



HEALTH SCIENCES SOUTH CAROLINA

STRATEGIC PLAN **2012-2016**



A CLEAR AND FOCUSED VISION



BOARD OF DIRECTORS



JAMES F. BARKER, FAIA
PRESIDENT,
CLEMSON UNIVERSITY



CHARLES D. BEAMAN, JR. (Chair)
CEO,
PALMETTO HEALTH



RAYMOND S. GREENBERG, MD, PhD
PRESIDENT,
MEDICAL UNIVERSITY
OF SOUTH CAROLINA



BRUCE HOLSTIEN
PRESIDENT & CEO,
SPARTANBURG REGIONAL
HEALTHCARE SYSTEM



HARRIS PASTIDES, PhD, MPH
PRESIDENT,
UNIVERSITY OF SOUTH CAROLINA



MICHAEL C. RIORDAN
PRESIDENT & CEO,
GREENVILLE HOSPITAL SYSTEM
UNIVERSITY MEDICAL CENTER

IN 2004, SOUTH CAROLINA'S research institutions and hospital systems recognized the power of partnership in creating Health Sciences South Carolina (HSSC), the nation's only statewide biomedical research collaborative. Since our inception, through the continuous support of The Duke Endowment, we have been committed to transforming South Carolina's public health and economic well-being through research.

Today, in 2012, we set forth a new strategic plan that will chart the course of HSSC for the future. With it, we fine-tune the purposes and goals of our organization. We also recommit to harnessing all of the strengths of HSSC and its partners to improve health, health care, and health research.

The HSSC board and senior leadership, affiliate members, and related statewide health organizations worked together to develop this plan. Everyone involved showed enthusiasm, and we are grateful for the way they embraced the challenge. With input from our key stakeholders, this document details precisely where we will focus our efforts, the progress we expect to achieve, and the performance targets we will use to measure our effectiveness.

As we move forward, every major new initiative will face an important question: Does it advance our strategic plan? A laser-like focus on initiatives that support our plan will enable us to move more quickly and more efficiently to advance health care in South Carolina. With this clear and focused vision, HSSC will remain an organization with a powerful sense of purpose and one that can achieve remarkable results.

Sincerely,

JAY MOSKOWITZ, PhD
PRESIDENT AND CEO, HEALTH SCIENCES SOUTH CAROLINA

February 2, 2012

TABLE OF CONTENTS

EXECUTIVE SUMMARY	3
SITUATION ASSESSMENT	4
State of Current Situation	4
HSSC VISION	6
Emerging Research Priorities and Opportunities for Advancing the Health of the Population	6
Member Needs & Priorities	7
A Focused Vision	8
HSSC MISSION	9
Former Mission	9
Adopted Mission	10
CURRENT AND PLANNED SCOPE OF SERVICES	11
Solutions & Services	12
OPTIONAL DATA TOOLS AND SERVICES	15
RESEARCH SUPPORT	17
HSSC BUSINESS MODEL	18
HSSC Sustainability Requirements	18
Current Funding	19
HSSC Sustainability Model	20
GOVERNANCE, ORGANIZATION & LEGAL	24
IMPLEMENTATION PLAN	27
Key Activities	27
Member Requirements for Optimal Results	28
Strategic Plan Risk Assessment	29
Evaluation	30
APPENDICES	31
Appendix A: CDW Development Plan Timeline	31
Appendix B: Achieving Data-Driven Outcomes in South Carolina: Our Aims	32

Executive Summary

> SITUATION

- HSSC is a member-driven collaborative organization comprised of the leading clinical research, education and care delivery organizations in the state of South Carolina.
- The members each have unique strategies for developing and supporting their research and clinical agendas and are looking to HSSC to provide a range of support services that help enable their individual efforts.
- HSSC plays a pivotal role as a convener and organizer of multi-institutional research.
- HSSC has developed a unique Clinical Data Warehouse (CDW) which is in the early stages of deployment and has the potential to provide high value to the participants.
- HSSC is significantly supported by Duke Endowment grants and will transition to a self-sustaining business model over the next two years.

> DIRECTION

- HSSC will update its Mission statement to emphasize three priorities: 1) creating a unique and comprehensive clinical data store; 2) developing and deploying information management tools that improve the efficiency of research processes; and 3) serving as a convener for collaborative research initiatives.
- HSSC will pursue a focused implementation approach to this Mission so as to enable and enhance member research and clinical programs particularly including the area of patient-centered outcomes research.
- HSSC will organize its business model around the delivery of a set of core and optional services with a mixed funding model of member annual dues, fees for optional services and new research grants.
- HSSC will enhance its leadership team and organizational structure to be better positioned to pursue new grants, fully leverage the data services assets, and enhance the member engagement model.
- HSSC has established a set of performance targets to be achieved over the next three years which include adding data for a minimum of 60% of all South Carolinians to the clinical data warehouse, having a minimum of five (5) member organizations actively use the CDW for research and/or clinical purposes, and becoming a self-sustaining enterprise through an expanded portfolio of research and demonstration grants.

Situation Assessment

IN SEPTEMBER 2011 HSSC RETAINED MANATT HEALTH SOLUTIONS (Manatt) to work with them to complete this five year Strategic Plan. Manatt conducted interviews with the HSSC Board and senior leadership, affiliate members as well as representatives from Blue Cross Blue Shield of South Carolina (BCBSSC), the South Carolina Hospital Association (SCHA), and The Duke Endowment. An assessment of the informatics capability that HSSC has developed was completed, as was a comprehensive review of the cost structure. Manatt and HSSC conducted a retreat with Board members, affiliates, and related statewide health organizations (including BCBSSC, the State Department of Health & Human Services, and Premier) on November 4th, 2011, to engage them in considering HSSC's strategy and to gain their input. Manatt participated in a HSSC Policy Steering Committee meeting on December 15, 2011 and conducted a special meeting of the Board on January 10th, 2012. Each Board Member also submitted written comments regarding issues of importance to them. The February 2nd, 2012 meeting of the Board was dedicated to reviewing and discussing the Strategic Plan.

