VA-CASE

Quarterly Newsletter

January 2013

The VA Lean Practitioners Network
A Forum for VA Lean Engagement

By Carlos M. Garcia, VA-CASE Lean Faculty

The VA Lean Practitioners Network (VALPN) is a national virtual collaborative for VA practitioners of healthcare Lean who are applying this strategy to Systems Redesign and patient-centered care. The group is informal and its purpose is to collaborate and learn from each other. We accomplish this through monthly VANTS conference calls and Live Meetings, where members share Lean application ideas and successes.

In 2007, the VA experienced the spread of Systems Redesign (SR) in operations throughout the nation. Many were attempting to incorporate Lean into SR, but there was no simple way to share Lean experiences and best practices. Furthermore, there was little understanding of Lean Thinking and rather limited Lean training resources inside VA. At this time, I began to develop an idea for a virtual Lean and Six Sigma discussion forum to start a dialogue among many who wanted to apply Lean strategy to problems within their organizations. In early 2009, I presented the idea at a VISN 22 conference and was encouraged to make it happen. Later that year, after testing a small "practitioners network" in the West, I created today's organization. The group developed quickly into a national network by simple word of mouth, and became a new and productive discussion forum for those experienced with Lean strategy and for many who wish to learn how it can benefit their organizations and our Veterans.

"The group developed quickly into a national network by simple word of mouth, and became a new and productive discussion forum"

Today, the network continues to grow and members are from all levels of VA hospital and clinic operations. Beginning in January 2013, the network will have a new home on the Professional Development page of the new VA-CASE Share Point. If you wish to share your healthcare Lean or Six Sigma application ideas and successes, and help others to begin their Lean journey, consider joining the network by contacting me at *carlos.garcia2@va.gov*.

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Introducing New Program Names

- *Program, Strategy and Integration* merged with *Informatics* to form **Strategic Programs and Data Engineering Resources (SPDER)**
- The *Purchased Care Program* will now be called the **Transactional Systems Program (TSP)**
- The *Collaborative Program* will now be called **Clinical Partnerships in Healthcare Transformation (CPHT)**

Details for program changes on page 5

Staff Announcements

Welcome our New Employees!

Anna-Maria d'Ambrosio is a student intern in SPDER. After working for market research company SmartRevenue as an ethnographer, she joins us to work on the health informatics initiative (hi2) project as an interviewer and observer. She completed her master's degree in Visual Communication at IUPUI and is now working towards a Master's certificate in Health Informatics.

Christina Dunbar is a master's student focusing in human-computer interaction from the School of Informatics and Computing, Indiana University on the Indianapolis campus. She has conducted contextual inquiry in dental offices and worked as a user experience researcher at Pearson North America. Her latest research paper is titled "Connecting to Patients via Social Media: A Hype or A Reality?". She is currently working as Project Manager on the health informatics initiative (hi2) project, a joint project between HSR&D and VA-CASE.

Pedro Figueroa received his BA in Humanities with a minor in biology from Daemen College in Amherst NY. He moved to Indiana in 1999 where he worked for the Indiana Blood Center and Mid America Clinical Lab processing blood and other fluids. He is an Army Veteran who served in Iraq as a computer information specialist and a supply specialist. He works for the Professional Development Program as a materials handler. He hopes to complete his MS in Forensics in the near future.

Charlie Harris has a degree in Industrial Engineering with a minor in Business Administration. Charlie has worked for the VA previously as a program analyst for System Redesign and a Lean coach for the second generation cancer care collaborative. Prior to joining VA-Case, he worked as an industrial engineer for Raytheon Missile Systems in Tucson, Arizona where he supported various joint venture plans, electro-optical product lines, and space systems programs. Charlie will be working with the Purchased Care program as an Industrial Engineer.

Paul Moore is an Army Veteran having served in Afghanistan and Iraq. Paul attended Lincoln College of Technology and majored in Automotive Technology with a minor in High Performance. He most recently worked as an automotive repair technician for Toyota. While the career was a rewarding one, Paul knew that he had more to offer. So when the opportunity came up to get a career helping fellow Veterans, he took it. Paul is an assistant to the Materials Coordinator for the Professional Development Program. Paul plans on beginning school this spring to begin work on an Engineering degree to help further his career.

