



VA
HEALTH
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in the 21st Century

United States Department of Veteran Affairs
Research Service, VA St. Louis Health Care System

Clinical Epidemiology Center

2013 - 2014

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Introduction

Clinical epidemiology is a scientific discipline that examines the patterns, causes, and effects of health and disease conditions in defined populations. It is the cornerstone of public health, and informs policy decisions and evidence-based practice by identifying risk factors for disease and targets for preventive healthcare.

The Clinical Epidemiology Center (CEC) at the Saint Louis VA Health Care System (VASTLHCS) began its operations in July 2013 thanks to a Department of Veterans Affairs T21 grant. The CEC is a core resource available to VA investigators to support and grow clinical epidemiology research at the VASTLHCS. Since its inception, the CEC has offered a weekly seminar organized around topics of interest within clinical epidemiology including lectures on novel concepts in biostatistics, epidemiology, data visualization, presentations of current research results, and hands-on seminars in statistics, grant writing, and proposal preparation. The CEC has also worked with nearly 22 investigators and provided support including consultation on research methodology, providing preliminary analyses and pilot data for grant proposals, and assistance with manuscript preparation, posters and scholarly presentations.

Strategic Considerations:

The VASTLHCS is a 1a facility that is positioned amidst a number of academic affiliate institutions with world class robust research programs and a sophisticated research infrastructure.

In order to grow the Research portfolio at the VASTLHCS, it is strategically important to pursue avenues that would complement and not compete with the Research programs offered at the academic affiliates. Furthermore, consideration should be given to programs that leverage the advantage that the VASTLHCS –while a regional healthcare system- is an integral part of a vast national network of healthcare systems.

Clinical Epidemiology Research is one such avenue that complements the academic affiliate institutions strength, and leverages the unique strength of national VA data (Big Data). However, the availability of Big Data alone is not sufficient to draw big talent. The VASTLHCS must invest in building the infrastructure necessary to provide analytic support (biostatisticians, and data analysts) to junior investigators.

The CEC in its inaugural year was “a proof of concept” project to test the validity of this model. In this report, we present an overview of the program, our conceptual model, and a summary of the accomplishments.

Stakeholders

The Clinical Epidemiology Center is organized around the principal of supporting excellence in research for investigators at the VASTLHCS. The CEC’s mission to improve the health and wellbeing of our Veterans is fully aligned with the VASTLHCS strategic goal of producing **Healthy Veterans**. And is aligned with the T21 (VA T21 Transformational Initiatives) of enhancing the long term health and wellbeing of veterans through R&D.

The CEC team worked with research investigators to provide methodological and biostatistical consulting, data acquisition, management and analysis, and increasing capacity among researchers through proactive educational opportunities that link experienced researchers with junior investigators. The comprehensive plan detailed below provides a means of identifying and tracking goals specific to furthering the mission of the center.

The plan for work conducted by the CEC this year was developed in conjunction with experienced project managers, data managers, biostatisticians, physicians and operations specialists with particular interests in clinical epidemiology research. Partners across the VASTLHCS contributed to this plan via active conversations, meetings and co-writing during the revision process.

Primary stakeholders include our Medical Center Leadership, Research investigators, legislators, and our veterans. Table 1 illustrates the CEC evaluation team’s framework for engaging all stakeholders in the various elements of the center’s evaluation plan.

