NOTE: The GRECC Annual Report reflects status and accomplishments of GRECC Core Staff (as defined below) only. Report year is from October 1 through September 30. This Accomplishments report should be no more than a total of ten pages.

GRECC Core Staff includes Primary Core, Affiliated Core, and 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 acquired through centralized enhancements/awards for programs such as 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).

1. GRECC NAME/LOCATION
   a. GRECC Name: VISN 19 GRECC
   b. Location (Salt lake City, VISN): Salt Lake City, 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: Each problem area should ideally be approached from the basic biomedical, clinical and health services research perspectives, as well as from the rehabilitation research perspective where that expertise exists. The number of problem areas should be limited to one or two. If the focus of research is different for basic biomedical, clinical, health services and/or rehabilitation research, there should be no more than a total of 4 major areas of investigation. Changes to GRECC focus area(s) must be approved by VACO (114).
   - Basic Biomedical: Cellular biology/physiology of cell proliferation, cytokines & immunity during aging.
   - Health Services: Real-time quality assurance
   - Rehabilitation:

4. ADMINISTRATION
   a. GRECC Impact on Host VAMC in Current Year (list up to five most important ways in which the GRECC has had specific impact on host VAMC research, staff education, program evaluation, or clinical care improvements for elderly veteran, i.e., how the GRECC has “made a difference” in these areas within the entire host VAMC; up to five lines each):
      - 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.

Reviewed: 4/13/2009
Care Coordination 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. The care coordination system uses CPRS to identify high resource utilization patients for enrollment. Currently, we have 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. The program has received $350,000 for FY2005 to expand the program.

Palliative Care Program: The GRECC has been highly instrumental in creating, implementing, and evaluating the Palliative Care Program at VASLCHCS. GRECC staff assisted in the development and testing of key program quality indicators to monitor the Palliative Care 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.

Acute Mental Status Changes Clinical Protocol: SLC GRECC staff worked closely with representatives from the Mental Health care center and the SLC VAMC Patient Safety Office to develop and test a protocol for the detection and management of Acute Mental Status Changes in the inpatient setting. The GRECC created and disseminated training materials that were accessible to all clinical staff in the VA through the VISN internet educational program, called “MyPeak”. In addition, the educational material was adopted as a key component of mandatory training for Nursing Staff throughout the SLC VA. The protocol is currently in process.

b. GRECC Impact on VISN in Current Year (list up to five most important ways in which the GRECC has had specific VISN-wide impact on research, education/training, program evaluation, or clinical care improvements for elderly veterans, i.e., how GRECC participation in VISN-wide activities has “made a difference” in these areas within the entire VISN; up to five lines each. NOTE: GRECCs are intended and expected to serve as a regional, and not merely local resource):

Geriatrics Steering Committee: The SLC GRECC assumes 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 committee includes representatives from all of the local stations within the VISN. In this role, the GRECC has direct impact on VISN policies through several visible reporting mechanisms, including Action Reports submitted on a regular basis to the VISN Strategic Planning Committee.

Dementia Driving & Firearms Protocol: The GRECC took the lead to coordinate a response for the VISN regarding a Dementia Driving & Firearms Safety initiative. All state laws within VISN 19 were tabulated concerning dementia, driving, and firearms. A simple CPRS reminder tracking system was then developed and coupled with assessment templates to be used in primary care. These recommendations were approved and will be implemented VISN-wide. In addition, the GRECC developed educational materials to support the implementation of these protocols to be distributed throughout the VISN. Finally, the GRECC will be involved in evaluating the program by through usage and patient outcome data.

GRECC Clinical Conference for CME contact: The GRECC Clinical Conference PolyComm is a monthly conference on geriatric topics presented at the Salt Lake City VA and teleconference to four or more VISN sites. Educational grants to the GRECC originally allowed for the purchase of the equipment and the VISN Educational Committee endorsed the activity. CME for the activity is provided through the University of Utah. Live interaction with GRECC staff is encouraged during these presentations. These presentations may also be videotaped by the distant sites for later use.

