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Implementing the TCARE Protocol in a Memory Program

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Implementing the TCARE® Protocol to Screen Informal Caregivers at a Memory Program.

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Table of Contents

Abstract

Purpose: This project created a protocol for use of the Tailored Caregiver Assessment and Referral Evaluation (TCARE)® screening tool in a Memory Program for assessing for caregiver stress in informal caregivers.

Methods: The TCARE® screening tool was researched, and then a protocol for use by nurse practitioners was created. Approval from the academic and hospital organization was received and the TCARE ®protocol for use was implemented in a Memory Program. Two PDSA cycles were utilized to evaluate this intervention. Findings were analyzed for sustainability and contribution to the clinical setting.

Results: All caregivers (n = 5) who completed the TCARE® survey screened moderate to high risk for increased caregiver stress, qualifying for follow up with their local Office on Aging (OA) to offer further resources and support. Forty percent of caregivers (n= 5) referred to their local OA accepted services and resources. Caregivers and providers responded positively to our intervention during satisfaction interviews and surveys.

Conclusion: The ability to screen for caregiver stress serves as a helpful tool for nurse practitioners in a Memory Program. Its use appears ideal for clinics without social work support and presence, including primary care offices. Nurse practitioners managing cognitive impairment diagnoses may find the use of the TCARE® screening tool helpful for assessing caregiver stress and facilitating connections with community resources for those who qualify.

Keywords: Memory Program, informal caregivers, caregiver stress, TCARE, screening tool

Introduction

Older adults often rely on support from family members, friends, and significant others for assistance in a variety of everyday tasks, ranging from assisting with transportation or shopping to helping with bathing or toileting their loved one. Those who fulfill this role of caregiver, and do so without compensation for their actions, are referred to as informal caregivers (Fauth et al., 2016). Informal caregivers have been found to save the healthcare system billions annually by assisting and providing services to the patient without compensation (Bastawrous et al., 2013). The wellbeing of the patient is directly correlated to the health and wellbeing of the caregiver, with increased caregiver stress being associated with poorer patient and caregiver outcomes (Kawaharada et al., 2019; Mok et al., 2020).

This relationship is crucial for informal caregivers of patients diagnosed with Alzheimer's Disease or related dementia (ADRD), including cognitive impairment, as these patients often experience greater levels of behavioral disturbances and heavier reliance on their caregiver for help with ADLs/IADLs (Etters et al., 2008). The higher the reliance on the caregiver, the higher the risk for caregiver burnout and increased stress (Broxon & Feliciano, 2020). Evidence-based practice recommendations and knowledge supports the need for healthcare providers to recognize and be aware of the caregiver's needs to better provide for the patient, doing so will improve the caregiver patient-caregiver relationship and outcomes (Bailes et al., 2015; Butler et al., 2020). However, specific screening tools and easily performed standardized assessments are not readily available, leading experts to recognize the need for standardization of informal caregiver screening processes within the healthcare system (Riffin et al., 2020). Clinics and programs specializing in memory care often practice as an interprofessional team, with the nurse practitioners possessing a unique set of skills to address

caregiver stress while assisting patients and caregivers diagnosed with ADRD (Ament et al., 2015). Recognizing this unique skillset, nurse practitioners may be ideal for standardizing the screening and assessing of informal caregivers' needs and wellbeing.

The Tailored Caregiver Assessment and Referral, or TCARE®, is a screening tool that was created to assess for caregiver stress and provide recommended interventions by identifying risk factors experienced by informal caregivers based on the provided responses (Montgomery et al., 2008). When utilized by the Washington State Department of Health, the TCARE® protocol was found to reduce reported caregiver stress and depression by 80% at the six-month rescreening event (Montgomery et al., 2014). The TCARE® protocol was developed utilizing the caregiver identity theory to isolate specific aspects of the caregiver role that is causing increased distress or difficulty regarding the role of caregiver (Montgomery et al., 2008). The TCARE® protocol is described as acting as a triage system to identify individual areas of risk for each caregiver, identify the most helpful resources available based on these areas of weakness or needs evaluated (Montgomery et al., 2011). Kwak et al. (2011) stresses the success of the TCARE® protocol being attributed to its ability to isolate critical information which guides the decision-making process regarding caregiver support and recommended interventions. The TCARE® protocol provides a standardized and evidence-based screening system to evaluate caregiver stress (Pluta-Elher, 2021).

To address the problem of increased caregiver stress for those caring for people with ADRD, this project proposes the introduction of the TCARE® protocol into an outpatient memory program at an academic medical center. Within this setting, the nurse practitioners do not have a standardized approach to screening informal caregivers for increased stress. Instead, each nurse practitioner has their own approach during private interactions with informal

caregivers', where concerns are discussed regarding their own need and/ or concerns regarding the patient. To standardize this process, the nurse practitioner could invite the caregiver to use the TCARE® screen and then review the TCARE® screening findings and recommendations with the caregiver. Based on the TCARE® screener findings referrals or offers of other available interventions can be made with the purpose of improving overall patient and caregiver wellbeing. The results and recommendations provided by the TCARE® assessment can be recorded in the electronic health record (EHR) for later reference and review. Routine rescreening should be performed to address the changing caregiver-patient dynamic that occurs as dementia and cognitive impairment change and provide additional referrals or interventions as needed (Montgomery, 2014). This increased attention to caregiver wellbeing is expected to decrease reported caregiver stress after the TCARE® protocol is implemented.

Specific Aims

There are three specific aims of this project for addressing the wellbeing and support for informal caregivers being seen at the Memory Program.