Table 1: Stakeholders matrix

| Evaluation Stakeholders | What stakeholders want to know | How to engage stakeholders | When to engage stakeholders |
|---|---|---|-----------------------------|
| VA St. Louis Health Care System Leadership | 1. Review and document resources that have been leveraged to support CEC program | Regular meetings, data reports | Ongoing |
| | 2. Review and document which programs, members or groups have been supported by the CEC | Regular meetings, data reports | Ongoing |
| | 3. Review whether services offered by the CEC have contributed to increased Research productivity among junior investigators | Regular meetings, data reports | Ongoing |
| | 4. Review whether services offered by the CEC have contributed to growth in other programs within Research and outside Research especially the effect on GME and Associated Health programs | Regular meetings, data reports | Ongoing |
| | 5. Review the strategic importance of CEC vis-à-vis other programs in Research and the VASTLHCS overall | Annual data report | Annually |
| | 6. Evaluate the Return on Investment of this program | Annual data report | Annually |
| | 7. Evaluate the future directions of this program | Annual data report | Annually |
| St. Louis VA investigators | 1. Review trends in disease and determine priority areas for research | Regular meetings, progress reports | Biannually |
| | 2. Review trends in funding, and priority areas of ORD and NIH to determine potential areas of research | Regular meetings, progress reports | Biannually |
| | 3. Review VA data sources and analytic support available through the CEC | Progress reports, regular meetings, conferences | Ongoing |
| | 4. Review advances in clinical epidemiology and biostatistics | Progress reports, regular meetings, conferences Annual meeting | Ongoing |
| | 5. Review the CEC annual report | Annual meeting | Annually |
| Legislators | 1. Evaluate the value of the program to the VASTLHCS, to our constituents, and to the community at large | Data reports Dissemination of research results | Ongoing |
| Veteran population | 1. How does the CEC support the health and well-being of veterans | Data reports Dissemination of research results | Ongoing |

CEC Staff Biographies:**Ziyad Al-Aly, M.D.*****Co-Director***

Clinical Epidemiology Center

VA Saint Louis Health Care System

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Dr. Al-Aly is a staff nephrologist and the Associate Chief of Staff for Research and Development at the VASTLHCS. He earned his Medical Degree from the American University of Beirut, and completed his residency and fellowship at Saint Louis University. Dr. Al-Aly was then a visiting fellow at Washington University of Saint Louis before joining the VASTLHCS.

Dr. Al-Aly has helped secure funding through T21 for the establishment of the Clinical Epidemiology Center and oversaw the planning and the implementation of this project. He has numerous highly cited publications in the Journal of the American Society of Nephrology, Kidney International, American Journal of Kidney Diseases and others. He serves on numerous editorial boards including Kidney international, and the Clinical Journal of the American Society of Nephrology, and serves on the VA Nephrology BLRD and CSRD Merit Review study section.

Dr. Al-Aly chaired the scientific advisory board of the national kidney foundation, and currently serves on its Board of Directors. He also contributes to the American Society of Nephrology (ASN) in various capacities and most recently elected to serve on the ASN communications committee which oversees all publications of the Society including JASN, CJASN, Kidney News, and all the digital portals. Dr. Al-Aly is involved in a number of intramural committees at the VASTLHCS.



Hong Xian, PhD.

Co-Director

Clinical Epidemiology Center

Senior Health Scientist

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Dr. Xian is a professor of biostatistics at Saint Louis University College for Public Health and Social Justice. After obtaining his Ph.D. from the Department of Mathematics, Washington University in St. Louis, Dr. Xian received his Post-Doctoral training in Biostatistics, Statistical Genetics and Psychiatric Epidemiology in Washington University School of Medicine, and joined the faculty of the Department of Medicine in 1997. He was also appointed to the position of Health Scientist at St. Louis Veterans Administration (VA) Medical Center since 2004.

In his research career Dr. Xian has developed his expertise in latent variable analysis, statistical genetic analysis and biometrical twin modeling. One of his research focuses has been the genetic and environmental causes of psychiatric disorders, substance abuse and co-morbidity.

Dr. Xian is the PI of three projects funded by NIH/NIDA and American Cancer Society Institutional Research studying the impact of nicotine withdrawal and dependence on failed smoking cessation, and the risk factors associated with adolescent and young adult smoking. Currently he is the St. Louis site PI of a NIH/NIA funded multi-site study on cognitive aging and a co-investigator of a VA funded project investigating arm exercise as an alternative to pharmacologic stress testing in patients unable to perform leg exercise. He is also key personnel in a number of psychiatric and genetic epidemiology studies funded by NIH/NIDA, NIMH, NIAAA and NIA, and clinical trial and outcomes research projects funded by VA HSR&D and CSR&D. Dr. Xian has authored or co-authored over 100 peer-reviewed scientific publications.