Willena E. Nkanga is an Industrial Engineer for VA-CASE VISN11 VERC at the John D. Dingell VA Medical Center in Detroit Michigan and is a Certified Six Sigma Green Belt. She earned her Bachelor's of Science from Wayne State University and is currently pursuing her Master's in Industrial Engineering with a specialization in Lean Operations Management. Willena has been working for the Department of Veterans Affairs since 2009 and has been involved in various lean projects. In addition to her professional background, she is a member of the Tau Beta Pi National Engineering Honor Society, the Institute of Industrial Engineers, and the National Society of Collegiate Scholars. She also served as a co-recruiter for the GM North American Supply Operations/Supply Chain Management department for Wayne State University's business school's career fairs. She is working in the Collaborative Programs supporting the Specialty Care Project.

Satish Tyagi is currently pursuing a PhD in the Department of Industrial and Systems Engineering at Wayne State University. He is working on the Non-VA Care National Standardization (NVNS) project as an Industrial Engineer with the Transnational Systems Program/VISN 11-VERC team. Before joining VA, Satish completed an internship at Siemens Energy Inc. where he was involved in process standardization, quality management, and value stream mapping sessions, development of Lean games, and conceptual development of visual management tools like Scrum, Obeya. Satish received his Masters of Science (2010) degree in Mechanical Engineering from the University of Louisiana at Lafayette.

Graduations

Jarrod Otter graduated from IUPUI with a BS in Mechanical Engineering Technology and a Motorsports Engineering Technology Certificate. He began his career at VA as a student with VA-CASE and is currently working on the IVN project for VA-CASE. Jarrod's hobbies include a passion for paintball. He is currently a member of the TMG Ruckus and TMG Outlaws paintball team.

Staff Changes

Kristen Colwell is the Associate Director for the newly formed Strategic Programs and Data Engineering Resources (SPDER) program within VA-CASE. Prior to her current position with VA-CASE she was the Chief of Informatics for the ISO 9001:2008 Consultative Division and leader of the Enterprise Value and Risk Intelligence service technical group. Since 2007 within VHA she has been instrumental in procuring and implementing enterprise (national), VISN, and facility level integrated quality management systems and designing enterprise and VISN-level online transactional and analytical processing data and knowledge management structures, enabling organizational situational awareness. Ms. Colwell has been with the VA since 2003, and is a Senior Federal Acquisition Center Program and Project Manager (Senior FAC P/PM certified).

Ms. Colwell is also a licensed Medical Technologist, Supervisor, in the State of Tennessee since 1996 and is board certified by the American Society for Clinical Pathology as a Medical Technologist, Generalist since 1996. Additionally, Ms. Colwell holds certification as a Certified Quality Auditor (CQA) with the American Society for Quality.

Kristen has more than 18 years of experience in healthcare, biological product manufacturing, information technology industries, holding versatile positions in the areas of clinical laboratory management, quality systems design and engineering, network administration, and business intelligence architecture and design for management review and awareness. Her professional passions are effective management systems that improve organizational cultures and awareness and the use of analytical sciences in support of business strategy.

Within the Professional Development Program**, Debi Griffith** has transitioned from her role as the Associate Director into Program Management. Under her leadership, the VA-CASE Professional Development Program has built the infrastructure to support VA-CASE growth, introduced VA-CASE Lean Certification and spearheaded the national deployment of the Improvement Resource Guides (Toolkits).

In her new role in VA-CASE Debi will be leading the development and implementation of a formative assessment of the Lean Management System (LMS). LMS has five pilot sites that will be embarking on the journey of creating a Lean enterprise system in their facilities. Continuous daily improvement concepts will be implemented including value stream analysis, huddles, standard work and daily stat sheets.

Debi will continue her assessment work of other programs in VA-CASE and her work with the RE-INSPIRE grant.

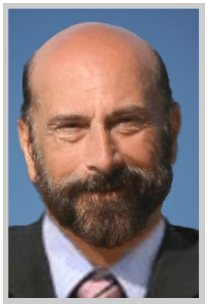
Staff Changes

Gail Edwards has trasitioned from her role as Associate Director of Informatics and is taking on a new role within VA-CASE as the Program Manager for the National Utilization Management Integration (NUMI) project. NUMI is included in the Utilization Management area of Office of Quality, Safety and Value. Utilization management (UM) process uses McKesson InterQual® best practice criteria for reviewing inpatient hospital admissions. The software program NUMI includes the criteria to ensure the results of each review are captured. Over 8 million reviews have been entered since the applications introduction at the VA.