Assessment of Current Situation

Established in 2004, Health Sciences South Carolina (HSSC) is the nation's only statewide biomedical research collaborative and is committed to transforming South Carolina's public health and economic well-being through research. HSSC has evolved as a research-centric organization, working closely with its member organizations in four primary areas:

■ **Support for the SmartState (formally Centers of Economic Excellence) Program.** HSSC currently provides support for twelve, health-based centers, and works closely with thirteen others.

■ **Multiple, targeted initiatives to develop protocols that will improve care for South Carolina residents.** HSSC and the South Carolina Hospital Association developed and deployed standardized protocols for decreasing the rate of central line infections and HSSC, SCHA, and BCBSSC are collaborating on a new program intended to decrease hospital readmission rates after discharge for a heart-related event.

■ **Facilitating provider adoption of EHRs and achievement of meaningful use.** HSSC established South Carolina's Regional Extension Center (REC), CITIA-SC, which is one of the first RECs in the nation to meet their provider sign up target.

■ **Generating information technology solutions.** HSSC has partnered with the South Carolina Clinical and Translational Research Institute (SCTR), the CTSA housed at MUSC, to develop and deploy a wide range of information technology (IT) capabilities including master patient index, lab hub, eIRB and are developing a state-of-the-art permissions management capability to span multiple hospital systems. HSSC has also built a clinical and research information system (based on Recombinant software) including a real-time Clinical Data Warehouse (CDW) which is receiving HL7 (clinical transactions) messages from four member hospitals.

Situation Assessment

In summary, with the support of its member organizations, generous core development grants from The Duke Endowment, partnership with SCTR, and the receipt of over \$20m in federal funding, HSSC is facilitating the development of a comprehensive research infrastructure unique in the country. As it comes fully online, this infrastructure will underpin HSSC's and its members initiatives to improve health care through the use of data-driven, evidence-based research. The results will include improvements in health status, education, workforce development and economic wellbeing.

As HSSC has pursued opportunities that have arisen, its programmatic agenda has broadened. Some program directions may potentially overlap with its members' own initiatives and with other organizations pursuing similar goals including the CTSA located at MUSC, SCHA and Premier. A central dimension of the HSSC strategic planning process has been to determine what is the unique area of concentration which will differentiate HSSC, adding value to its members and to the broader health care community. In consultation with the HSSC Board members and the HSSC Executive Team, Manatt determined that HSSC's new strategic plan needs to accomplish the following:

a. Establish clarity on HSSC scope of mission and services. Members seek a clear emphasis and focus for HSSC development: non-duplicative with member's own activities, and supportive of their respective initiatives in research, primarily, and clinical improvement, secondarily.

b. Improve communication and organizational linkages between HSSC and each member. Communication with the participants at an operational level will be increasingly important as HSSC's capabilities move from development into production, and HSSC must strengthen its interactions with members' clinical and operational staff.

c. Implement a viable sustainability plan that establishes the basis for longer-term success. Despite other sources of funding, including member support, HSSC is dependent on The Duke Endowment funding for the immediate future. A long term sustainability model for HSSC requires a demonstrable ROI for the participants linked either to their ability

to secure grants, avoid costs they might otherwise incur, and/or provide data that can be used in their care improvement and coordination efforts. It will also require HSSC to continue to succeed in securing federal and commercial grants, in particular those in which it facilitates multi-institution collaborations, and to have its infrastructure and staff included integrally in member's own grant funded programs.

d. Achieve meaningful impact on the health of South Carolinians. As judged by the members, HSSC's most unique quality is its ability to aggregate clinical data across participating organizations, with the potential to inform research in novel ways as well as to support innovation for creating the next generation of care delivery. The highest priority that HSSC Board members have articulated is for HSSC to provide a shared service that will deliver analytics and information gleaned from combined data sets. To achieve meaningful impact, the data set must include sufficient numbers of patients – for instance, 60% of the State – so that it can serve the needs of the members.

HSSC Vision

Emerging Research Priorities and Opportunities for Advancing the Health of the Population

Nationally, there is heightened interest in research that can improve the health of populations, which broadly falls under the category of patient-centered research, which includes comparative effectiveness research, clinical trials, community engagement, and related areas. The recently established Patient-Centered Outcomes Research Institute (PCORI) has defined its proposed national priorities and established its first research agenda, which reflects broad input from a number of federal agencies.¹

PCORI is one important funding opportunity for the HSSC members, and more importantly represents a consensus on how best to approach patient-centered research. Because of HSSC's expertise, track record and reputation as a convener, patient-centered research will represent a significant opportunity for South Carolina to play a nationally leading role in an important new area.

PCORI PROPOSED RESEARCH AGENDA

Comparisons of Prevention, Diagnosis, and Treatment Options. Research should focus on 1) clinical options with emphasis on patient preferences and decision-making, 2) biological, clinical, social, economic, and geographic factors that may affect patient outcomes.

Improving Health Care Systems. Research should focus on 1) ways to improve access to care, receipt of care, coordination of care, self-care, and decision-making, 2) use of non-physician health care providers, such as nurses and physician assistants, and the impact on patient outcomes, 3) system-level changes affecting all populations, diseases, and health conditions.