1. Research, create, and test a protocol for use TCARE® survey to standardize the caregiver screening process by nurse practitioners.
2. Implement the use of the TCARE® protocol by nurse practitioners in a Memory Program.
3. Assess provider and caregiver satisfaction with TCARE® protocol

Methods

To create the protocol for use, literature search was performed utilizing online data bases such as CINHL, UVM Dana Library, and PUBMED. Following review of literature, connections were made with essential stakeholders (i.e., Vermont Health Department, Vermont Department

of Disabilities, and Aging and Independent Living (DAIL). Nurse practitioners, working at a Memory Program, were observed and discussions held with social workers in the practice setting. On further review and discussion with stakeholders, it was determined that a Memory Program would implement the initial TCARE® assessment for informal caregivers, with the goal of informal caregivers being able to complete the assessment without the patient present. Inclusion and exclusion criteria were developed with input from staff members and key stakeholders to reduce replication of work and provide the intervention to caregivers of patients who live in the community setting, are not involved with the site social work team, not currently working with their Office on Aging, and requests, or is willing, to participate.

The initial TCARE® assessment consists of an electronic 10-question survey, completed on a tablet device. If the tablet was unavailable or the caregiver was unable/unwilling to use tablet, then a paper version of the questionnaire was available as an alternative. A consent form was obtained to allow sharing of deidentified caregiver results from DAIL's TCARE® database for later analysis. Once completed, provided answers were evaluated within the TCARE® electronic algorithm and results displayed for the nurse practitioner to review with the caregiver. These results were be described as "low, moderate, or high risk" for caregiver burden. Informal caregivers with moderate or high risk for caregiver burden received an automatic referral to the caregiver's local Office on Aging for further caregiver assessment and offering of additional community resources. Informal caregivers who scored a low risk for caregiver burden on the initial assessment could be offered the screening at future visits due to the progressive nature of ADRD. The results of the initial TCARE® assessment automatically upload to the DAIL TCARE® database, meaning no manual data upload was necessary to communicate result findings baring inability to use iPads for survey administration. If paper surveys were

administered, the project investigator entered the responses into the electronic survey after the appointment.

Once necessary project approvals were received, education sessions were offered to all staff involved with the TCARE® protocol and assessment in the Memory Program (i.e., social workers, medical director, practice manager etc.). Education for the nurse practitioners was provided regarding the use of the TCARE® tool and protocol, including how to interpret the results to promote optimal use of the protocol to improve patient and caregiver wellbeing. Visual aids, such as a decision tree diagrams, will be provided to help understand the TCARE® initial assessment results and the steps needed for follow up (if applicable). Within the nurse practitioners' visit documentation, the initial TCARE® risk score was recorded and those qualifying for/desiring follow up recorded (i.e., referral to area Office on Aging, refusal of referral, desire for other resources, etc.).

This project was PDSA in nature, and the initial protocol was trialed for the use of TCARE® survey using five caregivers for the first cycle of using this survey in a Memory Program. Using feedback and observations from caregivers and providers during this initial cycle, the TCARE® protocol for use was adapted to better fit clinic flow. This cycle continued through the data collection period to improve intervention within the clinic. Opportunities for feedback from informal caregivers and staff members, including social workers, involved was offered throughout project. These suggestions were considered and utilized as able to improve the project's anticipated outcome.

For caregivers unable to complete the TCARE® survey in the office, a QR-code was created for the link to the TCARE® survey. This QR-code was integrated into a smart phrase in

the EHR (EPIC) for providers to use within the after-visit summary. Caregivers were able to access and complete the TCARE® initial screener survey at home if desired.

To address the effectiveness of initiating use of the TCARE® protocol, at completion of data collection period, scores were requested from DAIL's TCARE® database and analyzed, utilizing Microsoft Excel. Evaluation of total charts reviewed compared to number of qualifying caregivers based on protocol inclusion and exclusion criteria to provide insight into use of TCARE® protocol. Deidentified relevant data was recorded into Microsoft Excel (i.e., patient age, patient diagnosis, baseline MMSE, etc.).

Satisfaction surveys were given to caregivers regarding their experience with the TCARE® initial screening survey in the clinic. Additional measures outside of the chart review includes performing qualitative interviews with two social workers and two medical providers, and with TCARE® administrators at Age Well to determine 1) value of the TCARE® program in the Memory Program, 2) sustainability of the intervention, 3) clinical accuracy of caregiver stress/burden, and 4) barriers to implementation. The project coordinator conducted a systematic interview to collect qualitative data regarding the TCARE® screener. Questions included "Tell me what you know or think about TCARE® protocol?", "Do you see yourself using this screening tool moving forward?", and "What is the biggest challenge you perceive to the use of this at the Memory Program". Feedback surveys were offered to the nurse practitioners to determine their satisfaction with the implementation of the TCARE® screener in a Memory Program.

Completed survey results were recorded in Microsoft Excel, and then the data analyzed by measuring the value assigned to each answer using a Likert scale. These results were displayed visually for further evaluation. Additionally, satisfaction surveys, with area for written

feedback, were provided to the nurse practitioners at the clinic regarding their experience with TCARE. These were be recorded in Microsoft Excel and further analyzed using descriptive statistics.

According to the policy defining activities which constitute research at the University of Vermont/University of Vermont Health Network, this work met criteria for operational improvement activities not requiring full IRB review. Additional ethical considerations include concern for privacy of data and patient information and limiting which caregivers are eligible for the TCARE® screening tool within the Memory Program. To limit privacy, concern all data recorded was deidentified and their files secured with a password only the project coordinator has access too. Physical materials are placed in a secure shred bin at the Memory Program for safe disposal. Confidentiality agreements are obtained from each caregiver, alerting them to the privacy policy and agreeing to these processes. Demographic constraints mean that residents outside of Vermont are not eligible for the TCARE® survey, resulting in some caregivers not being screened. For these caregivers, the providers converse privately with caregivers to hear concerns and offer Memory Program support as northern New York Offices on Aging do not currently utilize the TCARE® protocol.

Results

During this project initiative, a total of 207 charts were reviewed, with 54 total caregivers identified as being edible for the TCARE® screener survey (see Table 1) using the developed inclusion and exclusion criteria. Chart review was performed utilizing the institutions electronic health record (EHR), Epic. Project implementation occurred from the last week of September 2022 to January 31st, 2023, with an average of 41 charts reviewed per month and 11 caregivers identified per month as eligible for the TCARE® survey (see Table 1; Figure 1).

