Implementing an evidence-based caregiver intervention within an integrated healthcare system

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ABSTRACT

The complexity of dementia care combined with the lack of care experience and external support systems creates unique burdens for the caregiver. This article describes the initial findings from the Scott & White Family Caregiver Program (FCP), the Resources for Enhancing Alzheimer's Caregiver Health (REACH II) intervention adapted for a healthcare setting. The FCP targeted one large hospital and one large ambulatory internal medicine primary care clinic within the Scott & White system. The 6-month program provided support and skills training tailored to the specific needs of caregivers based on their level of risk. At follow-up, the overall risk score, caregiver burden, and patient problem behaviors were significantly decreased and care recipient safety significantly increased. All caregivers reported that the information provided was helpful. This model successfully translated REACH II into an integrated healthcare setting and significantly reduced risks associated with dementia caregiving.

KEYWORDS

Caregiving, Alzheimer's disease, Dementia, RE-AIM framework

INTRODUCTION

Caring for a family member with dementia can be challenging, as the course of dementia is marked not only by cognitive decline but also changes in personality, behavior, and functional ability of the individual. The daily care of the individual is typically made more complex by coexisting chronic diseases, adding medical management of multiple symptoms to the duties of the family caregiver [1]. The complexity of dementia care combined with the lack of care experience and external support systems creates unique burdens that are known to be detrimental to the physical and mental functioning of the caregiver [2]. Programs designed to support family members in their caregiving roles have been demonstrated to be beneficial in clinical trial research [3]. Multicomponent programs that provide caregivers with avenues of social and emotional support as well as skills training in basic dementia care strategies appear to be particularly useful to caregivers who are expressing feelings of burden or stress associated with that role [4, 5].

Implications

Practice: Successful translation of evidence-based caregiver support programs into integrated healthcare settings requires alignment with the system's organizational structure and practice patterns.

Policy: Continued funding will be needed to reach caregivers with support programs in healthcare or community settings.

Research: Further research is needed to translate and implement evidence-based caregiver support programs into the community.

Growing attention to the public health crisis of family caregiving is leading to the translation of beneficial caregiver programs for the approximately 15 million Americans who provide unpaid care for a person suffering from dementia [6]. This effort has been championed by the Administration on Aging that has worked with numerous caregiving researchers and community-based organizations to support the translation of evidence-based caregiver interventions into community services. These efforts do, however, face challenges since available evidence-based interventions for caregivers have emerged from efficacy clinical trials. The challenges of translating an intervention tested within the confines of efficacy clinical trial principles are well documented [7]. Most notably is the lack of attention to contextual variables and use of restrictive participant inclusion criteria. As assets to establishing the efficacy of an intervention, these characteristics negatively impact direct translation of an evidence-based intervention into support services for the intended population. Moreover, efficacy tests of interventions focus on the individual level with little attention given to the characteristics of the larger systems in which the intervention is ultimately implemented. This is especially true of nonmedical interventions expected to be integrated into healthcare settings, as most behavioral studies have not been translated into practice [8].

Innovative methodologies that facilitate the translation of evidence-based programs by adapting interventions for real world settings and studying

the implementation process are showing promise. For example, the evidence-based program, *Resources for Enhancing Alzheimer's Caregiver Health (REACH II)* intervention, has been the focus of numerous translation projects funded by the Administration on Aging, the Rosalynn Carter Institute for Caregiving, and the Department of Veterans Affairs (VA). Burgio and colleagues [8] adapted the REACH II intervention for use in four Area Agencies on Aging in Alabama. While the resulting intervention differed from the efficacy trial in significant ways, the evaluation demonstrated significant pre-post effects on domains similar to the original clinical trial. REACH VA translated REACH II into 24 VA medical centers in 15 states. Using indigenous staff of the medical center to deliver the intervention, the REACH VA intervention was similar in content and intensity of the intervention delivered in the clinical trial and achieved similar outcomes [9].

In partnership with the Area Agency on Aging (AAA), we systematically translated the REACH II intervention into a nonprofit integrated healthcare system. Embedding the intervention within an integrated healthcare setting facilitates the identification and support of family members who care for individuals with dementia at numerous health services contact points. Healthcare systems are frequented by patients with dementia and may provide an ideal point of support delivery for family caregivers who would otherwise remain anonymous in the community. Caregivers may also be more apt to receive care and treatment during the high stress time of the care recipient's hospitalization [10]. The scope of this article is to describe the creation and initial findings from the Scott & White Family Caregiver Program (FCP), the REACH II Intervention adapted for a healthcare setting. Preliminary findings and evidence that supports translation and replication are also presented.