Communication and Dissemination. Research should focus on 1) strategies to improve patient and clinician knowledge about prevention, diagnosis and treatment options, 2) methods to increase patient participation in care and decision-making and the impact on health outcomes, 3) communication tools that enhance decision-making and achieve desired outcomes,

4) ways to use electronic data ("e-health records") to support decision-making, 5) best practices for sharing research results.

Addressing Disparities. Research should focus on 1) ways to reduce disparities in health outcomes, 2) benefits and risks of health care options across populations, 3) strategies to address health care barriers that can affect patient preferences and outcomes.

Accelerating Patient-Centered and Methodological Research. Research should focus on 1) ways to improve the quality and usefulness of clinical data in follow-up studies, 2) methods to combine and analyze clinical data that follow patients over time, 3) use of registries and clinical data networks to support research about patient-centered outcomes, including rare diseases, 4) strategies to train researchers and enable patients and caregivers to participate in patient-centered outcomes research.

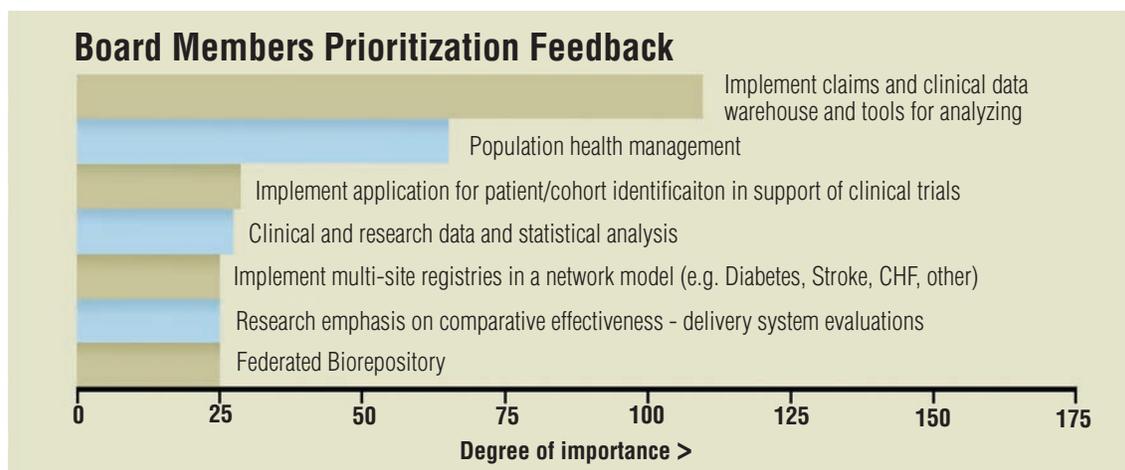
¹ Patient-Centered Outcomes Research Institute, Draft National Priorities for Research and Research Agenda, Version 1, January 23, 2012

HSSC Vision

The PCORI Research Agenda ultimately rests on a foundation of good data which can be used to guide research efforts. Each of the HSSC members in their own fashion is developing capability to conduct some aspect of patient-centered research and then create interventions which will improve the health of the populations that they serve. HSSC's role will be to provide the "utility infrastructure" and the coordinating support needed to make the member's research and patient-centered improvement initiatives more successful.

Member Needs & Priorities

Manatt asked HSSC Board Members to define HSSC's unique value propositions to them and to articulate which services will provide the basis for a more defined HSSC vision². From a set of sixteen (16) potential services, the following seven (7) emerged as priorities for the Board. This feedback is provided below:



Initiative	Description
Implement claims and clinical data warehouse and tools for analyzing	Provide a shared service that will provide analytics and information gleaned from combined data sets
Population health management	Provide data and tools to evaluate and improve population health
Implement application for patient/cohort identification in support of clinical trials	Deploy application to mine HSSC data for patient/cohort identification
Clinical and research data and statistical analysis	A service to capture and analyze clinical or research data on demand
Implement multi-site registries in a network model (e.g. Diabetes, Stroke, CHF, other)	Source pre-populated registry templates and link to HSSC CDW for use at member care delivery sites
Research emphasis on comparative effectiveness - delivery system evaluations	Target research grants that establish and evaluate effectiveness
Federated Biorepository	HSSC-wide information management system for managing bio-sample data and linking it to CDW. Samples managed by participating institutions directly.

² Board and stakeholder retreat, November 4, 2011; Retreat exercise combined with follow up discussions that were specific to HSSC supporting organization priorities, and Manatt analysis.



HSSC Vision

Based on this feedback, and confirmed with comments received during post-retreat interviews and conversations, the following emerged as the foremost value propositions for HSSC's future role with the members:

■ **First**, HSSC's unique value lies with : (1) the collective size of health care reach which should approach two thirds of the State's population; (2) statewide coverage; (3) ability to provide rapid access to shared data; 4) ability to receive Federal and foundation grants; and (5) emerging analytical ability.

■ **Second**, HSSC's most critical asset is its ability to aggregate clinical data across participating organizations, with the potential to inform research in novel ways as well as to support the next generation of care delivery.

A Focused Vision

These value propositions emphasize HSSC's role as an enabling services provider in support of each member's research and/or clinical activities. HSSC has implemented the ability to capture real-time clinical data from each member, cleanse and organize the data to ensure its quality and usability, and provide member access to the aggregated clinical data in forms that meet their research and clinical needs. The CDW, combined with an easy-to-use research administrative process that crosses institutional boundaries, is a unique advantage that no other state has delivered.