Of patients with eligible caregivers for the project, the most common relationship was that of patient and wife, with 14 out of the 54 identified caregivers labeled as such. The average age of identified patients was 79, 2020 was the average year of memory impairment diagnosis, and Alzheimer's Disease was the most common diagnosis of the identified patients (see Table 2; Figure 3). Of the 54 patients with qualifying caregivers, 31 of the included patients reported living in Chittenden County, making Chittenden the most common county of residence for participants in this study (see Figure 2). The average baseline MMSE was 22, where the last recorded MMSE average was 21 (see Table 2; Figure 4). For some individuals included in this study, only a baseline MMSE score was recorded due to recent, or new, cognitive impairment diagnosis.

Phase I was performed by offering the paper version of the TCARE® screener to caregivers. This version of the survey was used due to logistical delays with the iPads intended for use in a Memory Program for providing caregivers with the preferred electronic version of the TCARE® screener. Five caregivers were offered the survey, with all five being referred for follow up to their local Office on Aging to discuss further caregiver resources. Of these five caregivers, only one has accepted further resources, creating a 20% follow up rate for discussion and evaluation of further caregiver resources after taking the TCARE® screener survey (see Table 3).

Phase II was performed by providing five caregivers with the website address and a QR code to access the TCARE® survey from home in the patients after visit summary (AVS) or patient communication tool within the EHR. These caregivers were contacted by telephone for follow up review of TCARE® resource and assess satisfaction with it. Only two of the five caregivers were successfully contacted, and neither caregiver accessed the survey at home. Both stated they felt that no further resources were needed at the time as the reason for not taking the survey -neither

wished to complete it at time of follow up (see Table 4). Both caregivers were hopeful that the survey could be available to them in the future as their loved one's disease progresses and needs change (see Table 4).

Satisfaction surveys distributed to clinic staff where the scholarly project occurred to assess the feasibility of our intervention, with eight participants providing feedback on the intervention. Six out of eight (75%) respondents agreed that the intervention was helpful for screening for caregiver stress, three out of eight (38%) felt the revised TCARE® protocol from PDSA cycle two would be helpful for providers in a Memory program (n = 8). For billing providers surveyed, two of the five (40%) of the respondents agreed that they would use TCARE® initial screener in the clinic in the future (n=5), and of all providers surveyed three out of seven (43%) agreed they would use the TCARE® smartphrase as a resource for the AVS or patient communication portal (see Table 5).

Table 1

Total Patient Charts Reviewed Compared to Eligible Caregivers for Receiving Intervention

	September	**October**	**November**	**December**	**January**
Number of charts reviewed	12	54	49	39	53
Number of Caregivers qualifying for TCARE screener	3	13	11	10	17
Total Number of charts Reviewed	207				
Total Number of Eligible Caregivers qualifying for TCARE	54				
Average Number of Charts reviewed per Month	41				

Average Number of Eligible Caregivers per Month	11	

Note: N=207 total charts reviewed in a Memory Program, n = 54 caregivers identified that meet inclusion criteria for the TCARE® intervention. Data collection, analysis, and data mining for project data performed in Microsoft Excel.

Table 2

Descriptive Statistics of Most Common, or Average, Values relating to Patient Population

Most Common Caregiver Relationship	Wife
Most Common Diagnosis	Alzheimer's Disease
Average of Baseline MMSE	22
Average of Last MMSE score	21
Average of Patient Age	79
Average of Year of Dx	2020

Note: N=54 caregivers identified as eligible for intervention. Descriptive statistics provide improved insight into identified project population.

Table 3

Results of Phase I: September 26th, 2022, to November 30th, 2022

	September	**October**	**November**	**Total rate of follow up with Office on Aging**
Number of charts reviewed	12	54	49	40%
Number of Caregivers qualifying for TCARE® screener survey	3	13	11	
Number of surveys administered	1	1	3	

Number of caregivers qualifying for Age Well follow up	1	1	3	
Number of caregivers accepting Office on Aging resources	0	1	1	

Note: n= 5 caregivers completed the initial TCARE® screener. Results analyzed in Microsoft Excel then converted to table format to display survey completion and outcomes. This information allows for further analysis of the use of TCARE® survey, including rate of follow up with the Local Office on Aging.

Table 4

Results phase II: December 1st, 2022, to January 31st, 2023.

	Number of Caregivers
Number of caregivers receiving TCARE® screener information in their after-visit summary and/or patient communication option in the EHR	5
Caregivers successfully contacted for satisfaction review of TCARE®	2
Total attempted satisfaction reviews	5
Of those contacted, how many remembered TCARE®?	1
Of those contacted, how many completed the TCARE ® survey?	0
Those answering no, how many wanted to complete the survey today?	0
Of those contacted, how many thought the Memory Program should continue to offer the TCARE® survey to caregivers?	2

Note: n= 5 caregivers were provided with the website address and QR code to access the TCARE® screener at home in the AVS or in patient communication. While none of the

caregivers contacted completed the screening survey, both agree that would like to have the TCARE® survey available to access in the future as ADRD diagnosis progresses.

Table 5

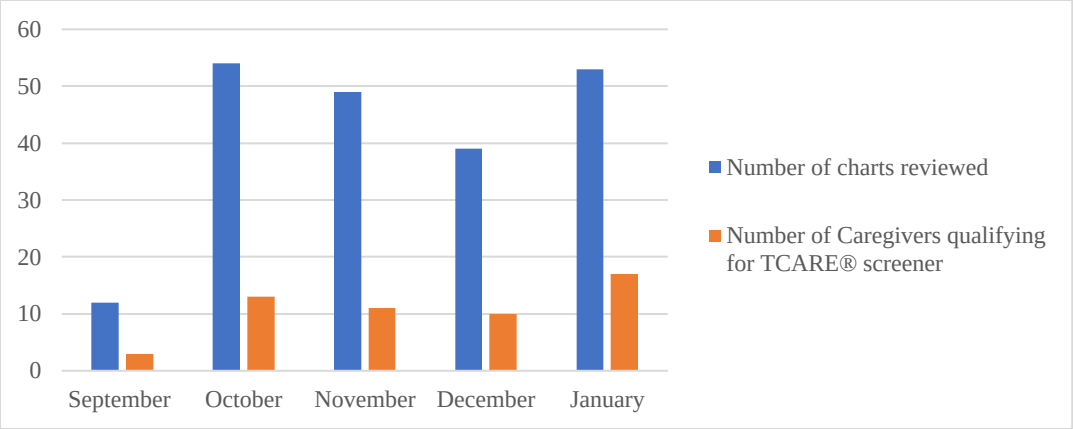
Satisfaction survey results from clinic staff