Methods

All procedures associated with this study were reviewed by the Institutional Review Board at Scott & White Healthcare which ruled that the project was exempted from further IRB oversight. Participants volunteered to answer all project-related questions. No information was extracted from the participant's medical record. Medical records were reviewed to identify patients who meet the project target criteria.

Setting

Scott & White Healthcare is a nonprofit collaborative healthcare system established in 1897 in Temple, Texas. Among the leading healthcare systems encompassing one of the nation's largest multispecialty group practices, Scott & White's Mission is to provide the most personalized, comprehensive, and

highest quality healthcare enhanced by medical education and research. Scott & White Healthcare includes 12 hospital sites, two additional announced facilities, more than 60 clinic locations throughout Central Texas, and staff exceeding 13,000 (including more than 900 physicians and scientists and nearly 400 specialized healthcare providers). The FCP targeted one large hospital (636 beds) and one large ambulatory internal medicine primary care clinic within the Scott & White system. Implementation of the project was facilitated by a partnership with the Central Texas AAA. FCP staff developed a streamlined referral system allowing them to automatically refer enrolled caregivers to the Central Texas AAA for formal services such as access to respite care and counseling services.

Participants

Descriptive characteristics of the enrolled caregiver/care recipient dyad are provided in Table 1. The majority of caregivers enrolled in the FCP were female

Table 1 | Demographic characteristics of 164 enrolled caregivers in the Scott & White Family Caregiver Program

Characteristic	N (%)
Age, mean $\pm$ SD; (range)	64 $\pm$ 14; (30-93)
Gender	
Female	131 (79)
Male	29 (19)
Unknown	4 (2)
Race	
White	128 (77)
Black	9 (6)
Hispanic	16 (10)
Other	11 (7)
Marital status	
Married	130 (79)
Not married	25 (16)
Unknown	9 (5)
Lives in rural area (no)	145 (87)
Caregiver relationship to patient	
Spouse	79 (48)
Child	67 (41)
Other relative	18 (11)
Time spent providing care	
All the time	110 (67)
Days or Nights only	13 (8)
1-3 times per week	10 (6)
Other	31 (19)
Living status	
Lives with CR	110 (67)
Lives within 1 hour from CR	41 (25)
Lives more than 1 hour from CR	3 (2)
Unknown	10 (6)
Employed	
Full or part-time	48 (30)
Unemployed/Retired	102 (62)
Unknown	14 (8)
CR Age, mean $\pm$ SD; (range)	81 $\pm$ 7; (64-103)
CR Gender	
Female	83 (52)
Male	76 (45)
Unknown	5 (3)
CR Race	
White	127 (76)
Black	8 (6)
Hispanic	17 (11)
Other	12 (7)
CR Marital Status	
Married	94 (56)
Not married	49 (31)
Unknown	21 (13)
Risk Appraisal Measure (range 0-31)	
Mean $\pm$ SD; (range)	12 $\pm$ 5; (1-28)

SD standard deviation, CR care recipient

(79 %), white (77 %), married (79 %), unemployed or retired (62 %), and did not live in a rural area (87 %). About half of the caregivers were spouses, while 41 % were adult children. Of the enrolled caregivers, 67 % of them lived with the care recipient and 67 % reported providing care all the time. The mean age of the caregivers was 64, while the care recipients mean age was 81. Demographic characteristics for the care recipients differed from those of the caregivers in that 52 % were female and 56 % were married. Similarly to the caregivers, the majority of the care recipients were white (76 %). Of the 164 caregivers who enrolled, 164 completed the baseline assessment and 72 completed the 6-month follow-up.

Packaging of REACH II into the Scott & White Family Caregiver Program

The REACH II intervention utilized education, skills training, and support to reduce the impact of stressors that lead to poor emotional and physical health outcomes. Tested in a multisite randomized trial of 642 caregivers in six states with funding from the National Institute on Aging and National Institute of Nursing Research, the REACH II intervention achieved a meaningful impact on the caregiver's quality of life and rates of caregiver depression [5]. The REACH II intervention provided the unique advantages of packaging caregiver supports and skills training exercises into a comprehensive program that could be individualized to the unique needs of family caregivers. The five REACH II intervention components, delivered through home visits and therapeutic phone calls, identified and addressed caregiving risks (i.e., safety, emotional well-being, health and self-care, social support, and patient problem behaviors of the care recipient/caregiver skills).