Reviewed: 4/13/2009
National Gero-Psych Satellite Presentations: Four nation-wide satellite programs were produced in conjunction with EES and GRECC faculty. These programs were presented live nationally and then repeated four times each. These presentations were well-received with overwhelmingly positive evaluations and a total of more than 294 viewers from 85 different VA sites.

c. GRECC Trend-Setting Innovations since October 1, 1999 (list up to five most significant GRECC research, education or clinical innovations in past five year; for each item, provide date, GRECC staff responsible, and up to five line description):

- **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 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 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 Rebecca Mabe, SW (affiliated GRECC staff).

- **Dementia Driving & Firearms Protocol:** The GRECC took the lead to coordinate a response for the VISN regarding a Dementia Driving & Firearms Safety initiative. All state laws within VISN 19 were tabulated concerning dementia, driving, and firearms. A simple CPRS reminder tracking system was then developed and coupled with assessment templates to be used in primary care. These recommendations were approved and will be implemented VISN-wide. In addition, the GRECC developed educational materials to support the implementation of these protocols to be distributed throughout the VISN. Finally, the GRECC will be involved in evaluating the program by through usage and patient outcome data.

- **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.

5. RESEARCH

a. **Key Findings Published in Current Year – GRECC Core Staff as PI or CO-PI** (list up to five; for each item provide GRECC Core Staff name(s), journal reference, and up to five line description of topic/method/results/clinical significance; use layperson language):

1. **Key Finding: The impact of inflammation on the aging brain.** Inflammation is a prominent feature of the aged brain. Many normal components of neuronal survival are dysregulated with age including inflammatory cytokines and transcriptional mediators involved in induction of inflammatory cytokines. In the two publications listed we have described, in either a mouse model of aging or in tissue culture, the effects of aging and inflammation on the expression of neuronal nicotinic acetylcholine receptors (key regulators of cognition and neuronal survival). These results hold clinical significance toward determining how to better control the inflammatory processes in the aged brain.

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

Reviewed: 4/13/2009
Key Finding: Individual Differences in Response to Aging. Aging has certain commonalities and yet some very distinct differences based on individual genetics. We can measure these individualized responses through the use of mouse strains (each strain representing a different genetic composition). We have determined that mouse strains differ substantially in age-related loss of neuronal nicotinic acetylcholine receptors. The clinical significance of this lies in defining the range of loss of neuronal receptors of different individuals with age and the effect to which the response may be predicted.

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

Key Finding: Self-Reported Delays Do Not Predict Mortality of Functional Decline. Delays in care can result in a variety of negative outcomes. In a longitudinal cohort study, where 12% of a sample of 4,162 individuals over the age of 65 reported delaying care very often. However, self-reported delays in care was not associated with mortality or functional decline even after controlling for multiple predisposing and enabling variables.

GRECC Core Staff P.I.s: Rand Rupper

Key Finding: The Limitations of Computerized Patient Care System in Minimizing Harm and Improving Patient Safety. Many authors have suggested that Patient Care Information Systems will decrease medical errors, improve communication and decrease patient harm. Recent studies by the SLC GRECC investigators have highlighted some of the limitations of such systems, particularly alerts, Provider Order Entry and electronic documentation. Results from this work highlights the need for more in-depth knowledge regarding how an information system impacts work processes, the kind of information that is retrieved and utilized and the quality of communication between providers. The patients who are at the most risk for poorly organized and structured processes are the elderly, those with multiple health problems and the financially disadvantaged.

GRECC Core Staff P.I.’s: Charlene Weir, PhD and Jennifer Hoffman, PharmD.

Key Findings Published in Current Year – GRECC Core Staff as Co-Investigators on Projects with a Non-GRECC PI (list up to five; for each item provide GRECC Core Staff name(s), journal reference, and up to five line description of topic/method/results/clinical significance; use layperson language):

1. Key Finding: Prostaglandins are key mediators of inflammation that change with aging and immunologic status. Activation of the purinergic receptor P2Y2 causes the collecting duct in the kidney to make prostaglandin PGE2 which then causes an increase in urine output. In this study we demonstrated that chronic dehydration decreases this signaling pathway, while chronic excessive drinking increases how well this signaling pathway is activated. This change in sensitivity in signaling and kidney function represents a novel regulatory mechanism and could be important to...
finding new treatments in the elderly population where patients often are unable to handle changes in water states, resulting in water and electrolyte imbalances leading to morbid conditions.