Satisfaction Survey Response	Question 1 Do you think the TCARE survey is helpful for screening for caregiver stress? (n = 8)	Question 2 The revised TCARE(r) protocol will be helpful for providers at a Memory Program. (n = 8)	Question 3 If you are a billing provider, would you use this caregiver the TCARE survey in the office in the future? (n = 7)	Question 4 Would you use the TCARE Smartphrase in the AVS or MyChart? (n = 7)
Strongly Agree	0	1	1	1
Agree	6	3	1	2
Neutral	2	4	1	3
Disagree	0	0	2	1
Strongly Disagree	0	0	0	0
I am not a billing provider	n/a	n/a	2	n/a

Note: Clinic staff satisfaction surveys (n=8) found that 75% of responses agreed the intervention was helpful for screening for caregiver stress, 50% feeling the revised TCARE® protocol would be helpful for providers. 40% of providers agreed they would use the survey in the office in the future (n=5), and 43% of providers agreed they would use the TCARE® resource in the AVS (n=7).

Figure 1

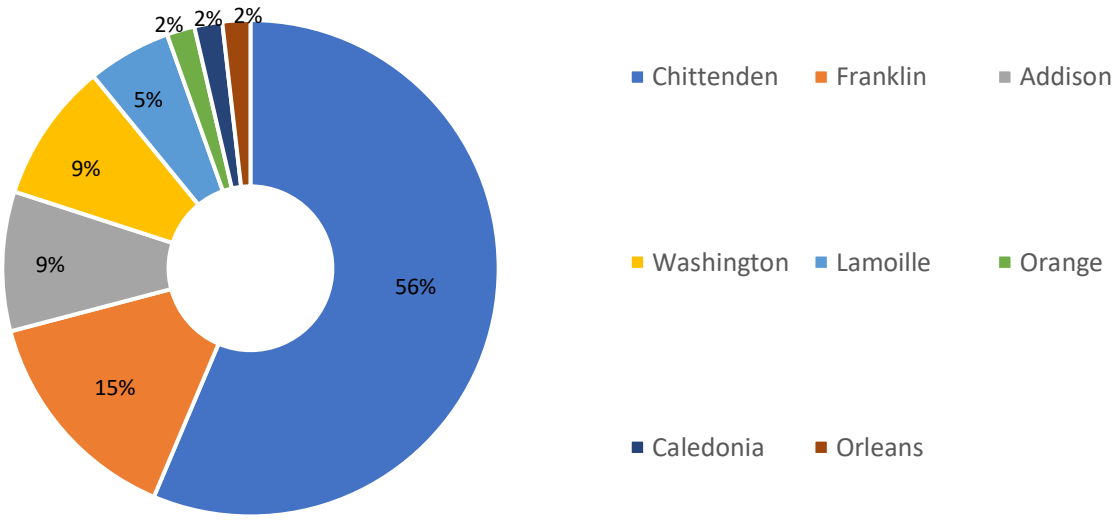
Number of Charts Reviewed Compared to Eligible Caregivers for Intervention



N=207 total charts reviewed for data collection time range, n = 54 caregivers qualifying for intervention.

Figure 2

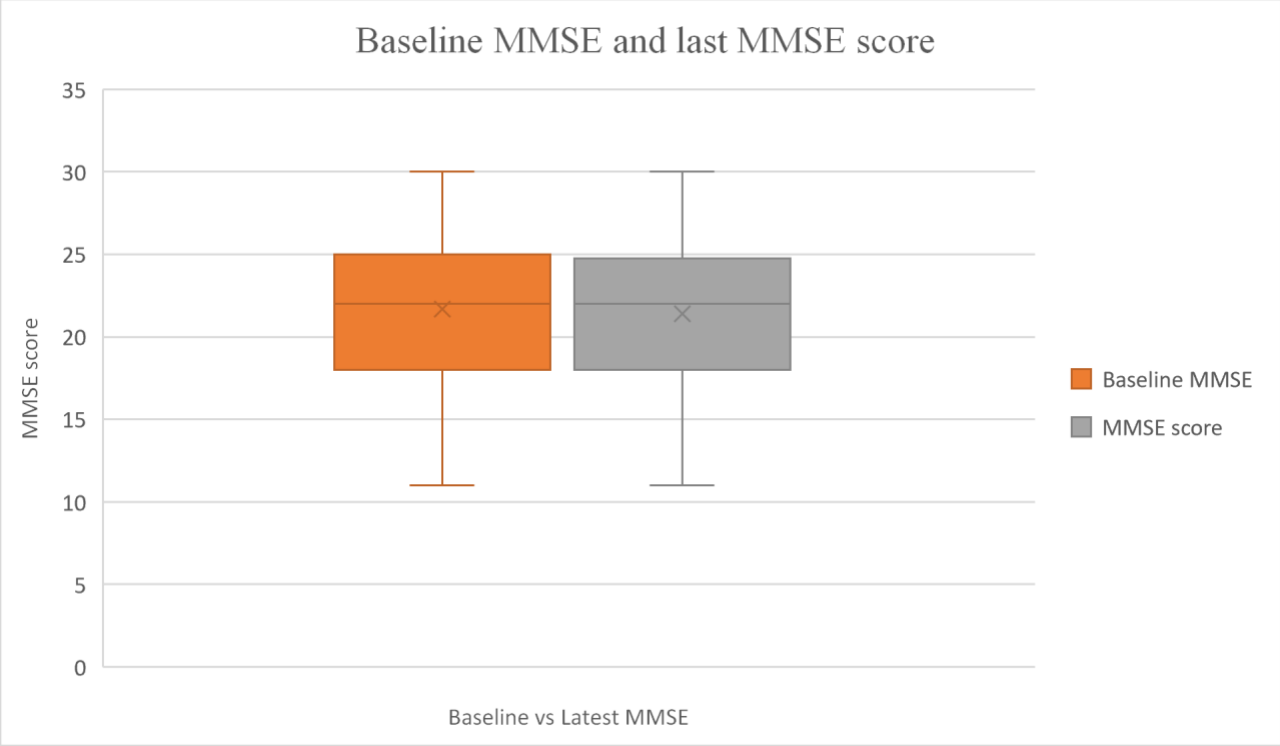
Visual Representation of Where Patients Live by County



N= 54 total caregivers identified through chart review as eligible for TCARE® screening survey. Of those meeting inclusion criteria, the majority were living in Chittenden County (31).