■ **In the research domain**, HSSC will provide researchers with a tool that allows them to assess potential patient study populations before proceeding through the IRB process, saving them significant time and resources. Additionally, HSSC will deliver a data repository with a volume of data sufficient to support a broader range of studies than any individual institution could deliver, and will provide researchers with an efficient, readily accessible, analytical toolset to allow them to access and use the data in a protected and secure way. This enhanced data capability will help each member organization to substantially

■ **Third**, HSSC has a unique role as a research convener with an opportunity to support its members' research agendas by improving their ability to successfully apply for and deliver grants, particularly with respect to clinical research (in terms of identifying potential participants), and comparative effectiveness (in terms of providing the data platform useful for establishing and evaluating effectiveness).

differentiate their research programs from competing national organizations and improve South Carolina's ability to compete for and win a greater percentage of the research grant opportunities. Furthermore, the effectiveness and quality of the research will be enhanced through the use of a larger and higher quality pool of data.

■ **In the clinical domain**, HSSC will repurpose the clinical research data to enable member initiatives focused on clinical effectiveness, reduction of disparities, and care delivery efficiency. By providing clinical leaders access to cross-institutional data, HSSC will enhance member ability to identify best practices and compare their program effectiveness with others from across the state. As a result of these enhanced analytical capabilities, HSSC members will be able to develop or improve their evidence-based clinical programs resulting in safer and more effective care for their patients.

The more data that is fed into the clinical data warehouse (in terms of range of data as well as volume of patients) the greater the utility of the service.

INSPIRED by our mission

FORMER MISSION

Due to the heightened emphasis on clinical data aggregation, research support solutions, and enabling the members' research and clinical initiatives, HSSC has recommended that the Board adopt a new mission statement, as an evolution of its prior Mission, and to reflect the more "operational" and implementation-oriented nature of HSSC as a member-driven shared resource.

HSSC MISSION STATEMENT (Adopted January 20, 2006)

> **THE MISSION** of Health Sciences South Carolina is to conduct collaborative health sciences research to improve the health status, education, workforce development, and economic well-being of all South Carolinians.

With regard to **Health Status**, we will accomplish this by:

- Translating research results into clinical practice
- Promoting wellness and implementing disease management programs to reduce disparities in health status
- Improving patient safety and clinical effectiveness

With regard to **Education and Workforce Development**, we will accomplish this by:

- Improving the quality of and access to health-related education
- Increasing the number of health-related professionals trained

With regard to **Economic Well-being**, we will accomplish this by:

- Attracting a significant increase in funding to South Carolina for health sciences research
- Attracting nationally prominent scientists to South Carolina, bringing intellectual property to stimulate the state's knowledge-based economy
- Creating and attracting health-related companies to South Carolina that will increase the number of highly skilled jobs

ADOPTED MISSION

The following updated Mission statement provides a more concentrated focus for HSSC as it moves into an operational and implementation phase.

HSSC MISSION STATEMENT (Adopted February 2, 2012)

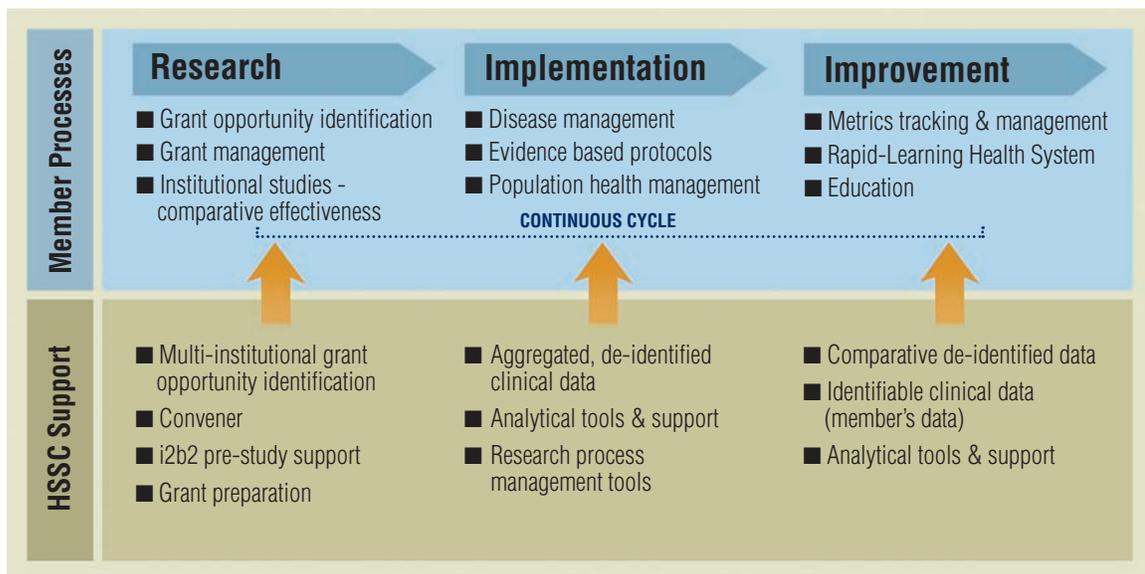
➤ **THE MISSION of Health Sciences South Carolina is to support our members in improving the health of all South Carolinians by collaborating across the state of South Carolina with the goal of enabling evidence-based research. HSSC will achieve this by:**

- Creating a unique and comprehensive clinical data store which collects data from providers, enhances its usability, and makes it available in an easily accessible form for participants to use for clinical improvement and research purposes;
- Developing and deploying information management tools that improve the efficiency and effectiveness of each member institutions research processes, including the ability of researchers across South Carolina to collaborate;
- Serving as a convener for the identification, preparation, development and implementation of innovative collaborative research initiatives which have the potential for improving the health of South Carolinians through evidence-based biological and clinical research informed by care givers, patients, and providers.

Through its role as a collaborative organization, HSSC will engage and encourage its members to create and develop new products, new jobs, and new industries that positively impact economic growth; contain and reduce health care costs; minimize health care disparities; improve patient safety and effectiveness; improve access to health care services; and improve the patient care experience.