The project will include a qualitative review of the results to determine high and low performing sites. Additional analysis and capture of data will determine the model of review utilized by the VA sites. Based upon the analysis, a recommendation for field guidance documentation or national policy will be delivered to the program office.

Gail will be utilizing skills gained from participating in the VA Enterprise Program/Project Management Training Model (EP/PMM). The training aligns with the Federal Acquisition Certification for Program and Project Managers (FAC-P/PM) following best practice and competencies in actual program and project life cycle. She has completed the first of four training sessions, which will end with a capstone project.

George Ponte has been appointed VA CASE Acting Director for Professional Development. He will continue his work as a Health Systems Specialist, Lean facilitator for VA-CASE .



He has facilitated Station, VISN and National Advanced Clinical Access improvements, is a member of the National Systems Redesign Educational Committee since its beginning and is a facilitator for the Yellow Belt, Green Belt and RPIW classes. He was the VISN 1 Systems Redesign Coordinator from 2005 to 2011and is a member of the National Cancer Care Planning Committee. He co-chaired the Committee that developed the Improvement Advisor Academy program and curriculum and currently serves as lead Faculty Director for the Improvement Advisor Academy and faculty for the Access Academy.

George is a national resource expert in the application of Lean, Systems Redesign and Systems Engineering within VHA healthcare and is a valued and frequently requested National speaker. He melds many years of VHA Healthcare experience with improvement and Lean skills to tailor programs to VA-CASE customer needs.

Faces at the Face2Face

Program Name Changes

Strategic Programs and Data Engineering Resources - SPDER

In 2013 the SPDER Program will support:

- Adding Capacity and Rigor to the Project Management components used within VA-CASE
- Building communication and resource infrastructures for how program and project management is performed within VA-CASE, acknowledging the Enterprise Program and Project Management Model (EP/PMM) and its adaptations for VA-CASE
- Creating an initial (first iteration) dynamic and innovative, incremental Program Management Information System (PMIS)
- Creating an intensive training series for VA-CASE/VISN11 VERC to review the components of the Enterprise Program and Project Management model
- Building administrative resource structures (SharePoint, Leave Tracking, Processes, Documentation) for the new SPDER program and employees

Transactional Systems Program (TSP)

The TSP will retain their key partnership with the National Purchased Care Program, but will expand to support other business and transactional service optimization with VHA, such as Contracting and Health Benefits Appeals.

Clinical Partnerships in Healthcare Transformation (CPHT)

The name change was put in effect in order to leverage our experience to expand the scope of this group outside of Collaborative programs**.**

Two such programs we will work on are:

- Mobile Weight Management Program for Veterans (MOVE!) through iPhone Technology
- Voice of the Veteran - Easing the Burden of Providers through local "Computer Chess and Veterans Health" Programs

New VALPN and Process Improvement Alliance Partnership

The VA Lean Practitioners Network has partnered with the Process Improvement Alliance (PIA), a VA Yammer group to expand both our networks of Systems Redesign and Lean Six Sigma thinkers. This effort was coordinated by George Ponte to begin to utilize the power of social media and networking within VA to share knowledge, best practices and expertise.

Yammer is a social network service that allows organizations to create private social networking within their walls for the benefit of their workers and leaders. It has a blog format similar to LinkedIn's and has the ability to communicate 24/7. The partnership between the VA Lean Practitioners Network and the Process Improvement Alliance (PIA), is perfect in that each gains new capabilities from the other. They have the same purpose, which is to provide a forum for sharing of knowledge and experience, and to facilitate discussion of ways to improve the quality, cost and timeliness of the healthcare services we provide to our Veterans. Both are grassroots efforts to help advance high quality VA healthcare.

The creator of the Process Improvement Alliance (PIA) using the Yammer is Mr. Eric James, Systems Redesign Coordinator, New Mexico VA Health Care System. The PIA began small and is growing quickly. Eric and Carlos Garcia have shared information to post on each other's networks and introduced the membership to each other. Within two days of the posting of VALPN information on the PIA networks Carlos received seven requests to join the VALPN from staff who saw Eric's announcement. In addition, a couple of these individuals also saw the VA-CASE Lean certification information on the VALPN site and asked for more information. Eric and Carlos believe that this virtual collaboration will lead quickly to further growth of both networks and to an exciting sharing of information, knowledge and ideas. Already, they see the possibility of having their linked networks form similar partnerships with other VA groups that have the same purpose and vision.