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Prior to moving to St. Louis in 2005, Sumitra worked as an Associate Scientist from 2003 to 2005 and as an Assistant Scientist from 2001 to 2003 with U.S. Smokeless Tobacco Manufacturing Limited Partnership, Nashville, Tennessee. In her various roles as a scientist, she was responsible for upgrading the data processing capabilities of the technical organization, providing support to researchers in Design of Experiments, preparation of reports to CDC etc. Prior to that, Sumitra joined the Department of Corrections in Nashville, TN as a Statistical Analyst III in January 2000 and was promoted to Statistical Analyst –IV in October 2000. She was involved in the use of statistical data processing tools to data mine and analyze criminology data.

Sumitra graduated with Masters in Statistics from university of Kentucky in May 1999. Prior to relocating to United States, Sumitra worked in the area of Customer Service with Citi Bank, in Chennai India, She also has earned a Master's degree in Statistics from University of Madras in 1994. Along with her two Master's degrees in Statistics, Sumitra has also completed Certifications in Visual Basic 6.0, Visual Basic Net.

In her career as a research statistician, Sumitra has coauthored publications in several peer reviewed journals including American Journal of Kidney Diseases, Journal of Psychometric Medicine, Journal of General Internal Medicine, Journal of the American Society of Nephrology, Kidney International, and Journal of Addiction & CORESTA.



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Giovanina Gardiner, MSW, received her Master's in Social Work with a research specialization from the Brown School of Social Work at Washington University in St. Louis in December 2008. Since that time she has worked as a project coordinator, first for the Health Communication Research Lab, then at the Center for Violence and Injury Prevention. Prior to managing the Clinical Epidemiology Center she worked on project with the St. Louis VA that documented the need for suicide prevention services for Veterans in the St. Louis community.

Her research experience and interests include reducing health disparities, program evaluation, child welfare, suicide prevention, research subject recruitment and retention, protocol development and implementation, bioethical issues in working with large administrative datasets, and quantitative and qualitative data analysis. She has taught Evaluation of Programs and Services at the George Warren Brown School of Social Work, as well as Research Methods at St. Louis University. She is originally from St. Louis, and currently lives in St. Louis City with her partner and two children.

Ms. Gardiner has co-authored papers published in peer reviewed journals including *Military Medicine* and *Social Work in Mental Health*. She has contributed to abstracts and posters presented at several academic conferences, including the Society for Social Work in Research, Society for Preventive Medicine, Academy Health, and Ethnographic and Qualitative Research.



Benjamin Bowe, MPH

Data Analyst

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Benjamin “Charlie” Bowe, MPH, received his Master’s of Public Health in Biostatistics and Epidemiology from the St. Louis University School of Public Health in 2013. During his time in the MPH program he served as a Graduate Assistant for the Biostatistics Department, was a Teacher’s Assistant for the Introduction to Biostatistics class, and interned at the VASTLHCS Research Service as a Research Assistant. During his internship he worked on the Vietnam Era Twin Study of Aging, primarily in data management and data analysis.

Program Description

Clinical Epidemiology Center

The CEC is funded by “T21” (Transformation to the 21st Century) grant initiative. The CEC team includes 2 co-directors (a physician-scientist and a senior biostatistician), a biostatistician, a data analyst and a project manager.

The mission of the CEC is to improve the health and wellbeing of U.S. Veterans by conducting and supporting rigorous studies involving topics in patient-oriented investigation and corresponding research methods. The following objectives have been identified to advance the mission:

- Serve as a center-of-excellence for epidemiological research within the Veterans Health Administration, conducting rigorous studies that are relevant to the health and health care of Veterans.
- Support the conduct of methodological projects that improve the standards of research design and data analysis used in patient-oriented research.
- Create an educational environment in support of collaborative epidemiological research, including training in methods of research design, biostatistics, and data processing.