**GRECC Core Staff:** Noel Carlson.

**Publication(s):**


2. **Key Finding: New Treatments for Multiple Sclerosis (MS).** MS is a disease where the immune system attacks the myelin sheath that facilitates neurotransmission. In this study we found that treatment with daclizumab (a humanized monoclonal antibody specific for the IL-2 receptor alpha chain that diminishes the immune response) was safe and effective in treating MS patients that did not respond to other therapies. This therapy could offer a new treatment for MS patients in the VA where the majority of the patients are males diagnosed between the ages of 40-50. These MS patients typically develop a progressive disease that can persist over time into the ages of greater than 70.

**GRECC Core Staff:** Noel Carlson.

**Publication(s):**


### 6. EDUCATION

**NOTE:** Do not list trainee and conference data here. Those data are reported in the GRECC Electronic Database.

**Innovations in Educational Activities Implemented During Current Year** (*list up to five; for each item, up to three lines on how it is innovative):

1. **GRECC Clinical Conference for CME contact:** The GRECC Clinical Conference PolyComm is a monthly conference on geriatric topics presented at the Salt Lake City VA and teleconference to four or more VISN sites. Educational grants to the GRECC originally allowed for the purchase of the equipment and the VISN Educational Committee endorsed the activity. CME for the activity is provided through the University of Utah. Live interaction with GRECC staff is encouraged during these presentations. These presentations may also be videotaped by the distant sites for later use.

2. **National Gero-Psych Satellite Presentations:** Four nation-wide satellite programs were produced in conjunction with EES and GRECC faculty. These programs were presented live nationally and then repeated four times each. These presentations were well-received with overwhelmingly positive evaluations and a total of more than 294 viewers from 84 different VA sites.

3. **Acute Mental Status Changes Clinical Protocol Educational Materials:** SLC GRECC staff worked closely with representatives from the Mental Health care center and the SLC VAMC Patient Safety Office to develop and test a protocol for the detection and management of Acute Mental Status Changes in the inpatient setting. The GRECC created and disseminated training materials that were accessible to all clinical staff in the VA through the VISN internet educational program, called “MyPeak.” In addition, the educational material was adopted as a key component of mandatory training for Nursing Staff throughout the SLC VA.

4. **Regional Gero-Psych Conference:** A one-day conference was held at the SLC VAMC and was attended by more than 90 individuals. The topics ranged from issues of sleep in the elderly to determining decision-making capacity. Evaluations were overwhelmingly positive.

5. **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

Reviewed: 4/13/2009
incorporated into mandatory Nursing Competencies. Over 57 RNs completed the training and evaluations were very positive.

Exportable Educational Products First Available for Distribution in Current Year (list up to five most important products; for each item, up to three lines summarizing content, target audience, format, product evaluation results. Include educational products developed in previous years ONLY if this is the first year they have been available for distribution):

1. **Acute Mental Status Changes Clinical Protocol Educational Materials**: SLC GRECC staff worked closely with representatives from the Mental Health care center and the SLC VAMC Patient Safety Office to develop and test a protocol for the detection and management of Acute Mental Status Changes in the inpatient setting. The GRECC created and disseminated training materials that were accessible to all clinical staff in the VA through the VISN internet educational program, called “MyPeak”. In addition, the educational material was adopted as a key component of mandatory training for Nursing Staff throughout the SLC VA.

2. **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 to the Roseberg VAMC, Grand Junction VAMC, and Reno VAMC as well as being available on the SLC GRECC web site.

3. **National Gero-Psych Satellite Presentations**: Four nation-wide satellite programs were produced in conjunction with EES and GRECC faculty. These programs were presented live nationally and then repeated four times each. These presentations were well-received with overwhelmingly positive evaluations and a total of more than 294 viewers from 84 different VA sites. The presentations are available in video.

