

GERIATRIC RESEARCH, EDUCATION AND CLINICAL CENTER

Annual Report: Fiscal Year 2006

Part II: Accomplishments

NOTE: The **GRECC Annual Report** reflects status and accomplishments of **GRECC Core Staff** * (as defined below) only. The **“Report Year”** is from October 1, 2005 through September 30, 2006.

You are welcome to use this report format for your own internal reporting purposes, in which case you may exceed the recommended limits of numbers of responses and their length (“list no more than...” “Describe the three most important...” “limit your response to five lines or fewer”)

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Please limit to ten pages or fewer the version SUBMITTED TO VACO .

***GRECC Core Staff** is limited to either **Primary Core**, **Affiliated Core**, or **Research Core**:

- **Primary Core** = positions authorized by the original GRECC allocation plus any addition in ceiling from VA Central Office specifically designated for GRECC.
- **Affiliated Core** = Staff who work full- or part-time in direct support of the GRECC’s research, education or clinical activity.
 - May be either “contributed” by the VA Medical Center or
 - May have been acquired through centralized enhancements/awards for programs (e.g., Home-Based Primary Care, Geriatric Evaluation and Management Program, etc.)
 - To be considered Affiliated Core, staff must be organizationally aligned under the GRECC or specifically identified by the Medical Center as **“GRECC-affiliated staff.”**
- **Research Core** = Full-or part-time staff who devote 51% or more of their total time to GRECC research and whose salaries are supported by research funds (either VA or non-VA). Includes all GRECC staff whose salaries are paid from research funds, e.g.:
 - Associate Investigator
 - Assistant Research Scientist
 - Senior Research Career Scientist
 - Research Career Scientist
 - Advanced Research Career Scientist.

IMPORTANT: Throughout this report, please **AVOID/MINIMIZE JARGON**. Each response is **much more likely to be included in secondary communications derived from the Annual Reports if it can be readily understood by a non-technical readership.**

1. GRECC NAME/LOCATION

- a. **GRECC Name:** SLC GRECC
- b. **Location** (*Salt lake City, VISN*): VASLCHCS, UT, VISN 19

2. CONTACT PERSON

- a. **Name:** Charlene R. Weir, Ph.D.
- b. **Position:** Associate Director Education and Evaluation, GRECC
- c. **Phone, e-mail:** 801-582-1565, ext 5114; Charlene.weir@med.va.gov

3. GRECC FOCUS AREA(S)

NOTE: Please succinctly list your GRECC's Focus Area(s), one per line below. After each focus area listed, please indicate with a check mark (✓) which of the research type(s) suitably describes the work conducted (including planning, implementation, analysis, and dissemination/publication) within that focus during the Report Year. Add additional lines by positioning your cursor at the lower right side of the table and striking the "Tab" key.

GRECC Focus Area	Research Type				
	Basic Biomedical	Applied Clinical	Health Services	Rehabilitation	
Altered inflammatory status in peripheral tissues and in the brain	X				
Emphasis on interactions among cholinergic systems, inflammatory cytokine systems and anti-inflammatory modalities	X				
Patient-oriented studies to determine neurohumoral and genetic characteristics of geriatric hypertension and contributors to vascular stiffness		X			
Testing interventions to improve outcomes			X		
Acquiring new knowledge about care and disease processes			X		
Medical informatics and computerized clinical systems with respect to decision support tools and collection of data for surveillance, analysis, and program evaluation.			X		

4. ADMINISTRATION

a. **GRECC Impact on Host VAMC in Report Year:** *list the most important ways in which the GRECC has had specific impact on host VAMC's research, staff education, program evaluation, or clinical care improvements for elderly veterans (i.e., how the GRECC has "made a difference" in these areas within the entire host VAMC) during the Report Year. Please limit your response to 5 or fewer "ways"; and please limit your description of each of the five "ways" to five lines or fewer.*