Figure 3

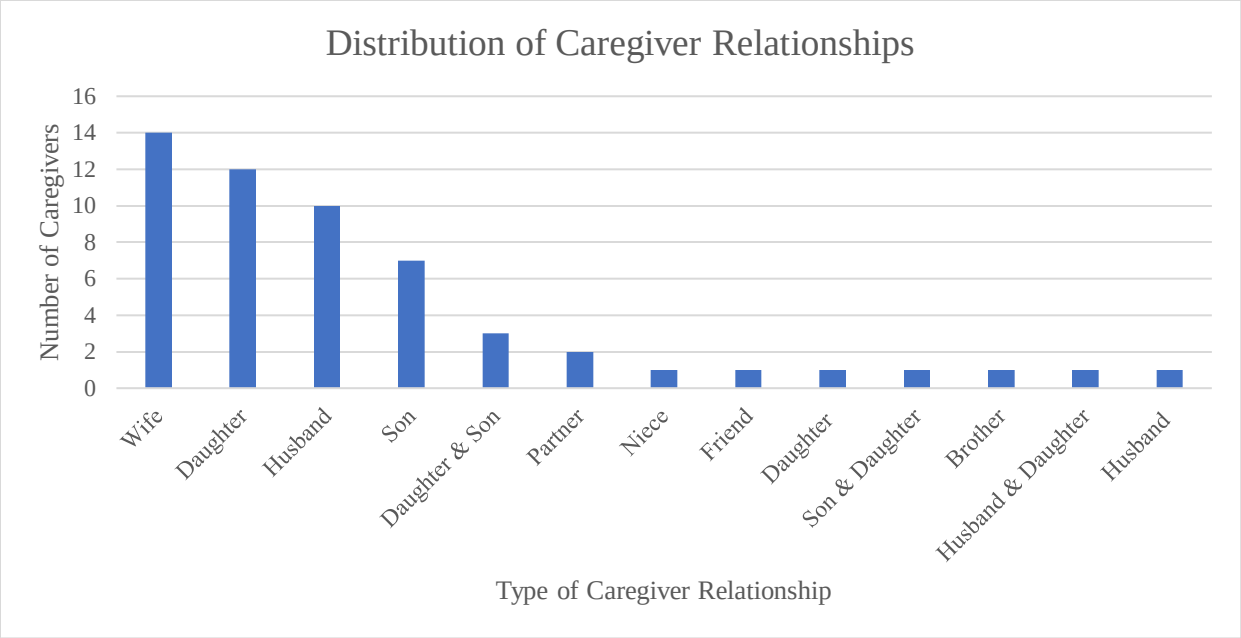
Baseline MMSE and Last MMSE Score by Patient



N=54 patients' charts reviewed with caregivers qualifying for TCARE® intervention. The average baseline MMSE was 22 with a standard deviation of 4.83 and the average last MMSE of 21, with a standard deviation of 4.74 for patients meeting inclusion criteria for this project.

Figure 4

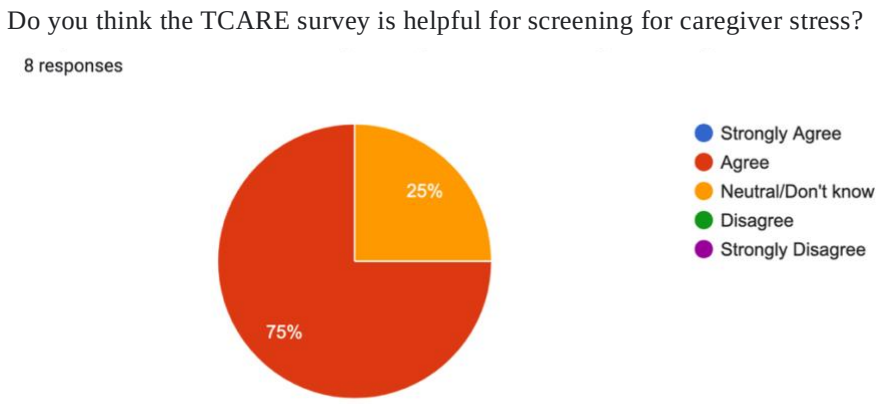
Distribution of caregiver relationship to patient



N= 54 caregivers identified as eligible for the intervention, meaning 26% of scheduled visits with a nurse practitioner qualified for use of the TCARE® protocol. The most common type of relationship between care receiver and caregiver was found to be wife with daughter and husband being the second and third most common relationships.

Figure 5

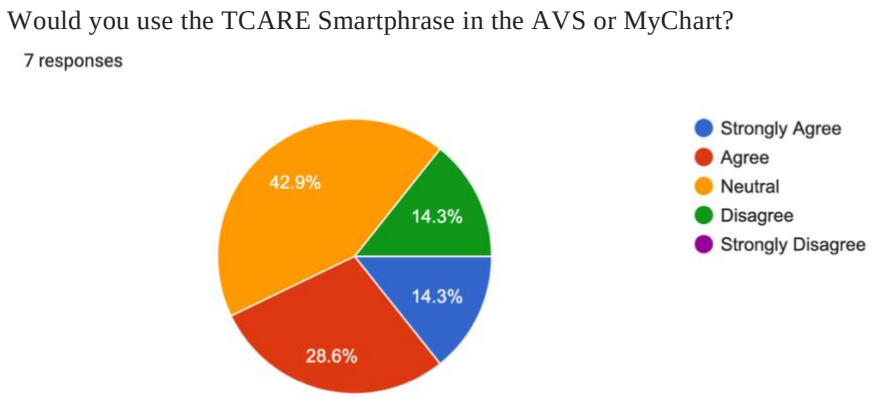
Clinic satisfaction survey outcomes question one



n= 8 clinic staff members who completed the satisfaction survey; 75% agreeing that the TCARE® initial screener is a useful tool when screening for caregiver stress.