From these core objectives, the CEC has implemented a number of initiatives over the past six months that increase capacity at the St. Louis VA and have added value to the research program. This includes:

- Assistance provided to 22 investigators and research teams throughout the VASTLHCS. Assistance has ranged from proposal development and consultation, to IRB preparation, to data management, analysis and interpretation.
- Supported an investigator in writing and submitting a Letter of Intent to apply for a larger grant
- Supported the development of academic products (posters, presentation slides, manuscripts)
- Mentorship opportunities developed for interns within the research service in collaboration with the School of Public Health at Saint Louis University
- Supported the research projects of 2 residents and 4 fellows (the potential for expansion here is great as we have established the framework for encouraging residents and fellows to pursue Research opportunities at the VA)
- Leveraged the analytics provided by the CEC to support the application for new clinical trials (most notably the Million Veteran Program).
- Initiated a relationship with key stakeholders in VA database management, and began actively seeking and creating solutions to common problems with accessing VA data

- Hosted a seminar series. Since October 2013, 17 presenters have demonstrated their research or applicable skills, for the VA community.
- Planning a research symposium in June to share the work of several members of our research community, as well as provide a means of networking among the investigators affiliated with the St. Louis VA

Future plans

The CEC has a significant growth potential in the following domains:

- Expand our mentorship program, including at least two new interns (master's level students) per semester
- Expand our mentorship program among investigators to foster strong relationships between junior and senior investigators throughout the VASTLHCS.
- Expand our activities to engage more residents and fellows from the GME programs, and trainees from the associated health programs in mentored Research projects.
- Continue to grow the seminar series, including offering CME's for appropriate seminars (work has been initiated to meet these standards)
- Continue to leverage the analytic prowess of the CEC to attract more clinical trials (this is an example where resources of the CEC are used to grow research activities in other programs in Research and Education)
- Continue to work with investigators on identifying and applying for appropriate grant opportunities
- Identify collaborative opportunities locally, regionally and nationally to augment the footprint of the CEC
- Expand our relationship with the VA Informatics and Computing Infrastructure (VINCI), in order to share more information and increase access to VA databases that will allow for competitive research to take place at the St. Louis VA
- Establish the CEC as a first grade consultancy in biostatistics and epidemiology and attract consultants from the academic affiliate institutions and others.

Figure 1. Clinical Epidemiology Center Logic Model (Year 1, 2013 – 2014)

| Ultimate outcomes | | | | | |
|---|---|---|---|---|---|
| Inputs | Activities | Outputs | Short-term outcomes | Intermediate outcomes | Long-term outcomes |
| CEC staff: co-directors, project manager, biostatistician and data manger | Build and maintain relationships with investigators | Diverse group of trained investigators | Increased awareness of the CEC among investigators within the VISN. | Establish CEC as a core resource | <u>Healthy Veterans</u> |
| | Assess needs of incoming investigators | 5 Merit Review Grants submitted annually | Engaged mentor-mentee relationships among experienced and junior researchers. | Investigators engaging in clinical epidemiological research within our VISN contact the CEC as part of routine practice. | Improved standard of care at VA Medical Centers |
| Investigators | Create and maintain a weekly seminar series to share research within the VA community | 1-2 Merit Review Grants funded | Increased submission of CEC protocols and grants / increased awards funded for these protocols. | Engaged researchers throughout the VISN have a system to communicate their findings and share ideas for future protocols. | Enhanced procedures and protocols at VA Medical Centers |
| | Coordinate statistical services, methodological planning, and/or proposal writing. | Evaluation findings are used to enhance program development | Increased understanding among junior investigators of the methodologies appropriate for CEC research. | | |
| Funding base | Build capacity for data collection. | | Increased capacity among junior investigators. | | |
| VA resources, including data, space, computers | Engage senior faculty and researchers with junior faculty (mentoring program). | Weekly seminars tracked, including attendance and evaluations | | | |
| | Evaluate current activities | | | | |
| | Program management and administration activities | | | | |
| | Mobilize support and resources | | | | |

Figure 2. Clinical Epidemiology Center Services to Investigators Conceptual Model