Current and Planned Scope of Services

The new mission statement focuses the efforts of HSSC on core bioinformatics data services and secondary clinical services to support its member organizations and emphasizes the “shared services” dimension of HSSC’s role. For the members to realize the value from this relationship entails close coordination at the process level between the members and HSSC, as illustrated below:

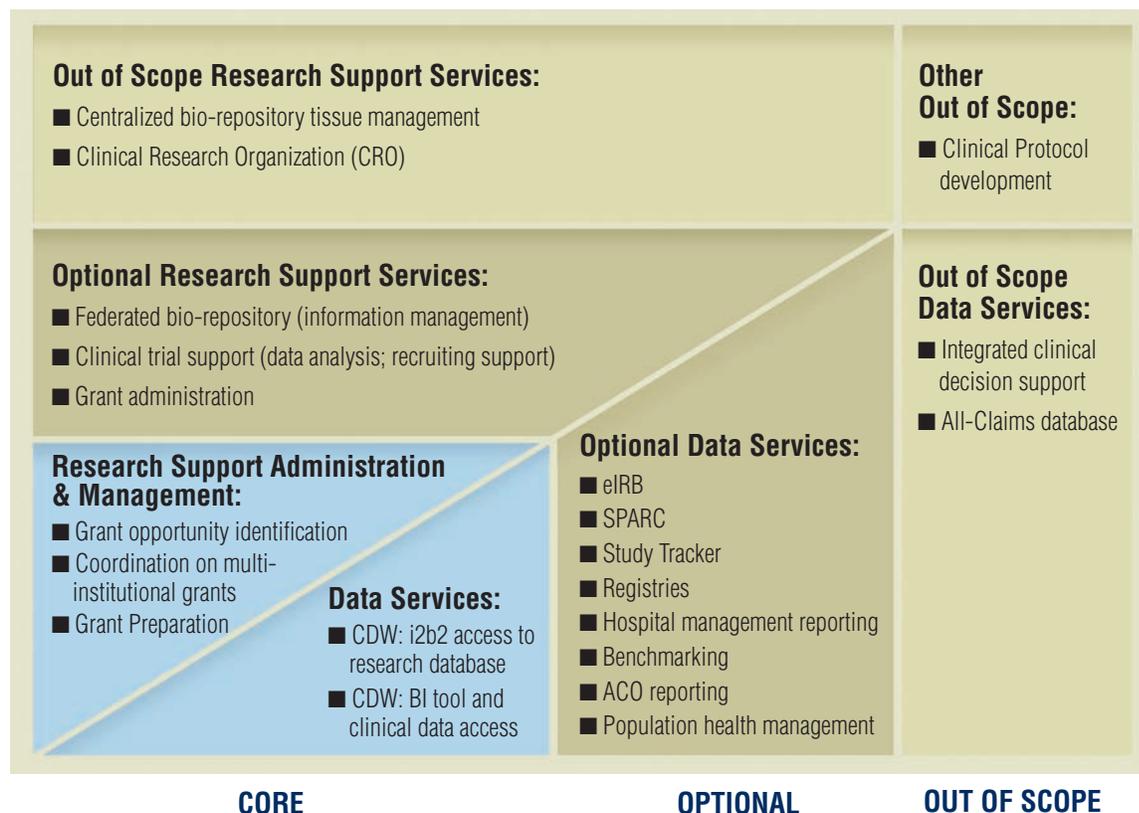


Therefore, HSSC will provide highly efficient delivery of the core utility data and research support services at a modest incremental cost to the participants. Services have been characterized in three ways:

- **Core Services:** These are services which each of the HSSC members will receive;
- **Optional Services:** These are “packages” of services that members may opt into but will be fee based;
- **Out of Scope Services:** These are services that HSSC will not be involved in delivering.

Current and Planned Scope of Services

The HSSC scope of services is illustrated below, and forms the basis for the implementation of a sustainable business model.



SOLUTIONS & SERVICES

Data Services

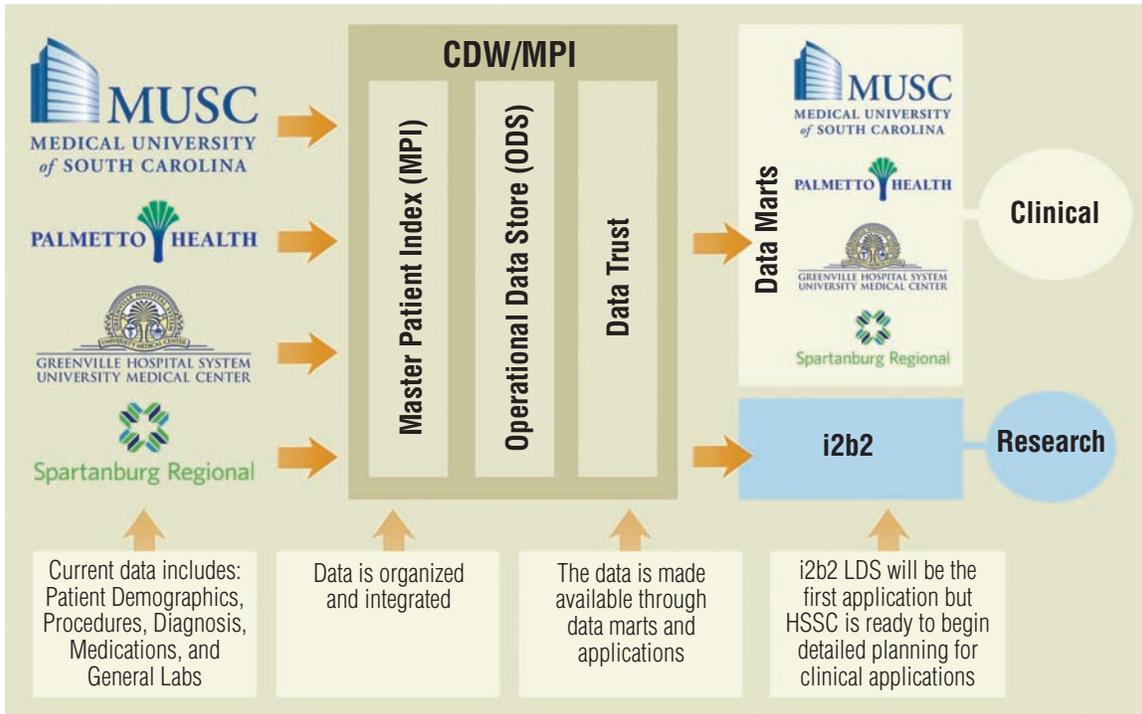
A top priority identified by the HSSC membership is the aggregation of clinical data in a data warehouse to be used primarily as a research resource and secondarily to support member clinical requirements (i.e. from which they can extract relevant data). This Clinical Data Warehouse (CDW) coupled with a Master Patient Index (MPI), which allows for the matching of clinical records from across disparate information systems, an HL7 interface engine, which allows for the real time input of clinical data from the member Electronic Healthcare Record (EHR) systems, and the i2b2 application, which allows researchers to access and use the data, form the core data & bio-informatics service. As of January 2012 the CDW has data for 1.15m patients from MUSC and will expand