Professional Development

First VHA Vertical Value Stream Mapping Conducted

In October Brian Poynor and Ba Pirojboot conducted the first (in the VHA) Vertical Value Stream at the Salem VA Medical Center in Roanoke, VA. A Vertical Value Stream is a Lean tool for project management that helps an organization decide what needs to be changed to meet future business demands. Creating a Value Stream Map explains the organization's current state and helps them decide what needs to be done and in what order it needs to be done to be most effective.

Brian and Ba met with the client to conduct an RPIW for implementing a Comprehensive Sleep Lab Program. They soon discovered that the client was overwhelmed with all of the tasks involved, they did not understand their roles and they did not have a process in place. Brian and Ba suggested that what they really needed was Vertical Value Stream Mapping.

This event did everything a Lean event should do. At the end of the three day event, the 25 leaders involved left with a clear understanding of where they were, a road map on how to get their objective achieved and satisfied, involved stakeholders.

Other Professional Development Accomplishments

- **RE-INSPIRE:** The analysis of the data collected from RE-INSPIRE interviews continues and regular Huddle meetings are being held. The study group has recently begun meeting to work on Episode Profiles—a method of analyzing data in order to find common themes in the transcripts of the interviews held at RE-INSPIRE study sites. This is part of a grant from HSR&D obtained by Edward Miech.
- **Purchased Care LSS:** The class sessions for Lean Six Sigma for Purchased Care have been completed. And the final presentation was completed on December 11, 2012. Jay Chandra, Debbie Curl-Nagy and Ken Rennels will continue to work with Purchased Care on their projects.

Lean Education Events

Course	Classes	Locations
Yellow Belt	8	Indianapolis, IN, Sacramento VAMC, Lexington, KY, Las Vegas, NV, Lebanon, PA, Madison, WI, Ashville, NC
Green Belt	8	Lexington, KY, Las Vegas, NV, Leavenworth, KS, Smyrna, TN, Orlando, FL, Asheville, NC,
Black Belt	7	St. Louis, MO, Little Rock, AR, Denver, CO, St. Louis, MO, Smyrna, TN, Lebanon, PA

Strategic Programs and Data Engineering Resources (SPDER)

The Program, Strategy and Integration Program has merged with the Informatics Program to form Strategic Programs and Data Engineering Resources (SPDER). The focus of the SPDER program office is to provide strategic programmatic support and innovation through the design and adaptation of management system theories, program management approaches and data engineering, informatics and analytics services in support of continual improvement and efficiencies in healthcare systems.

In addition to providing resources to support external data engineering, informatics and analytics services, the SPDER program also provides VA-CASE program and project management expertise to support internal initiatives. This integrated program/project management structure ensures fulfillment of VA-CASE customer deliverables and expertise available through VA-CASE program and project management services.

Other SPDER Accomplishments

- **SPDER Infrastructure:** The building of infrastructure and communication processes continues with several SharePoint-based tracking systems created to support weekly meetings, shared SharePoint Calendars sorted by business function, suspense management/action item management, resource allocation and tracking, and communication of status report narratives.
- **Dialysis Program:** The Service Level Agreement was completely revised, thoroughly edited, and reviewed by Ms. Katie Murphy and the VA-CASE Dialysis Program Team. Iterations began on 11/28/2012 and concluded with an signed and approved Service Level Agreement between VA-CASE and the National Dialysis Program under Patient Care Services on December 20, 2012. The planned budget for the National Dialysis Program work is $904,347.00. Bryant Headley was assigned as the Account Manager delegate for VA-CASE and will perform internal VA-CASE program management and account/budget management support for the Dialysis program.

