ($p = 0.004$) between timepoints, this appears random and was considered unlikely to bias the data. Participant characteristics are outlined in Table 1. A total of eight clinicians completed the survey (66.66% response rate). However, clinician demographics were similar at Timepoint-1 and Timepoint-2 with 100% female once again, and

the majority of clinicians had less than 5 years of clinical experience $n = 5/9$, (62.50%) compared to $n = 9/13$, (69.23%) in Timepoint-1.

Addressing driving in practice

The audits reviewed how driving was being addressed in practice through documentation of a client's driving status, reasons for not driving and the reasons for wishing to resume driving. The audits also reviewed the number and types of driving process recommendations made by generalist occupational therapists and the assessments used to inform these decisions. Clients may have had more than one reason documented in the file audits detailing why they were unable to drive and why they wished to resume driving. While there were no significant differences found within each of these reasons, there was an overall difference between at least one reason being documented as to why a client was not driving and timepoint (x^2 (1, $n = 228$) = 22.12, p=.001, phi= −.348). Similarly, an overall difference between at least one reason being documented for reasons for wanting to resume driving and timepoint (x^2 (1, $n = 230$) = 19.40, p=.001, phi= −.308). Table 2 highlights a variety of driving process recommendations made with several additional types being provided at Timepoint-2 such as licencing authority and/or police being informed of unfit drivers $n = 3$, (2.08%), eyesight clearance required $n = 15$, (10.41%) and unsafe to drive permanently $n = 3$, (2.08%). This last recommendation was made in consultation with a medical practitioner regarding clients not meeting the medical standards to hold a licence due to progressive medical conditions. There were also numerous self-management strategies recommended at Timepoint-2 to support clients to maintain their driving ability $n = 15$, (10.41%) such as alternative ways to load mobility devices into the car and pacing strategies to manage pain and fatigue.

Table 1. Mean (SD) or number (%) of participant characteristics from the retrospective and prospective audits.

Characteristics	All Audits (Timepoint-1) *n = 102*	All Audits (Timepoint-2) *n = 144*	*p* value
Age (year), mean (SD)	61.65 (15.31)	60.27 (17.08)	0.552
Male, *n* (%)	69 (67.64)	81 (56.25)	0.094
Diagnoses, *n* (%)			
Stroke	56 (54.90)	74 (51.38)	0.679
Acquired Brain Injury	7 (6.86)	8 (5.55)	0.879
Other Neurological	18 (17.64)	40 (27.77)	0.091
Orthopaedic	11 (10.78)	11 (7.63)	0.532
Cardiac	4 (3.92)	3 (2.08)	^
Pain	4 (3.92)	8 (5.55)	^
Psychological	2 (1.96)	0 (0.00)	^
Spouse who drives, *n* (%)	58 (56.86)	101 (70.13)	**0.004**
Currently driving, *n* (%)	19 (18.62)	27 (18.75)	1.000
Reasons for not driving, *n* (%)			
Awaiting medical clearance	18 (17.64)	22 (15.27)	0.923
Psychological problems	2 (1.96)	1 (0.69)	^
Cognitive problems	16 (15.68)	38 (26.38)	0.030
Vision problems	9 (8.82)	17 (11.80)	0.471
Physical problems	39 (38.23)	43 (29.86)	0.357
Fatigue	4 (3.92)	19 (13.19)	^
Reasons for wanting to resume driving, *n* (%)			
Independent community access	21 (20.58)	46 (31.94)	0.154
Productivity / Work / Appointments	14 (13.72)	40 (27.77)	0.033
Leisure / Shops	36 (35.29)	49 (34.02)	0.536
Carer responsibilities	10 (9.80)	14 (9.72)	0.967

Values are presented as mean (standard deviation) or number of participants (%).
^ Inadequate sample size for chi-square (p value) calculation.

Assessments used within the return to driving process

The audits revealed that a broad range of standardised and unstandardised assessments were used to comprehensively support clinical decision making as can be seen in Table 2. While there were many more standardised assessments used from Timepoint-1 (3.92%) to Timepoint-2 (51.38%), functional observations remained the most frequently used unstandardised assessment, and was even more common at Timepoint-2 (64.58%) compared to Timepoint-1 (18.62%).