To ensure fidelity to the REACH II clinical trial, all FCP intervention materials including the treatment delivery schedule (described in the "Delivering the REACH II Intervention Components via the Caregiver Notebook and Family Profile" section) were based on the REACH II intervention materials. Training and oversight of FCP staff by a member of the REACH II research team promoted fidelity to the intervention as well as specific training in the techniques used with caregivers. Staff members were master's-trained counselors. Additionally, the primary outcome measure (described in the "Evaluation framework and data analysis" section below) was developed and tested by the REACH II investigators to be consistent with the REACH II baseline assessment.

Our goal of implementing the REACH II intervention within an integrated healthcare setting required a systematic review of the REACH II intervention components, treatment intensity, and delivery mechanisms. Resulting adaptations facili-

tated translation of the clinical intervention into a customer-friendly program delivered in a format customarily used in healthcare settings. This was necessary to achieve acceptance from the clinical delivery staff, who would be key referral sources, as well as individuals to be served by the intervention. These attributes of the translational process resulted in the following developmental activities of the FCP.

Creation of the Caregiver Notebook and Family Profile—

The intervention materials presented to caregivers in the REACH II clinical trial were extracted from the REACH II intervention manuals and reformatted into "*A Caregiver's Notebook*" (available from the corresponding author). The materials are arranged into nine sections: Home Safety, Using Social Support, Managing Stress, Pleasant Things For You, Healthy Living, Understanding Your Feelings, Skillful Communication, Relating Memory Problems to Behaviors, & Legal and Medical Information. Each section includes all materials necessary to deliver the intervention component according to the REACH II protocol. Two additional sections are included: Resources (a listing of local and national resource centers for caregivers) and My Family Profile. The Pleasant Things For You section outlines activities that help the caregiver learn to find time to do things they enjoy; Healthy Living focuses on ways to stay organized and aware of the health of caregivers and their loved one; Understanding Your Feelings includes activities to help caregivers stay in control of their negative feelings stemming from the unpleasant behaviors that can occur when caring for their loved one; Skillful Communication includes tips to help caregivers communicate more effectively with their loved one.

The Family Profile is designed to integrate the REACH II intervention components into a plan of care that was tailored to the specific risks/needs of the caregiving family. Specific REACH II intervention strategies within each of the sections were prescribed based on the risk reported by the caregiver (see "Evaluation framework and data analysis" section). Furthermore, referrals to formal community services, such as respite care, mental health counseling, and benefits and options counseling were made to the partnering agency, the Central Texas AAA. The format of the Family Profile paralleled *A Caregiver's Notebook* and included the same nine sections. The inclusion of the Family Profile in *A Caregiver's Notebook* was to ensure that all intervention components used in REACH II would be available to all enrolled caregivers.

*Delivering the REACH II intervention components via the Caregiver Notebook and Family Profile—*Caregivers received therapeutic contacts with the program staff in person, by phone, or by mail, depending on their level of risk (Table 2). The treatment delivery schedule was significantly less intense than that used in the REACH II clinical trial, which provided 12 in-home and telephone sessions. This adaptation

Table 2 | Description of therapeutic contacts by caregiver risk level provided in the Scott & White Family Caregiver Program