4. **Guidelines for pharmaceutical management of dementia**: As part of a VISN level effort to achieve consensus on the appropriate use of the 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, changing, or using these medications in combination.

7. NEW CLINICAL MODELS

NOTE: These are new models of care for elderly veterans that the GRECC is developing and evaluating, in relation to its area(s) of focus. This is NOT a list of all Geriatrics & Extended Care clinical programs at the host VAMC.

New Clinical Models Implemented in Current Year (list all new clinical models or significant modifications of existing models that the GRECC is developing and evaluating. For each item, indicate whether New or Ongoing in current year; provide up to five line description):

1. **GHELP — (N)**: The Geriatric High-risk Evaluation and Liaison Program targets frail older adults in transition with previous patterns of high resource utilization. We have changed the composition of the team. The new team consists of a NP only; SW involvement is available as needed, increasing the economic feasibility of exportation. The team targets patients in the hospital, emergency room, and clinic settings. Targeted patients receive 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.

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.

3. **Geriatric Med / Psych Transitional Inpatient Unit (N):** 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 transferred post acute interventions to the Geriatric Med /Psych transitional Care unit. Previously these patients were designated as “intermediate” and had a length of stay (LOS) averaging 12-13 days. The LOS for patients on the Translational Inpatient Unit has and has been reduced to 4-5 days. An intensive evaluation system is being developed to clarify mechanisms of success.

4. **Dementia Treatment Clinic is in development (O):** This clinic will follow a coumadin clinic model where PharmD’s will track the effectiveness of FDA approved treatments for dementia in terms of clinical outcomes. Protocols developed will indicate improvements, stabilization or decline in patients on these agents. Clinical decisions to remain on treatments will be evaluated. Compliance, patient satisfaction, and costs will be tracked in addition to clinical response.

### Current Year Evaluation Results of New Clinical Models
(for each clinical model listed in 7-a above, indicate whether evaluated by Research or Quality Improvement project; up to five lines summarizing evaluation outcomes, such as changes in access to care, patient functioning, satisfaction, cost-effectiveness, organizational changes, etc. Note if no evaluation results in current year for a particular model): 

**NOTE:** Do not list patient service utilization data here. Those data are reported in the GRECC Electronic Database.

1. **G-HELP (R):** This program is currently being evaluated by quality improvement methods. Over 700 patients have been seen over the past year. Data is being collected concerning resource utilization for 1.5 years prior to G-HELP and after G-HELP was implemented. Specific resource utilization parameters include number of hospitalizations, number of ER visits, number of clinic visits, and patient satisfaction. Medication discrepancies between home use and prescribed use and decision-making capacity are also being evaluated. We have 6-8 consults per day where we facilitate the initiation, evaluation and implementation of geriatric evaluations in a frail population.

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. The effectiveness of the interactive dialogue development is being assessed as well as the impact on care utilization, such as hospitalizations, ER visits, and clinic visits.

3. **Geriatric Med / Psych Transitional Inpatient Unit:** This unit is in the early stages of implementation. Evaluation measures include resource utilization pre/post unit enrollment, integration into care coordination programs, overall LOS for Med/Surg intermediate status patients and improvement in hospital bed flow. In addition, qualitative information is being gathered from the staff regarding perceptions of impact on workflow and effectiveness.

4. **Care Coordination / Telemedicine System:** This project is being evaluated using quality improvement methods by the host VA. Patients are targeted with high resource utilization and tracked for changes in resource utilization. Development of a central care coordination office is evaluated based on provider satisfaction and access. This is a multidisciplinary approach that includes medicine, surgery, and psychiatry. That database is already identified $2.3 million in cost avoidance savings. Other measures of interest are the use of SF-12 and provider satisfaction.

### New Clinical Models Exported in Current 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. –modified

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 was exported to Roseberg VAMC, Grand Junction VAMC, and Reno VAMC. It is also available on the GRECC web site.

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 ready to be distributed 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 and have been alpha tested at the Salt Lake City and Sheridan VAs. These tools have been distributed to the region and are ready to be distributed nationally.

Reviewed: 4/13/2009