- **G-HELP:** The Geriatric High-risk Evaluation and Liaison Program targets the transition of frail older adults with previous patterns of high resource utilization. The team identifies patients in the hospital, emergency room, and clinic settings and provides a multidisciplinary evaluation within 72 hours of referral. Targeted areas for evaluation include pharmacy, specific education concerning medical conditions, decision-making capacity, and home safety. Evaluated patients receive various types of care coordinating services.
- **Care Coordination Telemedicine Systems:** GRECC was instrumental in the successful application of a VISN 19 grant to implement a Care Coordination system at the local station. The grant provides approximately 3 FTEE to assist with staffing. This year Telemedicine has seven FTEE. The care coordination system uses CPRS to identify high resource utilization patients for enrollment. There is an average daily census of 320 high-risk patients who receive coordinated care utilizing numerous methods. Dr. Byron Bair is the Medical Director of this program.
- **Poly-pharmacy Telemedicine:** Most telemedicine tracking systems focus on single disease entities, while most veterans have multiple simultaneous disease processes. The poly-pharmacy module of care coordination allows tracking symptoms and pharmacy issues regardless of specific diagnoses. Patients are targeted based on previous high resource utilization. In addition to tracking symptoms and pharmacy, pharmaco-economic issues are addressed, such as redundant medications and refilling of discontinued medications. VISN calculations showed a 2.3 million dollar cost avoidance during the previous year of implementation.
- **MOVE Program:** The GRECC has been highly instrumental in creating, implementing, and evaluating the

MOVE Obesity and Exercise Program at VASLCHCS. GRECC staff assisted in the development and testing of key program quality indicators to monitor the Program as well as analyzing the results for presentation to national VA audiences. In addition, the GRECC assisted in the provision of educational materials for house-staff, primary care staff, and nursing.

- **FALLS Program:** GRECC staff initiated a falls education and intervention planning committee in collaboration with the local VA Patient Safety office. GRECC staff were responsible for conducting literature reviews on research on fall interventions, distributing the AGS new guidelines on falls analyzing pre-intervention incident reports on falls, and implementing a local education program on falls that included a conference and the distribution of educational materials.

b. **GRECC Impact on VISN in the Report Year:** *list the most important ways in which the GRECC has had specific impact on the host VISN's research, staff education, program evaluation, or clinical care improvements for elderly veterans (i.e., how the GRECC has "made a difference" in these areas within the entire host VISN) during the rating period. Please limit your response to 5 or fewer "ways"; and please limit your description of each of the five "ways" to five lines or fewer.*

- **Geriatrics Steering Committee:** The SLC GRECC assumed a leadership role on the VISN Geriatrics Steering Committee in the capacity as chair and in terms of specific projects. This committee addresses issues concerning geriatrics for the VISN. The VISN Geriatrics Steering committee planning session was held in conjunction with the GRECC annual clinical conference this year. The GRECC has direct impact on VISN policies concerning Geriatrics via this VISN committee structure.
- **VISN Education Committee:** The SLC GRECC actively participates in the VISN 19 Education Committee. The Committee establishes priorities for education initiatives within VISN 19, identifies educational implications of the VISN strategic plan and provides feedback to VISN leadership regarding educational issues. GRECC participates in geriatric educational needs assessments and advises on geriatric related educational programs.
- **MMSE alternative:** Since the MMSE is copyrighted, the VA has discontinued its use. The GRECC assisted in a multi discipline effort to come up with a suitable alternative. The Montreal Cognitive Assessment (MoCA) is being piloted for this purpose. It is in public domain and not subject to the copyright issues of the MMSE. Compared to the MMSE, the MoCA has much better sensitivity to detect both minimal cognitive impairment and dementia (18% vs. 90% and 78% vs. 100% respectively).
- **National Gero-Psych Satellite Presentations:** Four nation-wide satellite programs were produced in conjunction with EES and GRECC faculty in FY2005. These programs were presented live nationally and then repeated four times each. The content for each put on CD ROMs and distributed this past year.
- **Rocky Mountain Geriatric Conference:** The 4th Annual Rocky Mountain Geriatric Conference was held September 21-23rd in Park City, UT. It was advertised widely throughout VISN 19. Seventy-three physicians, nurses, psychologists and social workers attended. Sixty-six percent of the attendees were from the VA. Evaluations were very positive.