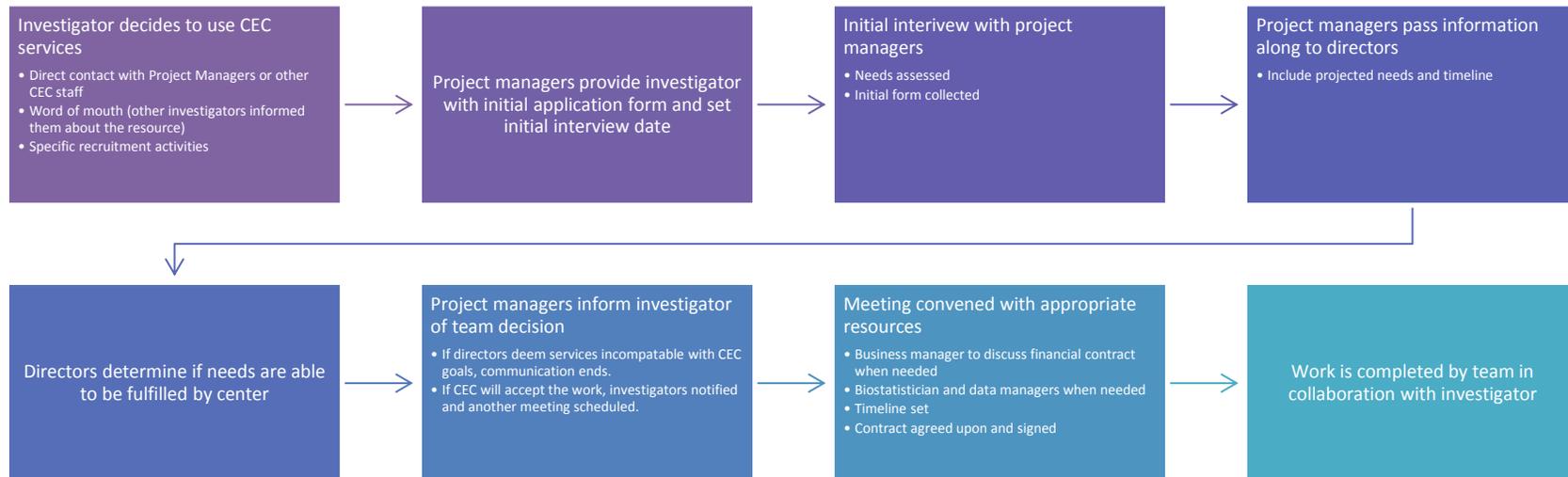


Figure 3. Research Symposium Planned Agenda

VA St. Louis Health Care System
Clinical Epidemiology Center present
First Annual Research Symposium
June 6, 2014
Big Brothers, Big Sisters Building, Second Floor

Schedule of Events

| Time | Event |
|-------------------|---|
| 8:00 a.m. | Arrive, mingle, eat breakfast |
| 8:15 a.m. | Opening remarks: Lynn E. Welling, M.D. FACP, Chief of Staff, VA Saint Louis Health Care System |
| 8:30 a.m. | CEC and VA Data: Ziyad Al-Aly, MD and Hong Xian, PhD, co-directors of the CEC |
| 8:45 a.m. | Keynote speaker: William Powderly, MD, Director, Institute for Public Health; J. William Campbell Professor of Medicine and Co-Director of the Division of Infectious Diseases, Washington University School of Medicine |
| 9:45 a.m. | CEC Research Panel: Ryan Moenster, PharmD, Zarmeena Ali, MD; Katuscia O'Brian, MA |
| 11:00 a.m. | Discussion |
| 12:00 noon | Adjourn |