Figure 6

Question four results from clinic staff satisfaction survey responses.



n= 7 staff members completed the satisfaction survey, with 38% of respondents agreeing that they would use the TCARE® smartphrase tool in the AVS or when sending messages through the patient communication portal.

Discussion

In our 19-week long data collection period, a total of 54 patients and their caregivers were identified through chart review as meeting inclusion criteria for the TCARE® protocol in the clinic. Hardcopy versions of the TCARE® initial screening survey was completed by five eligible caregivers in the waiting room with the project coordinator while the nurse practitioner performed their neurological and cognitive testing with the patient. By administering the TCARE® screener at that point in the visit, the caregiver was able to answer the prompts without fear of upsetting the patient. We found that the length of time it takes for the NP to perform their

neurocognitive testing with the patient was enough time for caregivers to complete the survey and provide feedback on their experience with it. All caregivers who completed the TCARE® screening survey were found to be moderate to high risk for caregiver stress, and each caregiver voiced appreciation for the attention that the intervention provided regarding caregiver health. One participant became very emotional while completing the survey, remarking that they had not realized the impact their role of caregiver was having on their own wellbeing. All five caregivers were referred to their local Office on Aging (OA) for caregiver follow up; however, only two of the five accepted additional resources, including Meals on Wheels, respite care, and in-home caregiver support services.

The protocol's method of TCARE® survey administration was modified, so the NP provided the caregiver with the secure website address for the survey, a QR-code to the survey, and instructions on how to complete it, in the after-visit summary (AVS) or MyChart patient portal. For simplicity, and ease of use, a smart phrase was created in EPIC linking the TCARE® resource information to a single dot-phrase for NPs to use in the AVS communication tab. This updated protocol was then applied to five caregivers identified as eligible for the intervention, and of these five caregivers, none completed the TCARE® screening survey. Two of the five caregivers declined taking the survey at time of follow up, both reporting that their caregiver needs are met. Both expressed their appreciation for the purpose of the TCARE® resource and hope that it will be available to them as their loved ones needs change with the anticipated neurocognitive decline of ADRD progression.

The implementation of the TCARE® protocol was met with satisfactory results; however, it should be noted that the sample size may have impacted the outcomes. The total number of eligible caregivers was small and each PDSA cycle contained only five caregivers.

Because of the small sample sizes associated with each cycle, the outcomes should be interpreted with caution as the results could be influenced by an unknown bias. Similarly, because of the short timeline of this quality improvement initiative, it is possible that the descriptive statistics of eligible patients and caregivers are inconsistent with the findings of the same statistics in a larger group. For example, few patients with early onset Alzheimer's Disease (AD) were identified as eligible for our intervention, yet clinicians anticipated this value would be larger. It is possible that this value was lower than expected because those diagnosed with early onset AD scheduled during our data collection period met exclusion criteria and/or their six month follow up visit timing did not align with the project timeline.

The positive responses from caregivers regarding the purpose of the TCARE® protocol within a Memory Program encourages continued use of it within this setting to assess caregiver stress. It should be noted that all caregivers who completed satisfaction interviews considered the intervention valuable and would like to see its use continue in the clinic. Positive findings from clinic staff satisfaction surveys included finding that six out of eight clinic staff members surveyed agreed that the TCARE® protocol is a useful screening tool (n= 8) for caregiver stress and two out of five billing providers agreed they would use the TCARE® initial screen in the clinic in the future (n= 5). If performed in environment without strong social work presence, it is likely that more respondents would have answered positively on the satisfaction survey regarding the intervention and project recommendations.

Written feedback from clinic staff regarding perceived challenges, or concerns, for continued use of TCARE® in a Memory Program included concern for replication of work being performed by social workers, time constraints, and mental state of caregivers (i.e., are in the mindset for completing the initial screener). Other written feedback included the desire for

electronic survey use with iPads and expressing support of project program. In evaluating the concern for duplication of social work processes, the project found of 26% of nurse practitioner visits scheduled during the data collection period qualified for the TCARE® protocol. This finding shows that 26% of scheduled patients and caregivers have not been seen by, or referred to, the clinic's social work team. Due to high volume of patients and caregivers requiring support from the clinic, it can take weeks to see the social work team. The local OA's policy is to follow up with caregivers receiving automatic referrals within 3-5 business days by phone to discuss caregiver support options or make appointment with caregiver specialist. By continuing to use the TCARE® initial screener, qualifying caregivers may be able to access community resources in a timely manner. In offering this resource, providers can promote caregiver health and wellbeing by utilizing the TCARE® intervention to encourage caregivers to accept resources to reduce their stress while ensuring their loved ones' needs are met.

Logistical challenges occurred throughout this project, including adapting the administration style of the TCARE® screening tool and pivoting the direction of our protocol to best meet the needs of the patient and caregiver. It was anticipated that the TCARE® initial screener would be administered on iPads or tablets to caregivers; however, due to unseen complications within the health organization's IT network, this was not possible during the data collection period. To continue the use of the TCARE® protocol, modifications were made to the administration style for offering the initial screener survey on paper, and then the creation of the smartphrase for the AVS and patient communication portal.