c. **GRECC Trend-Setting Innovations since October 1, 2001:** *list the most significant GRECC research, education or clinical innovations in the past five years. For each item, provide date or date range, GRECC core staff responsible, and a description. Please limit your response to 5 or fewer innovations; and please limit each of the five innovation descriptions to five lines or fewer.*

- **Targeted Research Enhancement Program (TREP).** The TREP program application was initiated by John Hurdle, Ph.D and Jonathan Nebeker, MD, as co-PIs with collaboration from Charlene Weir, PhD, Jennifer Hoffman, PharmD, and Byron Bair, MD. The name for the TREP is IDEAS (Informatics, Decision Enhancement, and Surveillance) and the current director is Matt Samore, MD. IDEAS has energized Health Services Research both in the GRECC as well as in SLC VAMC in general. It has also strengthened the relationship between the University of Utah and the VA by increasing collaboration and research interactions.

- **G-HELP:** The Geriatric High-risk Evaluation and Liaison Program targets frail older adults in transition using previous patterns of high resource utilization from administrative data. The team identifies patients in the hospital, emergency room, and clinic settings and provides a multidisciplinary evaluation within 72 hours of referral prior to discharge. Targeted areas for evaluation include pharmacy, specific education concerning medical conditions, decision-making capacity, and home safety. Evaluated patients receive various types of care coordinating services. G-HELP was initiated by Dr. Byron Bair with the assistance of Carol Hughes, NP and James Brandy, SW .
- **Guidelines for Pharmaceutical Management of Dementia:** As part of a VISN level effort to achieve consensus on the appropriate use of expensive medications used to treat dementia, the GRECC produced a guideline containing recommendations for the use of acetylcholinesterase inhibitors and memantine. This guideline contained suggestions about the appropriate clinical assessment to determine whether drug initiation should take place and described how the drugs should be initiated. Most importantly, this guideline contained tools for partnering with patients and caregivers to determine the therapeutic benefit of these medications, with accompanying suggestions for discontinuing, switching, or using these medications in combination.
- **Identification of the role of Cytokines dys-regulation in the functional decline of neurons with age.** SLC GRECC investigators have over the last five years contributed significantly to our understanding of the relationship between age-related changes in immune system and the effectiveness of the neuronal function. Our results show that as the production of inflammatory cytokines increases with age, they are associated with poorer assembly of neuronal acetylcholine receptor (nAChR) pathway receptor sites. Changes in how nAChRs are assembled directly impact their function. This relationship between the dys-regulation of cytokines with aging and poor nAChRs receptor site function may be a core mechanism in the decrease of neuronal functions with aging.

5. RESEARCH

a. **Key Findings Published in the Report Year on projects for which GRECC Core Staff was PI or Co-PI:** *List five or fewer; for each item provide GRECC Core Staff name(s), journal reference, and description of topic/ method/results/clinical significance. Please limit each response to 5 lines or fewer.*

1. **Key Finding:** Mouse strains, like individuals, produce neurochemical receptors that respond differentially to drugs used to treat Alzheimers. The receptors in question are those that respond to nicotine and are known as *neuronal nicotinic acetylcholine receptors* (nAChR). The overall number of nAChR decreases with age, but for most individuals, nicotine induces an increase in the functional activity of these receptors. Our mouse studies show that there is a genetic basis to this effect, with individuals varying in the intensity of response as well in the location of where nAChRs are developed. In nicotine-susceptible strains, nAChRs are developed mostly by neurons in the hippocampus (the part of the brain required for learning and memory and susceptible to destruction in age related cognitive decline such as Alzheimer's disease). In non-nicotine susceptible strains, nAChRs are more likely to be developed by the astrocytes. Therefore, in addition to differences in metabolism or receptor activation by nicotine, there are basic genetic differences that alter nAChR expression by major cell types of the brain. These results suggest that therapeutic treatment of cognitive decline through drugs affecting this receptor system must consider individual genetics.