to over 2.7m patients as the other members data are added which is approximately 60% of the state's total population. Based on current plans, HSSC will reach or exceed this goal within two years, in 2014.

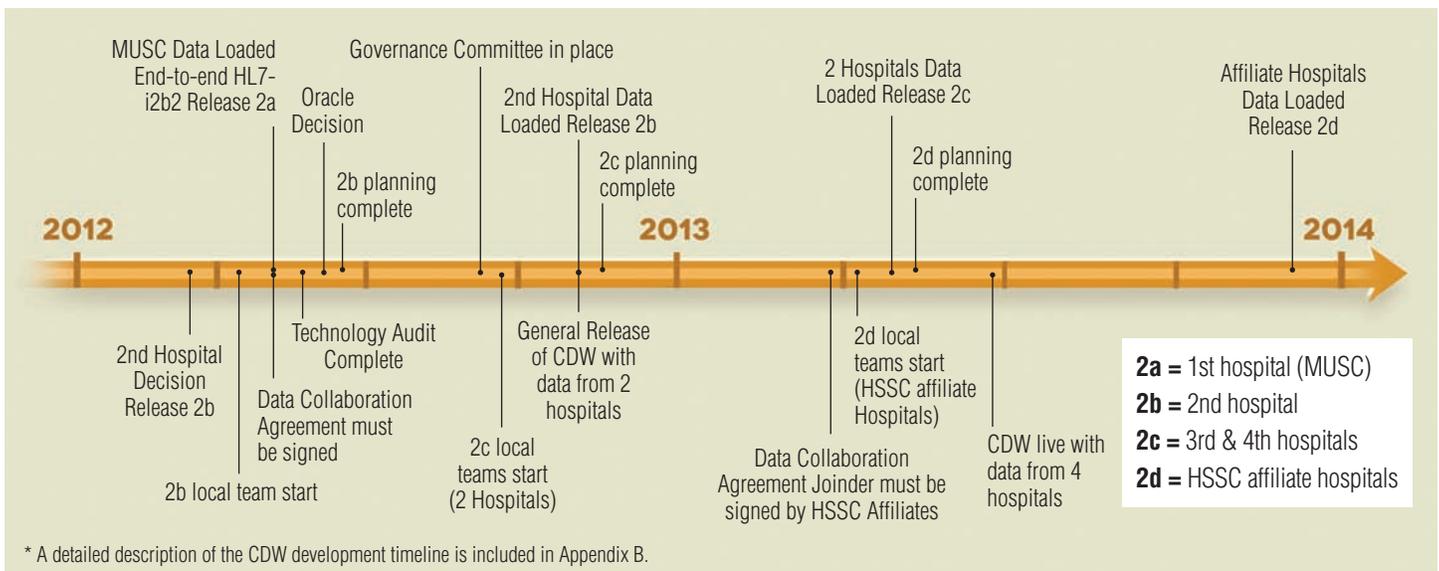
Although the CDW has been deployed for research purposes, the architecture supports secondary uses for the aggregated or non-aggregated data including clinical data marts that individual members could deploy for their unique purposes. Clinical data marts are an example of optional services that HSSC can provide which leverage the information infrastructure.

Current and Planned Scope of Services

The architecture is designed to protect the security and the privacy of the data as well as the intellectual capital associated with any member data assets. The following graphic describes the CDW architecture:



The CDW architecture is a sophisticated and highly scalable set of technologies. HSSC has tested this architecture using data contributed and staged from each member institution and is currently deploying the CDW for research purposes for one member institution, MUSC. The on-going development plans for the CDW include rollout of this capability to the remaining members over the next two years.