Level of knowledge, skill and confidence with return to driving processes

Survey findings revealed that clinicians' level of knowledge, skills and confidence to address driving with their clients increased two-fold following the implementation of the driving CDP (see Table 3). One hundred percent of clinicians reported that the driving CDP overall provided them with an improved standardisation and structure for their practice. A variety of less frequently repeated reasons supporting clinicians' knowledge, skills and confidence are also provided in Table 3. Qualitative responses from the survey and quantitative data from the file audits detailing how clinicians believed the CDP impacted their practice are provided in Table 4.

Table 2. Number (%) of assessment tools and recommendations made by clinicians from the files audited.

Assessments and Recommendations	Files Audited (Timepoint-1) ($n = 102$)	Files Audited (Timepoint-2) ($n = 144$)	Differences between percentages	Clinically significant difference
Standardised assessments, n (%)				
MMSE	0 (0.00)	8 (5.55)	5.55	√
MOCA	1 (0.98)	1 (0.69)	−0.29	
Bells test/Star Cancellation test	0 (0.00)	5 (3.47)	3.47	
Clock Drawing test	1 (0.98)	13 (9.02)	8.04	√
Neuropsychology Assessments	2 (1.96)	1 (0.69)	−1.27	
Multiple Errands Test	0 (0.00)	6 (4.16)	4.16	
Trails Part A & B	0 (0.00)	11 (7.63)	7.63	√
SENSe Assessments	0 (0.00)	4 (2.77)	2.77	
MMT	0 (0.00)	6 (4.16)	4.16	
TULIA	0 (0.00)	1 (0.69)	0.69	
Grip test	0 (0.00)	1 (0.69)	0.69	
RUDAS	0 (0.00)	1 (0.69)	0.69	
Fatigue rating scale	0 (0.00)	4 (2.77)	2.77	
NUCOG/BADS	0 (0.00)	3 (2.08)	2.08	
Nine-hole peg test	0 (0.00)	2 (1.38)	1.38	
Pain rating scale	0 (0.00)	7 (4.86)	4.86	
Total number of standardised assessments	**4 (3.92)**	**74 (51.38)**	**47.46**	√
Unstandardised assessments, n (%)				
Visual fields, acuity	0 (0.00)	30 (20.83)	20.83	√
Functional range of motion	7 (6.86)	73 (50.69)	43.83	√
Hazard perception testing	0 (0.00)	2 (1.38)	1.38	
Scooter assessment	2 (1.96)	1 (0.69)	−1.27	
Functional observations	19 (18.62)	74 (51.38)	32.76	√
Full OT initial assessment	30 (29.41)	93 (64.58)	35.17	√
Total number of unstandardised assessments	**58 (56.86)**	**273 (189.58)**	**132.72**	√
Total number of overall assessments	**62 (60.78)**	**347 (240.97)**	**180.19**	√
Recommendations, *n* (%)				
GP/Neurologist follow up	50 (49.01)	88 (61.11)	12.10	√
Optometrist/Eyesight clearance	0 (0.00)	15 (10.41)	10.41	√
OT driving assessment	15 (14.70)	30 (20.83)	6.13	√
Not to drive, await further rehab	10 (9.80)	28 (19.44)	9.64	√
Not to drive, permanently	0 (0.00)	3 (2.08)	2.08	
Suitable to drive	1 (0.98)	0 (0.00)	−0.98	
VicRoads/Police informed	0 (0.00)	3 (2.08)	2.08	
Self-management strategies	0 (0.00)	15 (10.41)	10.41	√
Handover provided	0 (0.00)	20 (13.88)	13.88	√
Total number of recommendations	**76 (74.50)**	**202 (140.27)**	**65.77**	√