Transactional Systems Program (TSP) Accomplishments

- **Purchased Care**: VA-CASE submitted the final report for the FBCS Optimization Beta Test Site in Miami, FL to the Chief Business Office (CBO). The report included an assessment of the Beta Test which was conducted between December 2011 and September 2012. Findings revealed an improvement in total claims processed after implementing the optimized processes, but these improvements were masked by the lack of having a consistent clinical reviewer on staff to review Mill Bill and Unauthorized claims. This resulted in a significant increase in backlogged claims and an overall decrease in timeliness to process claims. CBO and VA-CASE reported these findings to Facility and VISN Leadership during an on-site close-out meeting which also included a Lessons Learned session facilitated by the CBO Product Effectiveness team.
- The **CBO Dental Care Subject Matter Expert** (SME) workgroup and Newborn Care SME workgroups conducted bi-weekly meetings focusing on the Fee Basis consult and authorization processes with the goal to formally process map and conduct an impact/ gap analyses. This is being done to facilitate the standardization of NVCC processes and Health Claims Processing (HCP) for the future state of the Referral Automated System (RAS).
- Collaboration with the National Geriatric Extended Care (GEC) Workgroup was initiated.
- A Non-VA Care Activity/Task Inventory was completed by the VA-CASE Industrial Engineers (IE's) in conjunction with the Chief Business Office (CBO) Business Process Engineers (BPE's) using the current non-VA care policies and procedures. The Inventory will be used as a process guide and checklist for on-site evaluations of current state business processes at three Centralized Fee Units. VA-CASE IEs also initiated the development of performance metrics to be used as a tool in the evaluation process.

Clinical Partners in Health Transformation (CPHT) Programs

The VHA office of Systems Redesign in collaboration with the VHA National Surgery Office and VA-CASE conducted a national Surgical Flow Improvement Initiative (SFII) in Fiscal Year 2012 to improve VHA operating room (OR) flow, efficiency, and operations, insuring timely and appropriate access to care for our Veterans. The goals of the SFII were:

1. Improve front line operations/function at selected Medical Centers
2. Design and pilot an effective improvement strategy for OR operations
3. Identify and document specific strong practices that could/should be considered for all OR teams with VHA.

VA-CASE provided project management and implementation support services to the SFII planning Committee and teams at the chosen facilities and conducted a series of 40 local Rapid Process Improvement Workshops (RPIW) over five months (April – Aug 2012) in 20 facilities nationwide. Dr. Balmatee Bidassie served as the project manager supported by nine faculty and three Industrial Engineers.

The goal of VA-CASE is to effect transformative improvements in healthcare delivery systems through the application of industrial engineering tools and principles. This improvement initiative adopted a hybrid collaborative model with the incorporation of virtual symposia and RPIWs (a LEAN approach to improvement usually lasting one week). Each VAMC-level team utilized various tools within the VA-TAMMCS framework and approach to SFII vision to generate viable solutions to existing issues/barriers highlighted in teams' project charters or document of intent. During the weeks of each RPIW 1 and RPIW 2, using the problem statement, the team moved the process from the "current state" to the "target state" by analyzing the "gaps" and drilling down into the "root causes" to generate their solution ideas.

This hybrid improvement model overcame the challenges experienced in traditional collaborative models. It encouraged teams to fully prepare for the implementation of changes beforehand to enhance the effectiveness of SFII, supplied teams with continuous support to achieve set aims, and requested senior management involvement from both VISN and facility level to ensure the sustainability of achievements. Future improvement initiatives are believed to be able to achieve better performance by monitoring teams preparation beforehand, more leadership buy-in, and progress tracking.

VA-CASE VERC Team (L to R): Shaiju Eapen (IE), Pranav Radhakrishnan (IE), Carlos Garcia (F), Balmatee Bidassie (PM, F), Virginia Daggett (Admin), George Ponte (F), Russell Cech (F), Sandra Serrano (F), Shruthi Musunuri (IE), Jamie Workman-Germann (F), Brian Poyner (F)

The IEs used Microsoft Excel to design 1) Standardized Measurement Tool to assess and monitor the progress for the National Measure made by teams participating in the SFII; and 2) a Standardized Return of Investment Tool where facilities required a method and tool to evaluate the impact of SFII improvement work. The measurement tool developed will help OR teams to establish baseline data and monitor progress towards the goal for 7 measures taking into account all moving parts in the OR. Data stored in VISTA from the various facilities will be imported into the Excel-based

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CPHTcontinued

measurement tool. Constant monitoring of the progress of OR measures (Baseline and after implementation of RPIWs data) will be used to guide strategic decisions on OR measures. At the start of the project, there was not a standardized ROI process or tool to calculate the potential financial savings from SFII at a national level or facility level. VA-CASE Standardized ROI tool is intended to provide a simplified means for generating a conservative estimate of the financial impact from improvements based on the national measures made during SFII.