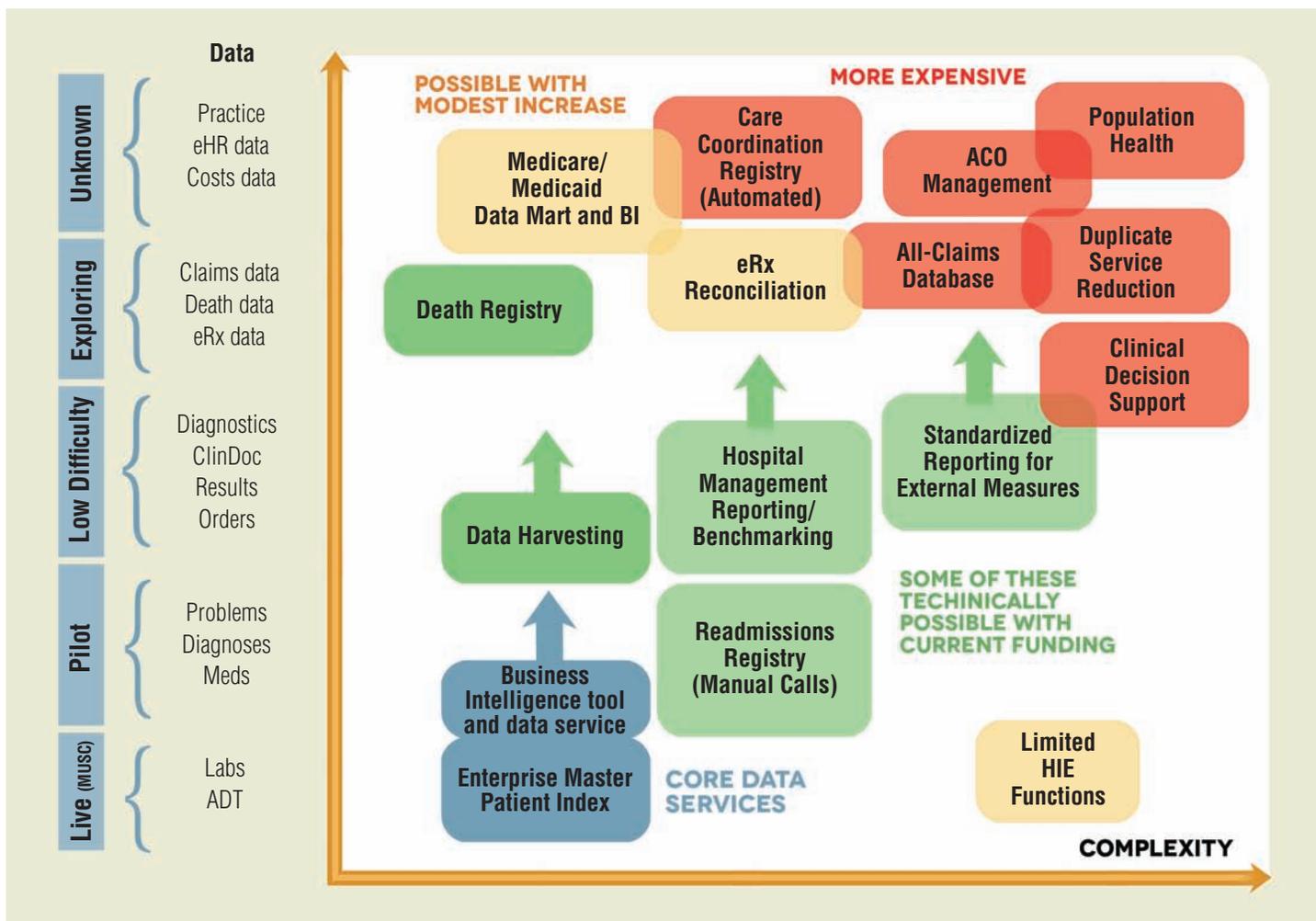


* A detailed description of the CDW development timeline is included in Appendix B.

Current and Planned Scope of Services

The CDW HL7 architecture allows for the efficient real-time capture of clinical data from the member EHR systems. Currently, the data that is captured includes administrative (ADT) and lab data along with some diagnosis, problems and medications data. To fully leverage the value of the CDW, members will need to expand the HL7 interfaces to include orders, results, clinical documentation and other clinical data types. Additionally, as members extend their care delivery organizations to include physician practices, clinics, post-acute care organizations and other hospital partners,

the data from these entities should be included in the CDW so that the full care continuum is represented and available for research and analytical purposes. Although current development plans for the CDW focus on supporting research functions and adding each member to the data repository, the CDW could be used for a broader range of clinical capabilities as depicted in the following chart. Many of these potential future uses of the CDW will be delivered as customized solutions for individual member organizations:



Optional Data Tools and Services

WITH GRANT-FUNDED SUPPORT ACCRUING BOTH TO SCTR AND TO HSSC, the Biomedical Informatics team has developed a series of information management tools which streamline the research management processes and support collaboration. As these tools are completed, they become available to the members for use. The use of these tools can be further extended – for instance, by leveraging clinical data services to identify potential patient populations for analysis or for clinical trial recruitment, identification of potential collaborators, and data analytical support service. The current development and support status of these optional tools and services is indicated in the fishbone chart below.

These services are largely available for roll-out across the HSSC members and include:

■ **eIRB:** a multi-institutional study or clinical trial system that facilitates collaboration across organizations and streamlines the IRB workflow processes.

■ **Research Permissions Management System (RPMS):** a system which allows patients to access and sign their permissions using an iPad. The permissions are then stored electronically at the institution and within the CDW making them accessible to the research community. Patients can access their permissions through a portal where they can review and change them.

■ **Palmetto Profiles:** a customized variant of Harvard Profiles Research Networking Software, designed to enable local branding. It is one solution for a CTSA strategic goal, which is the push for collaboration tools for resources of all kinds. Palmetto Profiles enables the discovery of research expertise within the Health Sciences South Carolina (HSSC) consortium and at its member institutions including the Medical University of South Carolina (MUSC), Clemson University, Greenville Hospital System University Medical Center (GHS), Palmetto Health, and Spartanburg Regional

Healthcare System. This tool allows for new ways to network and collaborate between researchers, between mentors and mentees, between the research community and industry partners, and much more. MUSC has been chosen to pilot this new product and will be the first of the institutions listed to access the system.