Table 2. Seminar Series Presentations

| Date | Presenter | Title of Presentation |
|-------------|--------------------------------|---|
| 10/8/2013 | Ken Carson, MD | Obesity and Cancer Survivorship: Where do we go from here? |
| 10/15/2013 | Rumi Price, PhD, MPE | Invisible Wounds: From Vietnam to Afghanistan |
| 10/22/2013 | Hong Xian, PhD | Environmental Risks for Smoking: A genetically informed offspring of twins design |
| 10/29/2013 | Jay McDonald, MD | Infections after combat trauma |
| 11/5/2013 | CEC team | CEC informational session |
| 11/12/2013 | Travis Loux | Propensity-Biased Treatment Allocation in Trials with Staggered Entry |
| 12/3/2013 | Zarmeena Ali, MD | Multidisciplinary Approach to Hip Fracture Management at the St. Louis VA |
| 12/10/2013 | Wade Martin, MD | Arm Exercise as an Alternative to Pharmacologic Stress Testing: Arm Exercise Stress Testing and Outcome |
| 12/17/2013 | Deborah Hansen, PhD | Paternal environmental exposures and mechanisms of reproductive risk |
| 1/14/2014 | Brad Evanoff, PhD | Epidemiology of work-related carpal tunnel syndrome: Methodological issues and recent findings |
| 1/21/2014 | Jill Elwing, PhD | Insulin Resistance -- a Risk for Colonic Neoplasia |
| 2/4/2014 | Mario Schootman, MD | CANCELLED DUE TO WEATHER -- MOVED to 3/4 |
| 2/11/2014 | Kat O'Brain and Sarah Saunders | LGBT Veterans and Health Outcomes |
| 2/25/2014 | Ryan Moenster, PharmD | Pharmacotherapy for Osteomyelitis: Evaluating Outcomes, optimal therapy, and adverse events |
| 3/4/2014 | Mario Schootman, MD | The role of neighborhood in cancer: Why it matters where you live |
| 4/15/2014 | Banke Agarwal, MD | Early diagnosis of pancreatic cancer |
| 4/22/2014 | Benjamin Bowe | Statistical methods: An introduction to propensity score matching |
| 4/29/2014 | Steve Weintraub | Three projects: 1.) Bcl-xL deamidation; 2.) Sleep apnea and wound healing; 3.) Long vs. short half-life benzodiazepines in alcohol detoxification |
| 5/6/2014 | TBA | |
| 5/13/2014 | TBA | |
| 5/20/2014 | JoAnn Kirchner | TBA |
| 5/27/2014 | Geoffrey Gorse, MD | TBA |
| 6/3/2014 | Kaharu Sumino | TBA |

Table 3. Investigators supported

| | | |
|------------|-----------|---|
| Johnson | Frank | Proposal development (particularly data abstraction planning), submission to IRB, DART submission, grant submission |
| Ali | Zarmeena | Proposal development, formulation of research design, IRB submission, data management, analysis and interpretation |
| Scherrer | Jeff | Request to understand access to VA data |
| Crittenden | Michael | Request for assistance with proposal development |
| Krupnick | Alexander | IRB submission assistance |
| Lustman | Patrick | IRB submission assistance |
| Johnson | Kim | Proposal development, DART submission, data management |
| O'Brian | Katuscia | Data management and analysis, poster development, grant seeking |
| Martielli | Richard | Proposal development, IRB submission |
| Ochs | Kristen | Proposal development, IRB submission, data consulting |
| O'Leary | Kara | Proposal development, formulation of research design, IRB submission, analysis and interpretation |
| Moenster | Ryan | Proposal development, IRB submission, data consulting, DART submission |
| Grubb | Robert | IRB consultation |
| Buday | Sarah | Proposal development, IRB submission, DART submission |
| Vemuri | Chandu | IRB consultation, some assistance with submission |
| Knoche | Eric | Review of VA data |
| Garilus | Joseph | Request for assistance with proposal development (ultimately unable to assist given status as non-VA) |
| Price | Rumi | Review of VA data sources, proposal development |
| Al-Aly | Ziyad | IRB submission, proposal development |
| Rauchman | Michael | Assistance with assembling MVP application and site license requirements |
| Pham | Christine | Proposal development, formulation of research design, IRB submission |

VA Data

Overview: The VA maintains patient health information and other data which can be widely used for research, planning patient care, healthcare quality assessment and improvement, supporting diagnoses, operational reporting and more. VHA grants data access and information systems based on how the data will be used. The following list provides a brief description of each data access category:

- **Research Access:** VHA researchers with approved VA research protocols require access to data and information systems, for research which also includes pilot studies
- **Preparatory to Research Access:** VHA researchers require access to data and information systems to determine the feasibility of a proposed study and its significance
- **Operations/Non-Research:** VHA employees and contractors require access to data and information systems for healthcare quality assessments, operational reporting planning and general administrative duties.