Risk Level	Low	Medium	High
1 week			
Type of contact Session content	Phone call: Baseline Provide overview of the FCP Conduct demographic intake interview Review RAM responses Introduce & mail <i>CG Notebook / FP</i> Establish next scheduled contact	Phone call: Baseline Provide overview of the FCP Conduct demographic intake interview Review RAM responses Introduce & mail <i>CG Notebook / FP</i> Establish next scheduled contact	Phone call: Baseline Provide overview of the FCP Conduct demographic intake interview Review RAM responses Introduce & mail <i>CG Notebook / FP</i> Establish next scheduled contact
2-3 weeks			
Type of contact Session content	Phone call Review <i>CG Notebook & FP</i> Discuss goals of future contacts	Phone call Review <i>CG Notebook & FP</i> Discuss goals of future contacts Schedule visit to the FRC	Phone call Review <i>CG Notebook & FP</i> Discuss goals of future contacts Goals will be divided into two groups to discuss at each FRC visit Schedule visit to the FRC
1 month			
Type of contact Session content		FRC visit Review <i>CG Notebook & FP</i> Address goals from previous contacts Provide therapeutic techniques according to REACH II Establish next scheduled contact	FRC visit Review <i>CG Notebook & FP</i> Address goals in Group 1 Provide therapeutic techniques according to REACH II Establish next scheduled contact
2 months			
Type of contact Session content			Phone call Follow-up on Group 1 goals discussed in previous FRC visit Reinforce & validate CG techniques learned in FRC visit Schedule next FRC visit
3 months			
Type of contact Session content	Phone call	Phone call Review information discussed in previous FRC visit & phone call Reinforce / validate CG techniques Provide therapeutic techniques according to REACH II Establish next scheduled contact	FRC visit Review information discussed in previous FRC visit & phone call Reinforce / validate CG techniques Address goals in Group 2 Provide therapeutic techniques according to REACH II Establish next scheduled contact
4 months			
Type of contact Session content			Phone call Follow-up on <i>FP</i> Group 2 goals & information discussed in previous FRC visit & phone call Reinforce & validate CG techniques learned in FRC visit Establish next scheduled contact
6 months			
Type of contact Session content	Phone call Review information discussed in previous contacts Reinforce & validate CG techniques Answer questions & discuss concerns expressed by the CG Administer 6 month RAM Administer Satisfaction Survey Conclude the study or re-enroll CG	Phone call Review information discussed in previous contacts Reinforce & validate CG techniques Answer questions & discuss concerns expressed by the CG Administer 6 month RAM Administer Satisfaction Survey Conclude the study or re-enroll CG	Phone call Review information discussed in previous contacts Reinforce & validate CG techniques Answer questions & discuss concerns expressed by the CG Administer 6 month RAM Administer Satisfaction Survey Conclude the study or re-enroll CG

CG caregiver, *FP* family profile, *FRC* Family Resource Center

was driven by resource limitations and our desire to make the intervention schedule more flexible and responsive to the needs of the caregiver, i.e., the frequency of therapeutic contacts was a function of the level of risk reported by the caregiver. A minimal level of telephone contacts with caregivers ensured that the caregivers were exposed to all intervention components. Caregivers' requests for in-person or phone therapeutic contacts were never denied. Program staff were trained to deliver intervention components using the training material available in the REACH II intervention manual. This included a formal training program followed by routine supervision from the first author (a REACH II principal investigator). Similar to REACH II, therapeutic contacts included social problem-solving techniques, skills training, and practice of the REACH II intervention components

(e.g., one-on-one practice of stress management techniques). Data on the amount of contact with the caregivers is presented in the ("Results") section.

In-person contacts occurred in the Scott & White Family Resource Center, not in the family home as done in REACH II. This was also due to the resource limitations. The Family Resource Center was designed to be a welcoming and comfortable place for family caregivers to find support and education and is ideally located within a large Scott & White internal medicine primary care clinic to assure easy access and convenience for patients and family caregivers.

Evaluation framework and data analysis

We used the Reach, Effectiveness, Adoption, Implementation, Maintenance (RE-AIM) framework to

guide the evaluation of our REACH II translation project. The RE-AIM framework [11] is designed to guide the evaluation of health promotion interventions to be translated into public use and has recently been applied in the translation of community-based caregiver interventions [8, 12]. The RE-AIM framework can direct project design, evaluation, and reporting to inform our understanding of the potential for an intervention to be applied in real world settings [13]. It calls for evaluation of the individual (e.g., patient) and institutional level (e.g., health plan, healthcare setting) impacts of the intervention. The five dimensions of the framework are as follows: Reach into the target population, Efficacy or effectiveness of the intervention, Adoption by target settings/institutions, Implementation through consistent delivery of the intervention, and Maintenance of effects in individuals and populations over time. Given the scope of the FCP, we placed particular emphasis on *reach*, *effectiveness*, and *implementation* at the individual patient level and *adoption* and *maintenance* at the institutional level.

The primary outcome measure was the REACH II risk assessment measure (RAM). The measure, developed by a working group of REACH investigators, was based on the REACH II 59-item baseline assessment battery that represented six target domains of risk: depressive symptomatology, caregiver burden, self-care and healthy behaviors, social support, safety, and patient problem behaviors (Table 3). From this initial pool of questions, 16 items that represented each of the six domains were selected through conceptual and psychometric analyses with 642 dementia caregiver dyads from the REACH II intervention [14]. Four criteria guided the selection process: represent areas that placed the caregiver at risk for negative outcomes, modifiable and amendable to intervention, had face validity, and were relevant across diverse ethnic and cultural groups. The resulting shortened RAM demonstrated adequate internal consistency for a multidimensional scale to identify areas of support for family caregivers of dementia patients (Cronbach alpha=0.65) [14]. Furthermore, face, discriminant, and convergent validity were also demonstrated [14].