GRECC Core Staff: Scott Rogers (P.I.) and Lorise Gahring (Co-P.I.)

Publications:

Gahring LC and Rogers SW. Neuronal Nicotinic Acetylcholine Receptor Expression, Aging and Mouse Strain-Specific Hippocampal Cytoarchitecture. Proceedings of the II International Congress on Neurodegeneration. *Neurologica* 10:37-46, 2006.

2. **Key Finding:** Age-related dysregulation of inflammation directly affects normal neurotransmission. Cytokines, such as interleukin-1 (IL-1) and tumor necrosis factor (TNF), are produced during the inflammatory process by immune system cells. Inflammatory cytokine production aids in fighting infection as well as signaling to the brain that an infection is occurring. As we age, our immune system both produces too many cytokines as well as

producing more that are ineffective. Besides altering the inflammation process, aging also impacts the effectiveness of the neuronal acetylcholine receptor (nAChR) pathway. GRECC researchers have investigated the connection between the dys-regulation of these two systems in aging. Our results show that as the production of inflammatory cytokines increases with age, they are associated with how nAChRs receptor sites are assembled. Changes in how nAChRs are assembled directly impact their function. This relationship between the dys-regulation of cytokines with aging and poor nAChRs receptor site function may be a core mechanism in the decrease of neuronal functions with age.

GRECC Core Staff: Lorise Gahring (P.I.) and Scott Rogers (Co-P.I.)

Publications:

Gahring, L.C., E. L. Days, T. Kaasch, M. Gonzalez de Mendoza, L. Owen, K. Persiyanov, and S. W. Rogers. 2005. Pro-Inflammatory Cytokines Modify Neuronal Nicotinic Acetylcholine Receptor Assembly. *J. Neuroimmunology* 166: 88-101.

3. **Key Finding:** Neuronal nicotinic acetylcholine receptors expressed peripherally may alter normal metabolic function in young and aged animals. The loss of nicotine receptors (nAChR) expression with age in the brain is a major correlate of age-related cognitive decline and the progression of Alzheimer's disease. Nicotinic receptors (nAChR) have been thought to be expressed or produced largely by neurons. As a result, retention of nAChR expression and function is the principal target of drugs designed to intercede with these undesirable age-related pathologies, and this has been an active area of investigation by our GRECC. Recently, our studies have expanded to examine the expression of nAChRs in peripheral, non-neuronal cells, and have found significant age-related changes in non-neuronal tissues as well. These findings have implications for the age-related changes associated with metabolic syndrome.

GRECC Core Staff: Lorise Gahring (P.I.) and Scott Rogers (P.I.)

Publications:

Gahring, L.C. and S.W. Rogers. 2006. Neuronal Nicotinic Acetylcholine receptor expression and function on non-neuronal cells. *AAPS Journal* 7(4) E885-E894.

4. **Key Finding:** It has recently been proposed that myelin injury could be an important early contributor to the pathogenesis of Alzheimer's disease. The myelin sheath is produced by oligodendrocytes and wraps around neurons. It is necessary for normal neurotransmission. In this research, we have examined the role of the inflammatory enzyme cyclooxygenase 2 (COX-2) in myelin injury. COX-2 has been suggested to be an important contributor to neuronal death and is the target of many commercially available drugs such as 'Celebrex' and 'Vioxx.' In one study we found that COX-2 is expressed by the cells (oligodendrocytes) that produce the myelin sheath and is disrupted in multiple sclerosis (MS). COX-2 expression increases at the initiation of myelin loss and was present in dying oligodendrocytes. In another study, COX-2 was found associated with other inflammatory enzymes in optic nerve autopsy tissue from a patient with optic neuritis. This association of COX-2 with myelin injury may have important implications with respect to aging-associated neurodegenerative diseases, particularly Alzheimer's disease.