Data Sources: Includes data such as inpatient data, electronic health record data, mainframe SAS datasets and the Corporate Data Warehouse (CDW). These data sources include data reports, datasets, data files, databases, data warehouses and data repositories. Following tables lists the data sources along with a brief description about each source.

| Data Source | Description |
|--|--|
| ADUSH Enrollment Files | The VHA Assistant Deputy Under Secretary for Health Enrollment files are datasets comprising of enrollment, demographic, cost, and location information for VHA and non VHA enrollees who have received VA care. |
| BIRLS Death File | Beneficiary Identification & Records Locator System is a source file for the VHA Vital Status File containing date of deaths for Veterans |
| Corporate Data Warehouse (CDW) | National repository of data from VistA and several other VHA clinical and administrative systems. |
| DSS National Data Extracts (NDEs) | The Decision Support System (DSS) is VHA's managerial cost account systems. |
| Medical SAS Datasets | The VHA Medical SAS (MedSAS) datasets contain national and administrative data on patient care encounters. |
| National Patient Care Database | Centralized database for integrated patient care data. |

| | |
|--|---|
| OEF/OIF/OND Roster | Database that identifies Veterans who have been involved in the Operation Enduring Freedom/Operation Iraqi Freedom/Operation New Dawn mission and who have an existing relationship with the VHA. |
| Pharmacy Benefits Management Database (PBM) | National database of information on all prescriptions dispensed within the VHA system beginning with fiscal year 1999. |
| VA Vital Status File | Mortality file that contains dates of death and demographics for Veterans who have received care from the VHA since 1992. |
| VistA | The Veterans Health Information Systems and Technology Architecture(VistA) is an integrated system of software applications which generate the clinical and administrative data that support day-to-day operations and contain patients' medical and health care utilization histories including demographics, episodes of care, medicines, practitioner information, diagnoses and procedures. |

Data Tools: VA environment has many analytic and data management tools that are available for use and following are the list of tools along with a brief description.

| Data Tools | Description |
|------------------------------|--|
| AITC Mainframe | The Austin Information Technology Center (AITC) is one of VA's centralized computer processing centers located in Austin, Texas |
| CAPRI Application | The Compensation & Pension Record Interchange (CAPRI) Application provides read-only access to individual VA electronic health records from all VistA sites. |
| VA REDCap Application | VA Research Electronic Data Capture(REDCap) is a free, secure Web application used to facilitate the collection and entry of research data. Helps researchers enter, store and manage their project data in a systematic manner. |
| VINCI Workspace | VA Informatics and Computing Infrastructure (VINCI) workspace is a secure, virtual computing environment which provides resources and tools to conduct studies and analyze VHA data. VINCI creates separate workspaces on VINCI servers for each research project. Project folders are provided for use by team members with access authorized by the Principal Investigator. Data storage, back-up and software are included. Research study data from a VA network server may be uploaded to a VINCI |

workspace. Downloads from VINCI are limited only to aggregate data. Person-level data may not be downloaded from VINCI without approval from the Health Services Research and Development (HSR&D) Director.

It is an analytic platform used for a variety of purposes including research, epidemiology, decision support, and business intelligence. Users have access to a wide range of software tools including commercial, government, open-source and custom analytic tools such as SAS, SQL, STATA and R. These tools are only accessible within a VINCI workspace.

Concluding remarks

The Clinical Epidemiology Center at the VASTLHCS is a core resource available to all VA investigators. It was established in July 2013 to leverage the unique strength of VA data to support and grow clinical epidemiology research. This goal is strategically important in that it positions the VASTLHCS to complement the strength of the affiliate academic institutions and capitalizes on the unique strength of VA national data.

The CEC's mission to improve the health and wellbeing of our nation's Veterans is fully aligned with the VASTLHCS strategic goal of producing Healthy Veterans.

In its inaugural year, the CEC made significant contributions to our Research programs, it has provided support to 22 investigators and helped generate extramural Research funds. The feedback from key stakeholders has been overwhelmingly positive. The CEC team will continue to work diligently to grow the CEC activities and certainly hope that we can count on the support of all our key stakeholders for continued success.

Links

For further information on the topics discussed in this document, please see the following sources:

[St. Louis CEC website](#)

Acknowledgements

The authors would like to thank the funders of the T-21 initiative for their support. Additionally, we would like to acknowledge the support of Dr. Welling and other staff dedicated to research service at the St. Louis VA Health Care System. Our most important acknowledgement goes to the honored Veterans we are proud to serve; it is our ardent hope that our work will result in better health for those who we thank for their service.