Values are presented as number of assessments and recommendations (%).
Mini Mental State Examination (MMSE) (23), Montreal Cognitive Assessment (MoCA) (24), Bells Test (25), Star Cancellation Test (26), Clock Drawing test (27), Multiple Errands Test (MET) (28), Trails A & B (29), Study of the Effectiveness of Neurorehabilitation on Sensation (SENSe) (30), Manual Muscle Testing (MMT) (31), TULIA (32), Grip Test (33), Rowland Universal Dementia Assessment Scale (RUDAS) (34), Fatigue Rating Scale (35), Neuropsychiatry Unit Cognitive Screening Tool (NUCOG) (36), Behavioural Assessment of Dysexecutive Syndrome (BADS) (37), Nine-Hole Peg Test (38), Pain Rating Scale (39).
*Note: Neuropsychology assessment battery consisted of Weschler-Adult Intelligence Test (WAIS-IV), Rey Complex Figure, Hopkins Verbal Learning test (HVLT), Rey Auditory Verbal Learning test (RAVLT), Weschler Memory Scale (WMS-III), Verbal Fluency, Boston Naming test, Trail Making test, Zoo map from Behavioural Assessment of the Dysexecutive Syndrome (BADS) which were all conducted by a Neuropsychologist.

Discussion

This pilot study provides preliminary evidence that a comprehensive and valid driving CDP is associated with generalist occupational therapists addressing driving more consistently in practice. This was demonstrated through an increased use of both standardised and unstandardised assessments to inform driving process recommendations, and the number and type of recommendations provided by generalist occupational therapists to address driving goals also increased from Timepoint-1 to Timepoint-2. Finally, generalist occupational therapists self-reported improvements in their knowledge, skills and confidence to address driving following use of the driving CDP. To summarise, in response to the three questions posed in this study, it was found that following the implementation of the driving CDP, generalist occupational therapists: were more consistent and thorough in addressing driving as part of routine clinical practice; used more assessments, and more standardised assessments to aid their clinical reasoning; and reported improved levels of knowledge, skills and confidence in managing the process of return to driving with their clients.

Inconsistencies among generalist occupational therapists addressing driving in practice have historically occurred due to variety of reasons. First, clinicians may question their role in addressing driving given

Table 3. Summary of clinician levels of knowledge, skills and confidence responses using 5-point Likert scale from the survey.

Domain	Clinician ratings before CDP implementation (*n* = 8)	Clinician ratings after CDP implementation (*n* = 8)	Differences between percentages	What best equips you?	What are you still lacking?
Knowledge	15 (37.50)	30 (75.00)	37.50	Driving CDP and pathway (*n* = 5, 62.50%) Previous experience (*n* = 1, 12.50%) Supervisor support (*n* = 1, 12.50%) Clear assessments (*n* = 2, 25.00%) Knowledge of driving requirements (*n* = 1, 12.50%)	Knowing exact cognitive domains (*n* = 1, 12.50%)
Skills	14 (35.00)	29 (72.50)	37.50	Driving CDP and pathway (*n* = 5, 62.50%) Peer/supervisor support (*n* = 2, 25.00%) Assessments and task analysis (*n* = 3, 37.50%) Knowledge of driving processes (*n* = 2, 25.00%)	None reported
Confidence	14 (35.00)	29 (72.50)	37.50	Driving CDP and pathway use (*n* = 4, 50.00%) Previous experience/exposure (*n* = 3, 37.50%) Supervisor support (*n* = 1, 12.50%) Frequent use of assessments (*n* = 2, 25.00%)	Further experience (*n* = 1, 12.50%) Further understanding of required cognitive and upper limb skills (*n* = 1, 12.50%)

Values are presented as total clinician rating level (%).

advanced scope of practice roles in Australia [8], and similarly internationally [40], as some clinicians believe that this should only be a specialist role. Second, reduced knowledge of return to driving processes may have led clinicians to avoid these discussions and refer clients with driving concerns onto other health professionals such as medical practitioners. Third, clinicians may lack knowledge of driving-related assessment tools and lack confidence in how to interpret these findings to understand the impact on driving performance, to ultimately inform their driving process recommendations. Research has shown that resources are needed to support the generalist occupational therapy role in addressing driving and public safety [3, 8]. CDPs have been shown as a possible method to address this gap [12, 41], however a CDP that encompasses the broad nature and complexity of driving in Australia was needed. The findings from this study support the implementation of the CDP to close this practice gap in Australia. While no specific framework was used to implement the CDP due to time and other practical restraints, the application of an implementation science approach may be useful to explore in the future.