Kudos to the team

Three days before broadcasting Symposium II from Salt Lake City, the SFII planning committee and travelling speakers were told that travel was not approved. The planning committee worked around the clock with amazing creativity to present the Virtual Symposium broadcasting live using Live meeting and VANTS. Lots of praise goes to the Industrial Engineers: Pranav Radhakrishnan, Shaiju Eapen and Shruthi Musunuri who were able to adapt and be flexible to work with their team to support the Symposium II initiative. They showed true tenacity when the "going got tough". Also, praise to Sandra Serrano for stepping in to serve as co-faculty and presenter. The entire VA-CASE team was outstanding overall and they were praised nationally during the Symposium II for all the great work done by the faculty and IEs on this challenging Hybrid Collaborative.

In addition to the faculty travelling on-site to conduct each of the forty (40) RPIWs, one of the main contributors to the success of SFII was the virtual coaching roles of the IEs throughout the entire SFII project. During the pre-planning phase, IEs identified national performance measures and developed measurement and ROI tools for progress tracking and change plan prioritization purposes. Three IEs supported the 20 teams virtually for six weeks prior to an RPIW to prepare their data and tools (supplies, team composition and leadership support) to ensure that the on-site RPIW conducted by the faculty were as hassle-free as possible. During the on-site RPIW, the IEs were available virtually (in few cases were on-site with the faculty) to help support the teams and faculty during the weeks as needed. They also assisted in pilot testing change ideas during the event week. During the implementation phase (8 weeks after the RPIW), the IEs worked with the faculty and team to help the team track their progress and provide support as needed. The IEs tracked the teams' progress and status of Plan-Do-Study-Act (PDSA) cycles during weekly/bi-weekly calls. At the beginning of every month, the program manager used the PDSA data and measurement tool data for completed cases of the past month to generate monthly reports to monitor teams' performance.

During the 5-month period of the initiative, the VA-CASE team worked closely with the 20 teams to identify problems, overcome barriers, and explore opportunities for processes improvement targeted on different aims to improve OR operations from multi-aspects. At the conclusion of SFII, there were 468 PDSA cycles to implement changes. 73% were implemented and 24% were in progress. 10 teams worked on OR first case on-time starts, 11 teams aimed to reducing the average OR turnover times, 7 teams intended to improve the OR utilization, and 5 facilities tried to reduce their case cancellation rate and 1 team focused on delayed reports. On average, teams were able to improve the first case on-time start rate by 24%, mean turnover time by 14%, cancellation rate by 5%, and OR utilization by 8%. If the teams sustained their improvements, the potential annualized ROI (based on the standardized tool) is estimated to be $25M nation-wide. Dr. Bidassie will be presenting the approach and results of this project at Institute of Industrial Engineers (IIE) Annual Conference and Expo 2013.

Other CPHT Accomplishments

- **Support for the Specialty Care Toolkit – FY13:** The team created a standardized email to collect tools from the Specialty Care Collaborative teams and is currently designing the Specialty Care Toolkit that will link each tool to one or more Specialty Care pillars and make them available nationally across the VA for other facilities to download and adopt locally. The tools are being sent directly to the IE's in order to have them posted to the VA-CASE SharePoint site for review by the toolkit committee.
- **Access Academy Measurement Tool:** The team designed and developed a measurement tool for Access Academy to track Primary Care (PC) metrics that facilitate the PC performance measure on either a yearly or weekly basis.

VE-TAP

Clinical Workload Modeling and Patient Panel Size Adjustment Project

Sponsored by VA Office of Informatics and Analytics

In the Veterans Health Administration (VHA), patient access to healthcare can be measured by the time between the patient's desirable appointment date and the actual appointment date for primary care, which is known as appointment waiting time. One of the important factors that influence appointment waiting time is the size and composition of the patient panel for a specific primary care provider or a Patient Aligned Care Team (PACT). VHA current practice specifies that a physician have a patient panel size of 1200 patients (900 for a Nurse Practitioner), with adjustment based on VHA's internally developed patient workload estimation model developed in 2010. This workload model can estimate clinical workload in terms of expected number of patient visits to primary care providers based on patient demographic information, diagnosis, and other factors. This model is very useful in helping to adjust panel size for a provider or team so that the capacity of the provider matches the workload and patient waiting time. Provider utilization can then be maintained in good standing. Establishing a good statistical model of this kind is very challenging due to the large number of category variables and high variability in data.