For the FCP, a total RAM score was calculated by summing across the 16 items. RAM scores were categorized as low (0–11), moderate (12–27), and high (28–40). Results of the RAM were used to guide customization of the Family Profile. The RAM was conducted with caregivers at the baseline and 6-month follow-up time points. To assess caregiver's satisfaction with the FCP, a satisfaction questionnaire was completed at the 6-month follow-up time point. Program and treatment implementation measures were collected and documented by FCP staff throughout the follow-up period for each caregiver.

SAS® software [15] was used for “Efficacy” analyses (see below) which included participants who had a pre-

and post-assessment RAM. Analysis of variance was used to compare differences between baseline and the 6-month follow-up outcome measures. Primary outcome measures included overall total RAM score, original REACH II domains (constructed from the RAM; see Table 3), and individual RAM questions. The customary p value of ≤ 0.05 was used to indicate statistical significance.

RESULTS

Results are presented according to the RE-AIM framework
Reach—The Reach of a program, according to the RE-AIM theory, was defined as the extent the program attracts the intended audience (i.e., the participation rate of individuals among the target audience). The combination of our hospital and primary care clinic outreach yielded a pool of 3,295 Alzheimer's or dementia patients (Fig. 1). Of these patients, 2,561 did not have a caregiver, resided in a long-term care facility, or were admitted on floors in which the program was not implemented at that time. (The FCP was systematically implemented within the hospital in increments of three units throughout the hospital until full implementation was achieved in month 9 of the FCP start-up.) Out of the remaining 734 eligible Alzheimer's or dementia patients with a caregiver, 265 caregivers failed to respond to our invitation to enroll, 242 caregivers were not contacted due to lack of contact information in the medical charts, 59 caregivers declined to participate, and 4 care recipients died. One hundred sixty-four caregivers (35 %) were enrolled in the FCP. Stratification of this number throughout the implementation phase shows increasing enrollment percentages, suggesting increasing *Reach* as the FCP progressed. Throughout the program, 25 caregivers were lost to follow up, 35 caregivers did not return the follow-up questionnaire, 7 were transferred to a more structured, resource-rich program, the Community Living Program (CLP), provided by our partner agency, the Central Texas AAA, and 25 caregivers canceled services due to care recipient's death or not needing services for various reasons.

Efficacy—The Efficacy of a program was defined as the impact of an intervention on important health, quality of life, and economic outcomes. Significantly positive pre-post effects were found on the primary outcome measure of the FCP. Overall, the RAM mean measure at baseline was 12 (standard deviation 5) and 9 (standard deviation 5) at the 6-month time period, resulting in a significant reduction in the overall RAM score (p value=0.0002). Furthermore, this reduction resulted in a mean RAM score decreasing from a medium risk level to a low risk level.

Table 4 describes the significant RAM domains found at the 6-month follow-up. Caregiver burden and patient problem behaviors significantly decreased

Table 3 | Overview of the Resources for Enhancing Alzheimer's Caregiver Health II 16-item risk appraisal (RAM) [14]

Domain	Definition of Domain	RAM Items	Example of Therapeutic Strategies
Self-care and healthy behaviors	Caregiver's physical well-being and self-care behaviors	Caregiver has trouble sleeping Caregiver's rating of physical health	Provide educational materials of self-care Provide instruction on healthy behaviors Provide educational materials on stress management techniques Referral to appropriate medical resources
Patient problem behaviors	Difficulties in the management of patient activities and instrumental activities of daily living and behavioral problems	Caregiver has information on symptoms of dementia Caregiver feels stress when trying to help patients with daily activities	Provide educational materials on dementia and managing problem behaviors Engage in problem solving exercises
Burden	Feels stress due to caregiving responsibilities Feels good as a result of caregiving	Caregiver feels stress trying to meet other responsibilities Caregiver feels strain around patient Caregiver feels good as a result of caregiving	Provide educational materials on stress and stress management techniques Discuss and teach stress management techniques (e.g., breathing exercises, stretching)
Depression	Felt depressed or sad	Caregiver felt depressed in the last week	Provide information and instruction on strategies for engaging in pleasant events and mood management Referral to appropriate healthcare specialist (e.g., mental health counselor)
Social support	Satisfaction with support from friends or family	Satisfaction with help from friends Satisfaction with support from others	Provide information on community resources Provide education about the importance of social support and communication skills Referral to a support group
Safety	Being at risk because of caregiver's behavior Being at risk because of patient impairment	Feel like yelling at patient Refrain from hitting patient Dangerous objects are in the home Patient wanders Patient drives Able to leave patient alone	Provide education and instruction on stress and anger management techniques Remove dangerous objects from home Enroll patient in "Safe Return" program of the Alzheimer's Association File report with local department of motor vehicles