Overall, the implementation of the TCARE® protocol that was created for use in a Memory Program was a beneficial tool and resource for nurse practitioners and caregivers. Caregivers' expression of their appreciation for the purpose of TCARE® and the hope for its use

to continue in the clinic, combined with multiple providers feeling it is a useful screening tool and agree they would use it in, support the continued use of the intervention in a Memory Program. The current recommendation for providers in a Memory Program is to use TCARE® smartphrase tool to provide caregivers with the initial screener to complete at home as electronic version cannot be offered to caregivers during the office visit. By providing this to caregivers, providers are facilitating connections between qualifying caregivers (moderate-high risk stress) and community-based caregiver support resources.

For next steps, our first recommendation is facilitating health organizational approval and set up of tablet, or iPad, to implement protocol for use of electronic version of the TCARE® initial screener survey. It is suspected that this would increase the use of this screening tool and improve provider assessment of caregiver stress, followed by increased number of caregivers accepting resources from their local OA. The next recommendation is to trial the TCARE® protocol in the primary care setting for patients and caregivers, especially for clinics without a strong social work-case management support team. When offering TCARE® initial screener in the future, implementation of the survey for use while the caregiver is in the office is recommended. This is due to increased completion rate associated with this administration method and the ability to discuss screening results with provider after taking the screener. Other outpatient clinics would benefit from the use of the TCARE® initial screener if none, or little, social work support available for patients and caregivers. Finally, considering the small sample size, it would be appropriate to continue with pilot program until larger sample size reached to address potential sample bias influencing project outcomes.

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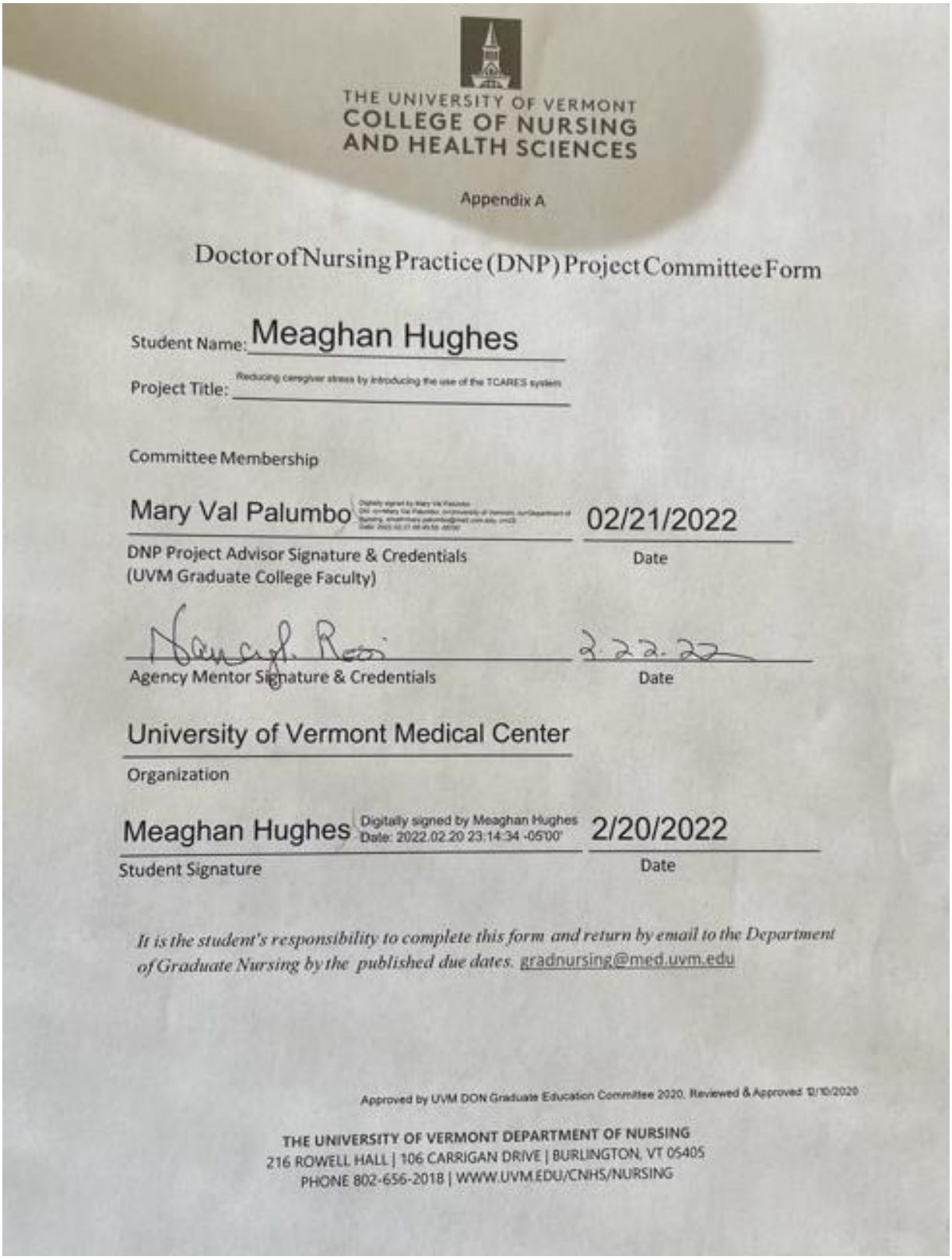
Appendix A: Doctor of Nursing Practice (DNP) Project Committee



THE UNIVERSITY OF VERMONT
COLLEGE OF NURSING
AND HEALTH SCIENCES

Appendix A

Doctor of Nursing Practice (DNP) Project Committee Form

Student Name: Meaghan Hughes

Project Title: Reducing caregiver stress by introducing the use of the TCARES system

Committee Membership

Mary Val Palumbo — 02/21/2022
DNP Project Advisor Signature & Credentials (UVM Graduate College Faculty) — Date

Agency Mentor Signature & Credentials — 2.22.22
Date

University of Vermont Medical Center
Organization

Meaghan Hughes Digitally signed by Meaghan Hughes Date: 2022.02.20 23:14:34 -05'00' — 2/20/2022
Student Signature — Date

It is the student's responsibility to complete this form and return by email to the Department of Graduate Nursing by the published due dates. gradnursing@med.uvm.edu

Approved by UVM DON Graduate Education Committee 2020. Reviewed & Approved 12/10/2020

THE UNIVERSITY OF VERMONT DEPARTMENT OF NURSING
216 ROWELL HALL | 106 CARRIGAN DRIVE | BURLINGTON, VT 05405
PHONE 802-656-2018 | WWW.UVM.EDU/CNHS/NURSING

Appendix B: Initial Approval for the Doctor of Nursing Practice (DNP) Project

THE UNIVERSITY OF VERMONT
COLLEGE OF NURSING
AND HEALTH SCIENCES

Appendix B

Initial Approval for the Doctor of Nursing Practice (DNP) Project

Student Name: Meaghan Hughes

Project Title: Reducing caregiver stress by introducing the use of the TCARES system

Synopsis of the project topic, evidence, potential intervention, outcomes (< 250 words).