Occupational therapists are highly skilled in task analysis which is often used as a preferred method of conducting an unstandardised assessment to evaluate a client's occupational performance limitations and strengths [40]. Findings from this study support that clinicians use this approach, using a combination of both standardised and non-standardised assessments which provides a more holistic approach to understanding a client's needs [42]. At Timepoint-1, clinicians used a very small number of standardised assessments, but this was shown to dramatically increase following the implementation of the driving CDP. This shift may be attributed to the CDPs inclusion of assessments commonly used in the area of driving. Additionally, the CDP included various tables to assist clinicians interpret the impact of these assessments on driving ability, which may have informed their clinical reasoning about driving process recommendations. The number and type of recommendations increased from Timepoint-1 to Timepoint-2, in alignment with the scope of practice for generalist occupational therapists. However, the impact of these increases on client driving outcomes remains unclear. It is assumed that increases in the type and number of recommendations made translate to more clients being appropriately identified as able to resume driving or be referred for follow up with an OTDA, ultimately resulting in a safer road environment for everyone. However, further research is necessary to evaluate how clinicians interpret assessment findings, and their clinical reasoning when making driving recommendations.

Gaps in self-reported knowledge, skills and confidence among clinicians when addressing driving have previously been identified [3, 8]. This study reaffirmed these observations at Timepoint-1, however post-implementation of the driving CDP, clinicians reported notable improvements in self-reported scores across all areas. Clinicians reported that the driving CDP and driving flowchart provided a clear structure, step by step processes guiding role fulfilment and described their key responsibilities in addressing driving, which may have contributed to improvements found. Additionally, following introduction of the driving CDP, clinicians appeared to be clear on their role and how and when to involve OTDAs to support their clients' driving goals, with no clinicians questioning their scope of practice. This finding is

Table 4. Driving clinical decision pathway sections and changes in practice.

Driving Clinical Decision Pathway Section	Files Audited (Timepoint-2) *(n = 144)*	Survey (Timepoint-2) *(n = 8)*
Introduction		
Introduces the importance of driving as an occupation. Includes key roles and responsibilities of stakeholders in the driving process.	25.20% increase in total number of reasons for why clients were not driving being documented. 36.00% increase in total number of reasons for why clients wished to return to driving being documented.	One clinician reported (I have) "patience and empathy as well as understanding importance of driving (despite) sometimes a difficult discussion" (P6). Another clinician reported "I know my role well" (P4). No clinicians reported scope of practice issues. One clinician reported increased "knowledge of driving processes and pathways" (P7).
Section 1. Legal & Medical Standards		
Outlines Austroads medical standards. Includes ethical considerations including duty of care, consent and indemnity of reporting unfit drivers.	2.08% increase in documented reports to the licencing authority due to concerns about driver and public road safety.	One clinician reported that the knowledge that best equips her is an "understanding (of) the requirements for driving (i.e. upper and lower limb, cognition and vision)" (P3). One clinician reported knowing "different types of medical conditions was helpful" (P5).
Section 2. Supporting Evidence Based Practice		
Brief literature review of screening and assessment practices used by key stakeholders when addressing driving across population groups.	Driving being addressed across a range of diagnostic groups (see Table 1).	One clinician reported that "it's easy to repeat (driving CDP) across different clients, occupational performance issues and conditions" (P4).
Section 3. Driving Flowchart		
Pictured flowchart of key steps of the generalist occupational therapy role to address driving. Includes assessment tools and ways to interpret assessment findings through various tables. Frequently asked question section of difficult questions to support practice.	47.46% increase in the total number of standardised assessments used and 180.19% increase in total number of overall assessments used. 12.10% increase in liaison with GP/ Neurologist recommended by clinicians as part of the return to driving process. 10.41% increase in recommendations for clients to seek eyesight clearance as part of return to driving process. 65.77% increase in the total number of recommendations provided by clinicians.	All clinicians reported using the driving CDP flowchart. One clinician reported "it is clear and easy to follow which provided guidance for OT's where there was none previously" (P7). One clinician reported that "prior (to the CDP) I was only using functional assessments" (P3). One clinician reported that "having clear assessments to use assisted with our clinical reasoning" (P4). Clinicians reported that use of task analysis tables helped "being able to identify the impact (of their medical condition) on driving based on occupational performance issues in other occupations" (P4) and maximised "occupation-based assessment" (P6). One clinician reported that the driving CDP used "as a reference to firstly assist with any questions I had" (P7). Clinicians reported that the driving CDP was a good fit as "lots of people have driving goals" (P2) therefore, "very relevant to patient's goals in CBR" (P8).
Section 4. Communication & Documentation		
Includes letter templates to provide clients, medical practitioners and other clinicians to handover within or between health services. Driving education handout also included.	13.88% increase in handovers being provided to GP or future generalist occupational therapists such as a NDIS OT using letter templates. 22.19% documented increase in clinicians providing return to driving education.	One clinician reported that the driving education handout supported "driving education being provided regularly as it provides a structure for junior therapists" (P1).
Section 5. Resources		
Includes a range of resources such as online courses, fact sheets, alternative mobility options, licencing authority contact details etc.	Not applicable.	One clinician reported that the "resources in the clinical pathway document are very helpful" (P7). Another clinician reported "it's a resource I refer back to whenever I need" (P8).