CG caregiver, FP family profile, FRC Family Resource Center

and care recipient safety significantly increased during the follow-up period. Notable differences were also found on individual RAM questions (Table 5). At the 6-month follow-up time period, caregivers were less likely to have had to keep themselves from hitting or slapping the care recipient because of the way they behaved (question 12), were less likely to feel like screaming or yelling at the care recipient because of the way they behaved (question 11), and were less likely to feel strained, stressed, or tense when they are

around the care recipient (question 14). Significant reductions in caregiver stress when taking care of basic household needs (question 13) and when helping the care recipient with basic daily activities (question 15) were also noted. Additionally, care recipients were less likely to wander outside (question 4), and caregivers felt they had written information about memory loss, Alzheimer's disease, or dementia (question 1).

Adoption—Adoption was defined as the absolute number or proportion of settings who are willing to

Fig. 1 | Scott & White Family Caregiver Program study flow diagram

Table 4 | Summary of findings in primary outcome measures by domain with 6-month follow-up ($n=72$)

REACH II Domain	p-value
Self-care and healthy behaviors	0.92
Patient problem behaviors	0.0001a
Burden	0.002a
Depression	0.11
Social support	0.18
Safety	0.005a
All Domains	0.0002a

Values with lowercase letter are statistically significant at $p \leq 0.05$

initiate a program. Program staff met with the nurse directors, nurse managers, nurse educators, and nurses on each hospital unit and with the nurse managers and nurses of all internal medicine clinic teams. Placement of information packets, nursing education concerning the FCP, and training about the prompts within the electronic medical record (EMR) system were discussed with each of the

respective units and teams. This customization and collaborative discussion enhanced the adoption of the FCP. All units of the large hospital ($n=9$) and care teams of the internal medicine clinic ($n=6$) have fully participated in the FCP, representing 100 % adoption.

Integration of the FCP into existing structures and systems within Scott & White was critical to the successful adoption of the program, as it allowed program staff to screen a large number of potentially eligible Alzheimer's or dementia patients served by Scott & White. Two approaches were used: integration into the EMR and integration into nursing staff development programming.

Created in collaboration with technology specialists from the Scott & White Siemens Information Technology team and the nursing staff, two key questions were embedded into the hospital admissions EMR infrastructure across the entire hospital. If a nurse identified a person as having Alzheimer's

Table 5 | Summary of findings in primary outcome measures by RAM questions ($n=72$)

REACH II RAM Questions	Domain	p-value
1. Do you have written information about memory loss, Alzheimer's disease or dementia?	Patient problem behaviors	0.001a
2. Can your family member get to dangerous objects (i.e. loaded or unlocked guns, or sharp objects) that could be used as weapons?	Safety	0.31
3. Do you ever leave your family member alone or unsupervised in the home?	Safety	0.12
4. Does your family member try to leave the home and wander outside?	Safety	0.01a
5. Does he/she drive?	Safety	0.72
6. Overall, how satisfied have you been in the past month with the help you have received from family, friends, or neighbors?	Social Support	0.30
7. In the past month, how satisfied have you been with the support, comfort, interest, and concern you have received from others?	Social Support	0.15
8. In the past month, have you had trouble falling asleep, staying asleep, or waking up too early in the morning?	Self-care / healthy behaviors	0.63
9. In general, would you say your health is: excellent, very good, good, fair, or poor?	Self-care / healthy behaviors	0.77
10. In the past month, have you felt depressed, sad, had crying spells or felt like you often needed to cry?	Depression	0.11
11. How often in the past six months, have you felt like screaming or yelling at your family member because of the way he/she behaved?	Safety	0.04a
12. How often in the past six months, have you had to keep yourself from hitting or slapping your family member because of the way he/she behaved?	Safety	0.05a
13. Is it hard or stressful for you to take care of basic household chores like cleaning, yard work, or home repairs?	Burden	0.02a
14. Do you feel strained, stressed, tense or anxious when you are around your family member?	Burden	0.007a
15. Is it hard or stressful for you to help your family member with basic daily activities like bathing, changing clothes, brushing teeth, or shaving?	Patient problem behaviors	0.003a
16. Providing help to my family member has made me feel good about myself.	Burden	0.75

Values with lowercase letter are statistically significant at $p \leq 0.05$

or dementia or being a caregiver of a person with Alzheimer's or dementia, an automatic display would prompt the nurse to give the caregiver a "Caregiver Packet," our primary recruitment tool. These prompts electronically created daily reports of admitted eligible patients for the FCP staff and were critical for self-evaluation of the program methodology. FCP staff was able to monitor daily the number of patients identified with Alzheimer's or dementia who met our target criteria and attempted to make personal contact with those families.