The wellbeing of the patient is directly correlated to the health and wellbeing of the caregiver, and increased stress has been associated with poorer patient and caregiver outcomes. For caregivers working with patients diagnosed with dementia or cognitive impairment, as these caregivers may experience greater levels of behavioral disturbances and heavier reliance on the caregiver for help with ADLs/IADLs (Etters, 2008). To address caregiver stress, the system TCARES was created, and it works as an electronic adaptive questionnaire that provides individualized recommendations to improve caregiver wellbeing/reduce stress. When utilized by the Washington State Department of Health, the TCARES system was found to reduce reported caregiver stress and depression by 80% at the six-month rescreening event (Montgomery, 2014). Improved caregiver wellbeing has been associated with deceased hospital admission rates and number of placements

DNP Project Vetting Committee
Representative Department of Nursing Faculty
Signature and Date

Meaghan Hughes

Student
Signature &
Date 3/14/2022

Synopsis of the project topic, potential intervention, outcomes (<250 words):

The wellbeing of the patient is directly correlated to the health and wellbeing of the caregiver, and increased stress has been associated with poorer patient and caregiver outcomes. For caregivers working with patients diagnosed with dementia or cognitive impairment, as these caregivers may experience greater levels of behavioral disturbances and heavier reliance on the caregiver for help with ADLs/IADLs (Kawaharada, 2019). To address caregiver stress, the system TCARE was created, and it works as an electronic adaptive questionnaire that provides individualized recommendations to improve caregiver wellbeing/reduce stress. When utilized by the Washington State Department of Health, the TCARES system was found to reduce reported caregiver stress and depression by 80% at the six-month rescreening event (Montgomery, 2014). Improved caregiver wellbeing has been associated with deceased hospital admission rates and number of placements into nursing facilities or long-term care facilities are reduced (Fortinsky, 2014).

This project will create a protocol for use of the TCARE system at the Memory Program at the University of Vermont Medical Center. It is expected that by implementing the use of this system caregiver and patient wellbeing will improve. The aim of this project is to decrease reported caregiver stress by 20% by January of 2023 by implementing the TCARE system within the Memory Program.

Appendix C: Doctor of Nursing Practice (DNP) Project Proposal Approval Form

Appendix C

Doctor of Nursing Practice (DNP) Project Proposal Approval Form

Student Name: Meaghan Hughes

Project Title: Implementing the TCARE Protocol to Screen Informal Care

Part 1 Project Abstract Proposal: Upon approval of your project advisor, complete the following summary and submit a copy to the committee for review. Schedule the comprehensive exam with your community mentor and advisor.

Please write a brief summary (<300 words) of the DNP project you are proposing to implement. Include the problem description, supported by evidence, the project aims, interventions, and outcome measures.

The wellbeing of the patient is directly correlated to the health and wellbeing of the caregiver, and increased stress has been associated with poorer patient and caregiver outcomes. For informal caregivers working with patients diagnosed with dementia or cognitive impairment, they are at risk for experiencing greater levels of behavioral disturbances and usually rely heavily on the caregiver for help with ADLs/IADLs as the disease progresses (Kawaharada, 2019). To address caregiver stress, the TCARE (Tailored Caregiver Assessment and Referral Evaluation) protocol was created, and it works as an electronic adaptive questionnaire that provides individualized recommendations to improve caregiver wellbeing/reduce stress. When utilized by the Washington State Department of Health, the TCARES system was found to reduce reported caregiver stress and depression by 80% at the six-month rescreening event (Montgomery, 2014).

This project will create a protocol for use of the TCARE protocol at the Memory Program at the University of Vermont Medical Center, with key stakeholders being Vermont Department of Health and Age Well Vermont. A short questionnaire will be offered to informal caregivers at the follow up education and support visit following diagnosis of dementia or cognitive impairment. Those scoring moderate-high risk will be referred to their local Age Well office for further TCARE protocol assessment, and for those scoring low risk they will continued to be offered the screening at follow up visits to address the changing needs with disease progression. It is expected that by implementing the use of the TCARE protocol that informal caregiver and patient wellbeing will improve. The aim of this project is to decrease reported caregiver stress at follow up rescreening events by 20% by January of 2023 by implementing the TCARE protocol within the Memory Program.

Part 2 Proposal Approval Rubric: Completed by the project advisor and committee completed during the oral comprehensive exam.

Measure	Satisfactory	Unsatisfactory
Identify a clinically relevant problem and define the nature and significance of the problem.	x	
Critically appraise and synthesize the evidence that supports the DNP project	x	
Develop and articulate a rationale for the DNP project using best evidence.	x	
Develop and articulate specific aims for the project.	x	
Describe the DNP project intervention, outcome measures, and procedures for data analysis.	x	
Highlight the relationship between the DNP Essentials, NONPF competencies and the DNP project.	x	

Comments:

UVM Faculty DNP Project Advisor Signature, Credentials & Date

Mary Val Palumbo 5/5/2022

Community/Agency Mentor, Credentials or UVM Faculty Signature & Date

5/11/2022

Student Signature & Date

Upon satisfactory completion of the comprehensive exam, it is student responsibility to upload this form into the blackboard and e-mail ta copy to the Department of Graduate Nursing.

Appendix D: Revised TCARE® Protocol for a Memory Program Flow Chart