In response to a request from VA's Office of Informatics and Analytics, a VA-CASE team (Dr. Kai Yang, Nikila Ravi, Jihan Wang, Hakim Neemuchwala, and Will Jordan) took the responsibility of improving the current VHA clinical workload model. Shortly after obtaining access to the CDW database, the VA-CASE team developed a new modeling approach based on intelligent variable transformation that greatly improved the 2010 VHA model in the following aspects:

1. Significantly improved R-Squares from the current 25% to more than 40%, R-Squares is a metric to measure the capability of a model to explain the variation in data.
2. Achieved superior model prediction accuracy, with an average of 2% prediction error and maximum error of 5% over the 5% to 100% profile range of data.
3. Identified a set of meaningful significant influencing variables for clinical workload, such as ACC diagnosis, Age, CanScore, Geographical distance, income level, and facility type.
4. Developed the workload estimation model with RVU (Relative Value Unit) as the response variable, RVU is a quantitative measurement unit characterizing clinical workload based on the expected duration and complexity level of CPT codes.

The VA-CASE team also leveraged this newly developed model to calculate the estimated workloads in terms of RVU for each provider, each primary medical team, and each facility. These workload estimates are used to adjust the panel sizes for all primary care providers, and medical units within VHA enterprise. Currently, the VA-CASE team is searching and developing the next generation of workload estimation models.

Other VE-TAP Accomplishments

- **VE-TAP Review of National End Veteran Homelessness (EVH) Model:** The VE-TAP M&S team was invited by the Office of Policy and Planning (OPP) to support a review of the End Veteran Homelessness Model for the VA Homelessness Programs. Mid Mulpuri is currently developing a concept for a predictive model for the program.
- **IVN:** IVN 2.0 was released and installed at Indianapolis, Danville, Detroit, Louisville, and Saginaw. We are continuing site implementations at 34 other facilities
- **VISN 15 Mental Health Inter-facility Transfer Process:** We are presently finalizing the SOW with VISN 15 to provide the M&S Decision Process tool to support Mental Health patient transfers and policies between VISN facilities.
- **RME NRT Decision Support System:** Making steady progress in model validation, continuing to work with OI&T on PACU system operational testing. Currently testing new template for surgery schedule, and integrating ACCESS and VistA data.
- **Design Evaluation:** Progressing on front end GUI development and Assembla site with AJAX enhancements to support the new navigation system. They are working with Detroit VAMC to identify and capture pertinent data.

Telephone Assessment and Skill-Building (TASK) Intervention for Informal Caregivers

by Virginia Daggett, PhD RN

Dr. Daggett is a nurse researcher currently working as a Program Manager/Nurse Consultant for the Purchased Care Business Systems Management Clinical Programming Consulting Project. She developed the content for Traumatic Brain Injury (TBI) iOS app and is currently conducting the feasibility and usability study with this app and she is the sole Principal Investigator of the Caregiver Grant.

Stroke and traumatic brain injury (TBI) are leading causes of long-term disability among Veterans, and result in the need for care from informal caregivers. An informal caregiver is defined as a family member or a friend who assists the survivor with his/her activities of daily living in order for the survivor to remain in his/her home or a family member or a friend who provides complete care to the survivor to meet his or her needs of daily living in a home environment.

This four-year grant will be testing the Telephone Assessment and Skill-Building (TASK) Kit with caregivers of Veterans with stroke and TBI. The TASK II/TASK-II TBI is a telephone intervention that is delivered by professional nurses who have received intensive training and includes:

1. Skill-building that focuses on information about stroke or TBI and the survivor's physical and instrumental care needs, and handling the survivor's emotions and behaviors;
2. Skill-building that focuses on the caregiver's own personal responses to caregiving;
3. Skill-building that empowers caregivers to independently assess their needs in caring for both the survivor and themselves, and addresses these needs over time using the TASK II Resource Guide for Caregivers containing tip sheets and skill-building strategies.