FCP staff worked with the Scott & White Nursing Clinical Development staff to develop ongoing training methods about the FCP which occurred through staff meetings, newsletters, and emails. Education of over 300 nurses in the main Scott & White hospital and over 65 nurses and 20 physicians occurred in the main clinic. The educational training had three objectives: (1) train nurses in techniques to identify family caregivers in ambulatory and inpatient care settings, (2) foster awareness of procedures for referring at-risk caregivers to the FCP, and (3) provide long-term maintenance strategies for incoming staff. In the FCP, structured implementation of new skills was facilitated by nurse educators who were assigned to each hospital unit. Program staff worked closely with nurse educators to facilitate on-the-job training and continuing education throughout their designated hospital units. Long-term maintenance of new skills was encouraged through the integration of project goals into nursing staff development programs, such as including information about the FCP into the general nursing orientation. This incorporation ensured that program education was given to all incoming nursing staff during the year. Outreach was also conducted with other staff members, including social workers and geriatricians, throughout the hospital and clinics.

Based upon suggestions from the nurse educators and managers, we systematically launched the program in three of the nine nursing units of the hospital which had the highest volume of geriatric patients. Throughout the rest of the year, the program was

strategically launched in all other units of the hospital. Similar to the hospital roll out, strategic dissemination of the FCP throughout the targeted primary care clinic occurred in phases with FCP staff working in collaboration with the nursing and physician staff.

Implementation—Of the enrolled caregivers, 68 % completed all treatment contacts (i.e., Family Resource Center visits and therapeutic phone calls). Table 6 describes the number of contacts and contact types for participants at the 6-month follow-up time point by risk level. On average, participants received four total contacts. As the level of risk increased, the number of total contacts increased from four (low risk), five (medium risk), and seven (high risk). Visits to the Family Resource Center also increased by risk level.

Maintenance—Maintenance involves the long-term effect of the program at the individual level and the sustainability of the program over time. At the individual level, an indicator of maintenance is satisfaction with the program. Over 82 % of caregivers said that they agreed the types of services offered to them and their care recipients were helpful, and over 98 % of caregivers reported that if they had questions, they knew where to get answers. In regard to the satisfaction with the quality of services provided by the FCP, 93 % of caregivers stated that help for them and their care recipients were provided in a caring and knowledgeable way. All caregivers reported that the information provided to them regarding the original REACH II intervention components was helpful, and they were satisfied with the phone contacts received from FCP staff.

At the institutional level, maintenance and sustainability of the FCP throughout the Scott & White Healthcare system has occurred through various mechanisms. Institutional support of the FCP, monetary, organizational, and verbal, continues to establish the FCP throughout Scott & White Healthcare. Ongoing education to the healthcare providers is conducted in staff meetings, hospital-wide presentations, and lunch seminars. At the nursing level, the FCP has been incorporated as a component of the

Table 6 | Contacts and contact types by risk level of participants with 6-month follow-up ($n=72$)

Variable	Total	Low Risk	Medium Risk	High Risk
Family Caregiver Program participants, n	72	34	35	3
Median (range) number of total contacts	4 (1-12)	4 (1-8)	5 (0-10)	7 (6-13)
Median (range) number of phone contacts	4 (1-10)	4 (1-6)	4 (0-9)	5 (5-10)
Median (range) number of FRC visits	0 (0-3)	0 (0-3)	1 (1-3)	2 (1-3)
Median (range) number of unscheduled total contacts	0 (0-5)	0 (0-3)	0 (0-6)	0 (0-6)
Median (range) number of unscheduled phone contacts	0 (0-5)	0 (0-0)	0 (0-5)	0 (0-5)
Median (range) number of unscheduled FRC visits	0 (0-3)	0 (0-3)	0 (0-2)	0 (0-1)
Median (range) number of unscheduled other contacts	0 (0-1)	0 (0-1)	0	0
Completed all scheduled contacts, %	68 %	71 %	65 %	67 %
Completed 75 % of scheduled contacts, %	87 %	90 %	81 %	100 %

FRC Family Resource Center

general nursing orientation, thus ensuring that education about the program is given to all incoming staff.