GRECC Core Staff P.I: Noel Carlson

Publications:

- 1) Carlson N.G., K.E. Hill, I Tsunoda, R.S. Fujinami, J.W. Rose. 2006. The pathologic role for COX-2 in apoptotic oligodendrocytes in virus induced demyelinating disease: Implications for multiple sclerosis. *Journal of Neuroimmunology* 174(1-2):21-31.
- 2) Carlson N.G. and J.W. Rose. 2006. Antioxidants in multiple sclerosis: Do they have a role? *CNS Drugs* 20(6): 433-441.

d. **Key Findings Published in the Report Year on work in which GRECC Core Staff served as Co-Investigators to a Non-GRECC PI:** List five or fewer; for each item provide GRECC Core Staff name(s), journal reference, and description of topic/method/results/clinical significance. Please limit each response to 5 lines or fewer.

- 1) **Key Finding:** Optic neuritis (ON) is a demyelinating inflammation of the optic nerve that may occur as an

isolated disease or may be related to multiple sclerosis (MS). Currently, there is little evidence of whether the immuno-histochemistry of ON resembles that of typical cerebral MS lesions or has other characteristics. For this study, a single case was examined. The immunohistochemistry of this case of optic neuritis was found to be highly similar to the cerebral lesions of MS in showing abnormally high levels of iNOS and nitrotyrosine as well as other mediators of immune damage.

GRECC Core Staff Co-PI: Noel Carlson

Publications:

Tsoi V.L., Hill, K.E., Carlson N.G., Rose J.W. 2006. Evidence for Inducible Nitric Oxide Synthase and Peroxynitrite Mediated Damage in Optic Neuritis. *Journal of Neuro-Ophthalmology* 26:87-94.

- 2) **Key Finding:** Over-prescribing of antibiotics for acute respiratory tract infections in community settings is pervasive. The effectiveness of a computerized decision-support (CDSS) intervention combined with community education was compared to community education alone. The results showed that the CDSS produced significant decreases in inappropriate prescribing as compared to the community education alone.

GRECC Core Staff Co-PI: Rand Rupper

Publications:

Samore MH, Bateman K, Alder SC, Hannah E, Donnelly S, Stoddard GJ, Haddadin B, Rubin MA, Williamson J, Stults B, Rupper R, Stevenson K. Clinical decision support and appropriateness of antimicrobial prescribing: a randomized trial. *JAMA*. 2005 Nov 9; 294(18): 2305-14.

- 3) **Key Finding:** Adverse events from the use of drug-eluting coronary stents may be more severe than previously known. In a review of all available cases (n= 5,783) of hypersensitivity reactions after placement of a drug-eluting stent (DES), 262 unique events included hypersensitivity symptoms. Of these reports, 2 were certainly and 39 unlikely caused by clopidogrel and 1 was certainly, 9 probably, and 13 unlikely caused by the DES. From all sources, we identified 17 distinct cases that were probably or certainly caused by the stent, of which 9 had symptoms that lasted longer than four weeks. Four autopsies confirmed intra-stent eosinophilic inflammation, thrombosis, and lack of intimal healing. DES may be a cause of systemic and intra-stent hypersensitivity reactions that, in some cases, have been associated with late thrombosis and death.

GRECC Core Staff Co-PI: Jonathan Nebeker

Publications:

Nebeker JR, Virmani R, Bennett CL, Hoffman JM, Samore MH, Alvarez J, Davidson CJ, McKoy JM, Raisch DW et al. Hypersensitivity cases associated with drug-eluting coronary stents: A review of available cases from the Research on Adverse Drug Events and Reports (RADAR) project. *Journal of American College of Cardiology*. 2006, 47 (1): 175-181.

6. EDUCATION

NOTE: DO NOT list trainee and conference data here--those data are reported in the GRECC Electronic Database. **NOTE:** You may list educational activities here even if they were supported by funds that qualified for inclusion in the ePROMISE (RDIS) database if you wish.