Caregivers will receive 8 weekly calls from the TASK II intervention nurse located in Indianapolis who will conduct a booster call at 12 weeks. At week 5, the caregivers will also receive an additional assessment to identify care-giving-related negative life changes. During the call caregivers will select at least one skill need in order to address areas in their lives that may have deteriorated as a result of providing care.

While this intervention has been tested with caregivers of stroke survivors in the civilian population and has been adapted for family caregivers of civilian TBI patients, the intervention has yet to be tested with caregivers of Veterans with stroke and/or TBI.

The objectives of this study are to conduct a randomized trial to evaluate:

1. Efficacy of the TASK II intervention in informal caregivers of Veterans with stroke;
2. Estimate effect sizes for the TASK II intervention for informal caregivers of Veterans with TBI

The sample will include informal caregivers of Veterans with stroke or TBI, who have received care at the Michael E. DeBakey VAMC in Houston or at the Richard L. Roudebush VAMC in Indianapolis. Preliminary activities have been initiated and the anticipated start date is March 1, 2013.

Virginia Daggett, PhD, RN is the Principal Investigator and is collaborating with the following co-investigators: Drs. Tamilyn Bakas and Michael Weaver, IUSON, Indianapolis; Dr. Archana Dube', Department of Economics, IU Indianapolis; Dr. Laura Murray, Department of Speech and Hearing Sciences IU Bloomington; Dr. Bonnie Wakefield, VA Nursing and eHealth QUERI; Drs. Teresa Damush and Linda Williams Health Services, Research & Development (HSR&D)/VA Stroke Quality Enhancement Research Initiative (QUERI), Indianapolis; and Dr. Jane Anderson, HSR&D/VA Stroke QUERI, Houston.

VA-CASE
VISN 11 VA Center for Applied Systems Engineering

VISN 11 Accomplishments

- **Homelessness:** The aims for FY13 include: 1) to reduce the time it takes to house a Veteran from HUD-VASH admission to lease up in 75 days or less by the end of FY 13, while implementing Housing First philosophy and 2) by the end of FY 2013, 65% of Veterans admitted to HUD -VASH will meet the criteria of chronically homeless. The tracking tool has been changed according to the new AIM Statement and has been implemented successfully. The Group has identified 5 PDSA cycles, out of which one has been implemented so far.
- **Commodity Standardization:** The FY13 aim is by the end of FY13, the Commodity Standardization Network will realize $14M in cost savings and/or cost avoidance initiatives. In order to realize a saving of $14M, the group has identified 45 commodities to standardize. A tracker has been developed to track all the 45 commodities and their savings over the period. Prioritization will be carried out to determine the highest savings. Flow mapping session was conducted to standardize the process for "Therapy Surface" and "Coaguchek." VA-CASE Lean Coach Deborah Curl-Nagy will assist with prioritization and implementation efforts
- **Patient Flow:** The Patient Flow Initiative successfully completed their transition from their excel tool to SharePoint data collection tool. This tool will provide the detail required to capture fee events at each facility. Facilities are asked to come up with a facility specific aim for FY13 rather than an overall VISN aim.
- **No Harm:** The two Hand Hygiene Observation groups: VISN 11 One Health Infection control group and VISN 11 Hand Hygiene group have joined to work on the Hand Hygiene initiative. They have decided to track the Hand Hygiene observation with the locally developed tool with the help of VISN 11 SR Team. The pilot test for the Hand Hygiene Observation Tool has been accepted and has been widely implemented.

Presentations/Publications

Industrial and Systems Engineering Research Conference (ISERC)

Research Track

- Prediction of duration of list of cases
  Jihan Wang, Xiaoyu Ma, Kai Yang
- Bridging primary and specialty care by collaborative healthcare workflow
  Jihan Wang, Xiaoyu Ma, Kai Yang

Applied Science Track

- Cancer Collaborative Results
  Balmatee Bidassie, Shaiju Eapen
- Surgical Flow "Hybrid" Collaborative Model
  Balmatee Bidassie, Shaiju Eapen

International Journal of Advanced Manufacturing Technology

- **"A Semi-automatic Mold Cost Estimation Framework based upon Geometry Similarity"**
  Cyrus Hillsman, Yan Wang, Dima Nazzai
  (In progress)

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