In 2011, Scott & White Healthcare invested \$150,000 in the Family Caregiver Program to promote continued growth of the program. As a result, the FCP has been expanded into two new service regions, allowing a more robust evaluation of our translation of REACH II. A treatment group will be compared with an education group. Those enrolled in the treatment group will receive the intensive 6-month follow-up intervention, while those enrolled in the education group will receive educational materials about Alzheimer's/dementia and caregiving. Pre- and post-measurements of the RAM and a comprehensive Quality of Life indicator will be given to both the treatment and education groups. The Quality of Life measure will include measures on caregiver burden, depression, social support, self-care and healthy behaviors, and problem behaviors of the care recipient. Caregivers will be enrolled in a similar way they are enrolled in the project presented here. Demographic information, pre-post measurements, and healthcare utilization will be collected on the caregiver.

DISCUSSION

This project demonstrates both the possibilities as well as the challenges of moving evidence-based interventions into clinical settings. Generous support from the Rosalynn Carter Institute Caregiver Program as well as supplemental support from Scott & White Healthcare allowed for the translation of the REACH II intervention materials into *A Caregiver's Notebook*, a format that was familiar to consumers of support services and one that could be widely disseminated. Likewise, the use of a brief risk assessment tool allowed a rapid introduction to the unique needs of each family. Understanding the needs of the caregiver allowed staff to tailor a plan that included all components of the REACH II intervention. Engaging caregivers in the intervention was facilitated by the Family Profile which directed caregivers to specific sections of *A Caregiver's Notebook*. Using the RAM as an outcome measure provided data that suggest that caregivers benefited from our approach of “repackaging” the REACH II intervention components. While the 16-item RAM was not used in the REACH II RCT, each of the quality of life domains used in the REACH II RCT outcome measure are represented on the RAM. The pre-post test comparison of the RAM demonstrated a significant reduction in the level of risk being experienced by caregivers.

Our decision to embed the REACH II intervention within an integrated healthcare system with limited grant support and no payer reimbursement strategy (i.e., this would not be a billable service) did result in significant changes in the number of therapeutic

contacts used to deliver the intervention, an inability to provide home visits and an abbreviated assessment strategy. These deviations from the original REACH II intervention represent limitations to our project; however, they provide additional evidence to the broader study of the translation of REACH II. Our experience suggests that caregivers were satisfied with fewer contacts and that staff often felt that the more limited number of contacts were sufficient to engage the caregivers in REACH II intervention components that were relevant to their situation. It is unknown if the reduced level of therapeutic contact would be sufficient to produce the positive change in the REACH II Quality of Life outcome measure given that measure was not included in this project. Our experience also suggests that caregivers would appreciate home visits and would be more likely to engage in therapeutic contacts if home visits were offered in addition to the clinic visits that were offered in this project. It is also important to note that our project did not provide the home video telephones and the telephone support groups provided in REACH II. The home video phone technology was no longer available, and the small number of participants served across a 2-year period reduced the feasibility of a telephone-based support group. Staff did, however, encourage caregivers to attend local support groups and, if appropriate, provided the informational contents of the telephone support groups to caregivers during therapeutic contacts.

In this article, we presented a translation of the REACH II intervention, an evidence-based support program for Alzheimer's and dementia family caregivers, into an integrated healthcare system. This model of implementation was successful, effectively reducing the risks associated with caregiving. As delineated using the RE-AIM framework, the implementation process required action at multiple levels of the organization, including building partnerships within and outside of Scott & White Healthcare. Ensuring that our program was designed to align with the existing Mission and Vision of Scott & White was critical to receiving buy-in from the leadership and management. For example, *A Caregiver's Notebook*, created in collaboration with the Scott & White Strategy and Marketing team, served not only as a vital resource to our individual caregivers but also as a branding tool on an organizational level, supporting the Mission and Vision of Scott & White Healthcare. Likewise, members of the Central Texas AAA, our community partner for the FCP, were needed to design the most efficient and effective method for receiving caregiver referrals. This ensured our caregivers received needed services beyond what our program was able to provide. The results of our expansion, which will compare the intervention to an education-only group, will only further test our implementation model and its effect on dementia caregivers' health and well-being.

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