Note: GP = General Practitioner; NDIS = National Disability Insurance Scheme; CDP = Clinical Decision Pathway; CBR = Community Based Rehabilitation.

consistent with a systematic review by Deneckere et al. [43] which shows how CDPs enhance knowledge development. Addressing the sensitive nature of driving, clinicians often express a lack of confidence in handling challenging conversations [8]. However, utilisation of communication tools such as letter templates, as supplied in the CDP, appeared to support clinicians' confidence in initiating and navigating these conversations. Another factor which appeared to support clinician confidence was the use of peers and supervisor support, which is consistent with previous research in driving [44]. Additionally, clinicians reported that having previous experience and/or exposure with addressing driving for different population groups further supported increased confidence. Therefore, clinicians are likely to benefit from ongoing structured professional development and peer support within their practice to address driving.

There are several limitations to this study. The design does not provide certainty that the introduction of the driving CDP led to the changes in practice identified. First, despite this study using two clinical sites, clinicians often worked across both sites which did not allow for random allocation to not receive the CDP or waitlist for CDP use, therefore a before and after design was selected. Future research may consider evaluating

the CDP at multiple external health services using a randomised controlled trial design. Second, our method focused on evaluating changes made by clinicians in their practice, but not the impact on client driving outcomes. Although it is assumed that improvements in clinicians' abilities to make appropriate and timely driving process recommendations such as referring onto an OTDA for further assessment, would lead to improvements in clients being able to resume driving when safe to do so, further research to follow up client driving outcomes is needed. Third, while evidence-based implementation strategies were used to support the introduction of the driving CDP, our method did not include a specific change theory or framework to guide the implementation of the CDP such as the behaviour change wheel [45]. Approaching the study using an implementation science method may have led to further insights regarding behaviour change of clinicians and the sustainability of the CDP in practice. However, despite these limitations generalist occupational therapists reported increased knowledge, skills and confidence and demonstrated clinically important changes in the number and type of assessments and recommendations used to inform their clinical reasoning in relation to driving.

Conclusion

This pilot study offers preliminary evidence that a driving CDP provides generalist occupational therapists with a clear and structured process to comprehensively address driving in a community rehabilitation setting. This was demonstrated through practice changes in the type and amount of information used in relation to addressing driving from Timepoint-1 to Timepoint-2 through a file audit, as well as clinician survey responses where they self-reported improvements in knowledge, skills and confidence to address driving. Further research is required to review whether this pathway could be morphed into a clinical practice guideline in the future to inform broader practice settings.

Acknowledgements

The authors would like to thank the clinicians who volunteered to be involved in this study. This study was supported by an Australian Government Research Training Program as part of HMS PhD program.

Authors declaration

All authors meet the criteria for authorship. All authors were involved in the study design, analysis, interpretation of the data, drafting the work for intellectual content and, final approval for publication. All authors acknowledge that the content has been reviewed and take responsibility for the data, analysis, interpretation and the conduct of the research.

Disclosure statement

The authors report there are no competing interests to declare.

Funding

This research received no specific grant from any funding agency, commercial or not-for-profit sectors.

Data availability statement

Data supporting the results can be obtained by writing to the first author.

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