- a. **Innovations in Educational Activities Implemented during the Report Year** (list five or fewer. Please limit each item to 5 lines or fewer and include clarification of how each activity is innovative.)
1. **Regional Rocky Mountain Geriatric Conference.** A three-day conference was held Deer Valley in September and was attended by more than 80 individuals, from over 7 states. The topic focused on controversial issues in dementia by national leaders in the area. The topics ranged from the value of imaging in diagnosing dementia to behavioral management techniques. Evaluations were overwhelmingly positive.
 2. **FALLS program.** The GRECC organized a presentation and seminar on falls consisting of physical therapists, patient safety representatives, social work and included a presentation on the newest research in the area by a nationally known Nursing leader on falls. The video plus power-point, bibliography and additional material were distributed to the Patient Safety Office at the local VA and is available for further distribution.

3. **Quality Improvement and Evidence-Based Practice Curriculum.** GRECC staff developed and implemented a 2-part series targeted at nurses and social workers at the local VAMC. The series of seminars included lectures with power-point presentations, group discussion and analyses of pilot projects.
4. **Web-linked educational content.** The SLC GRECC web site was updated and integrated with the local VAMC website in order to increase access to geriatric educational opportunities. Educational announcements, web links and newsletter links were installed. The Web site is still under construction.
5. **Educational Needs Assessment Questionnaire on Obesity/Fitness in the Elderly** for primary care providers regarding Obesity and Fitness in the Elderly has been developed, piloted and validated locally and will be distributed to the VISN this fiscal year.

b. Exportable Educational Products First Available for Distribution in Report Year *List five or fewer of the most important products. For each item, limit the response to five lines summarizing content, target audience, format, and product evaluation plan and results. Include educational products developed in previous years ONLY if this is the first year they have been available for distribution.*

1. **Delirium Internet Training Module:** Two learning modules were created on the assessment, treatment and management of patients with acute mental status changes in the inpatient setting. The program was incorporated into mandatory Nursing Competencies and updated for the second year.
2. **Falls Video Lecture:** Video of Dr. Ginny Pepper entitled “Update on Research Findings on Falls in the Elderly” is available for copy and distribution.
3. **Orientation to Aging:** A 15-minute orientation to issues of aging entitled “The Aging Veteran: Orientation and Issues that is currently given to all New Employees to the VA has been updated and includes: a) Safety; b) Communication; and c) Demographics.

7. CLINICAL DEMONSTRATION PROJECTS

NOTE: A clinical demonstration program is defined as:

- an ongoing, clinical, cooperative collaboration between the GRECC and host VA medical center;
- that carries out and evaluates assessment strategies, management approaches and/or specialized investigations
- of a targeted or focused group of elderly patients
- with the intention that findings will be disseminated for the advancement of the field.

A clinical demonstration program is comprised of one or more clinical demonstration projects, each of which is defined as

- a set of one or more clinical activities
- integrated and coordinated under a specified protocol
- designed to permit evaluation(s) of processes and/or outcomes.

Evaluation of a clinical demonstration program may be a comprehensive assessment of the activity and/or the clinical outcomes. Alternatively, evaluation may concentrate on a prioritized and feasible set of more focused or specific, project-related questions, e.g. related to improved diagnosis, quality of care, patient satisfaction, drug compliance, functional status, etc. Ongoing and subsequent modifications of the care model may also be evaluated as may be the practicability and outcomes of exporting new clinical models or variations of models to general care settings and/or smaller, more resource-limited VA medical centers or outpatient facilities.

a. **Clinical Demonstration Projects Underway in Report Year:** *list all GRECC Clinical Demonstration Projects underway. For each item, indicate whether New or Ongoing in Report Year. You may include up to five lines of descriptive text for each Project.*

NOTE: The number of Projects listed should be equal to the number of Clinical Demonstration Projects you have listed and named in the GRECC Electronic Database.

1. **GHELP – (O)**: The Geriatric High-risk Evaluation and Liaison Program targets frail older adults in transition with previous patterns of high resource utilization. The team consists of a NP, SW with Geriatrician supervision. The team targets patients in the hospital, emergency room, and clinic settings. Administrative data is used in addition to referral to identify patients for intervention. Targeted patients receive a multidisciplinary evaluation within 72 hours of referral. Areas of evaluation include pharmacy use, appropriateness, education concerning medical conditions, decision-making capacity, and home safety.
 2. **Poly-pharmacy Telemedicine (O)**: Most telemedicine tracking systems focus on single disease entities, while most veterans have multiple simultaneous disease processes. The poly-pharmacy module of care coordination allows tracking symptoms and pharmacy issues regardless of specific diagnoses. Patients are targeted based on previous high resource utilization. In addition to tracking symptoms and pharmacy, pharmaco-economic issues are addressed such as redundant medications and refilling of discontinued medications along with others. This innovation continues to expand.
 3. **Geriatric Med / Psych Inpatient Unit (O)**: This unit is now functioning to address the needs of frail older adults on inpatient units within the host VA. Patients are targeted by a review of high cost resource utilization. These patients are then evaluated for interventions focused on polypharmacy, diagnostic appropriateness, and illness education. Since initiation of this inpatient unit “intermediate” bed average length of stay has decreased an average of 12.7 days to 4.3.
 4. **Care Coordination / Telemedicine System (O)**: The GRECC was instrumental in establishing the Care Coordination program at the host VA. Patients are targeted with high resource utilization and provided intense follow-up remotely and tracked for changes in resource utilization. This is a multidisciplinary approach that includes medicine, surgery, and psychiatry.
 5. **Dementia Treatment Tracking Clinic (N)**: This clinic is developing within the structure of the Geriatric Primary Care Clinics. It is designed to improve clinic efficiency and provide improved care to veterans with dementia. A Coumadin clinic model is used and PharmD’s track the effectiveness of FDA approved treatments for dementia in a real world setting. It is hoped that we will obtain formal funding.
- b. **Evaluation of Clinical Demonstration Projects:** *for each GRECC Clinical Demonstration Project listed in 7a above, summarize the evaluation activity. If no evaluation results are available, be explicit as to the focus of the planned evaluation, and when it is anticipated to occur. If the project has been completed during the Report Year, provide key findings and their significance..*
1. **G-HELP (QI)**: 4-6 consults are received daily. Over 750 patients have been seen over the past year. After intervention, G-HELP patients showed a favorable difference in health care utilization at 6 months and 1 year. ER utilization decreased by 12% at 6 months and 44% at one year. Hospitalization decreased by 35% at 6 months and by 53% by 1 year. Total bed days of care decreased by 51% at 6 months and 68% by 1 year.
 2. **Poly-pharmacy Telemedicine (QI)**: This is being evaluated as a quality improvement project. Over 3000 separate symptoms and patient preferences are being tracked and linked to medication regimes. Patients enrolled in the Poly-pharmacy Telemedicine care coordination program showed an increase of daily medication compliance (the number of days when all medications were taken correctly) from 2.3 % on admission to 97.7% after enrollment. Utilization of the ER and primary care clinics decrease while hospitalizations remained constant. Emotional and physical health perceptions showed no decline over a 3-year period. VISN 19 calculations indicated a 2.3 million dollar cost avoidance on enrolled patients.
 3. **Geriatric Med / Psych Inpatient Unit (QI)**: Unit effectiveness is measured in terms of reduction of bed days of care (BDOC) for inpatient designation for intermediate beds. This unit decreased BDOC from an average of 12.7 days to 4.3 days. It continues to be an effective way to help manage inpatient bed utilization.

4. **Care Coordination / Telemedicine System (QI):** This project has shown favorable impact on medication compliance, compliance with patient performance measures and patient satisfaction. Medication compliance increased by 95%, patient performance measures by an average of 8.5%. Patients participating in this project had a 98.4% satisfied rating and patients reported a greater satisfaction with their primary care provider even though there was downward trend in outpatient clinic utilization.
5. **Dementia Treatment Tracking Clinic Evaluation:** Evaluation protocols and measures are now being developed and implemented.

c. **New Clinical Models developed at your GRECC that were exported in the Report Year** (*list up to five examples, up to two lines each; provide name of new clinical model, name of VA or non-VA facility to which it was exported, and method of export, such as "Falls Clinic protocol sent to X VAMC"*):

1. **Dementia Treatment Tracking Sheet:** This sheet assists clinicians evaluating effectiveness of FDA dementia treatments using a modification of the CIBI +plus tool. It has been exported electronically to VISN 19 sites and is available on the SLC GRECC web site and continues to be available.
2. **Early Screen for Impaired IADL Tool:** This tool was developed to be used in the clinic waiting room and evaluated by the clinician during the visit. It focuses on functional (IADL) changes over the past 5 years. It is available on the GRECC web site and is continuously exported.
3. **Dementia and Firearms Assessment and Tracking Protocol:** The GRECC, in conjunction with the VISN Geriatric Committee, has developed protocols for assessing and tracking a clinician's determination of decision-making capacity regarding the use of firearms. Tools are being developed for use throughout VISN 19 and have been alpha tested at the Salt Lake City and Sheridan VAs. These tools have been distributed to the region and are available on the web site nationally.
4. **Dementia and Driving Assessment and Protocol:** The GRECC, in conjunction with the VISN Geriatric Committee, developed protocols for assessing and tracking a clinician's determination of decision-making capacity regarding the use of firearms. Tools are being developed for use throughout VISN 19. These tools have been distributed to the VISN and are available on the web site nationally.

8. CONSULTATION AND OUTREACH

NOTE: **Consultation** = GRECC staff going to sites **within host VAMC** or having those staff come to the GRECC, to assist in development of research, education or clinical programs at those sites. **Outreach** = GRECC staff going to **non-host VAMC facilities** or having those staff come to the GRECC (in person or by video or other technology) to assist in development of research, education or clinical programs at those sites.

- b. **Current Year Activity Outcomes** (*list up to five examples, up to two lines each; summarize specific outcomes realized from current year consultation, e.g., "Host VAMC instituted a Falls Clinic after consultation from GRECC staff;" or outreach, e.g., X VAMC instituted a Falls Clinic after GRECC outreach via series of videoconferences*):
 1. **Comprehensive Geriatric Clinic.** The SLC GRECC consulted with the Grand Junction VA concerning the establishment of a Comprehensive Geriatric Outpatient clinic in conjunction with Denver VA. We also established a tie for ongoing consultation as needed.
 2. **Dementia and Patient Safety.** We had continuing consultation with Sheridan VA concerning the development of the Driving and Firearms and dementia CPRS protocol. The protocol was further modified to make it easier to complete in a primary care clinic setting.
 3. **Geriatrics Conference.** The SLC GRECC and Denver VA continued a collaborative effort to host a national Geriatrics Conference in conjunction with the University of Utah and University of Colorado. Many regional and national VA sites, including Salt Lake, Denver, Boloxi, Miles City, Jackson, and Little Rock were directly

influenced via this 3 day event hosted in Park City, UT.

4. **HBPC Consultation**. The Salt Lake City GRECC also provided consultation concerning HBPC to the Leavenworth Kansas VA. This was a new HBPC program in Kansas and the GRECC volunteered to provide medical consultation for the new HBPC program.
5. **Delirium Research Project**: Dr. Wes Ely from Nashville GRECC consulted with GRECC staff in order to submit a multi-site grant for funding through the VA. This grant was funded and preparations for data collection are under way. The SLC VAMC is a study site and Dr. Supiano is on its Advisory Committee.

b. **Previous Years' Activities Outcomes** (*list up to five examples, up to two lines each; summarize specific outcomes realized from previous years' **consultation** to host VAMC or **outreach** to non-host facilities, where results were first realized in the current year.*)

1. **Dementia and Patient Safety**: The development of screening and assessment protocols for dementia and firearms were developed, adopted and finally distributed.
2. **Delirium QI Project**: The implementation of a delirium protocol program was implemented at the SLCVAMC. Few used the protocol and it is now under revision.
3. **The Nursing Research Program** at the VA conducted several educational programs to improve skills in Evidence-Based Practice.