■ **REDCap:** a tool from Vanderbilt University for allowing researchers to create a database and an associated web-based Case Report Form for research studies, as well as managing user-configurable surveys. It provides a complete data capture environment for clinical studies that is easy-to-use by researchers, and also enables research institutions to centralize the important data assets in a single enterprise database. It solves a pressing security risk as well as reducing the considerable redundancy that many institutions face as researchers design their own custom solutions for doing this, often storing PHI in non-secure locations. It is a popular application with a national/international following and has significant CTSA support.

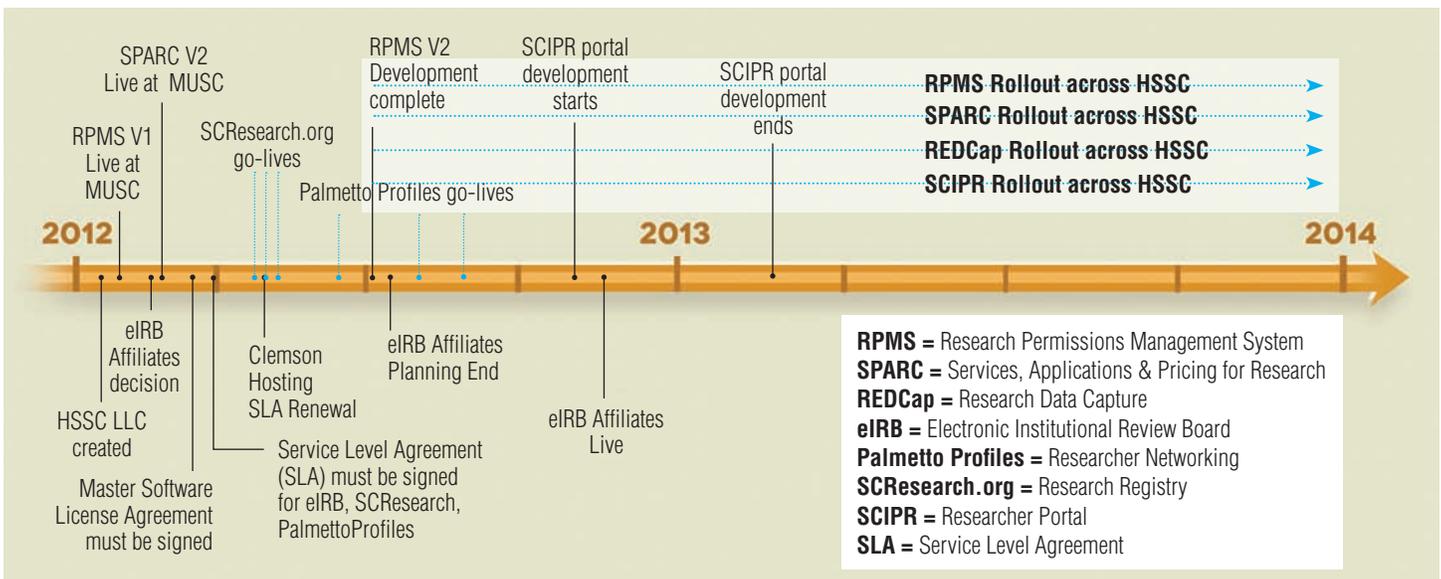
Optional Data Tools and Services

■ **SCResearch.org:** a research registry with data drawn from the eIRB system. Since the eIRB system tracks all human subjects research activity, a simple web service is used to express active studies as a searchable registry on a public facing portal. This enables the public to search by key words for active research across South Carolina, and make contact with the research teams. SCResearch.org is built into the eIRB workflow. Enabling SCResearch.org for an institution is of negligible technical difficulty as an offshoot of eIRB usage.

■ **SPARC:** a tool to manage institutional Research services, study design, study fulfillment and cores. From an administration viewpoint, SPARC manages a catalog of research services, providing linkage with funding sources, the services themselves

and multiple pricing models. Services are bundled by core, domain or institution, and arranged in a web portal, where researchers can browse and compose research studies by selecting services using a “shopping cart” paradigm. This enables accurate study pricing at the research study scale and cost management for entire cores. Once approved, SPARC is then used to track study and service fulfillment, providing a bedside tool (Study tracker) and back office tools for cost allocation and invoicing. SPARC hits a sweet spot in study management – it has been designed with significant input from researchers and research administrators, and has garnered demand from CTSA administrators nationally even before complete, as existing tools in this space are considered inadequate.

The current development plan and implementation schedule for the optional tools is as follows:



Research Support Administration and Management

HSSC CURRENTLY PROVIDES A RANGE of administrative and management support services including identifying new multi-institution grant opportunities, convening member organizations to propose and subsequently manage new research initiatives, and preparing grant submissions. HSSC has demonstrated its ability to prepare winning applications and to successfully manage, in partnership with member institutions, the grant lifecycle. There are funding agencies – such as PCORI, Agency for Healthcare Research and Quality (AHRQ), and Center for Medicare & Medicaid Innovation (CMMI) – that encourage collaborative submissions for which HSSC is well suited. HSSC will prioritize the identification and pursuit of the following types of grants and agreements:

- Convener grants/agreements for demonstration programs and pilots across HSSC members (e.g. CMMI Innovation Challenge Collaborative Agreement);
- Member grants which leverage the clinical data and provide opportunity for enhanced analysis;
- The identification and pursuit of attractive industry relationships and contracts – for instance, for efficacy studies of devices, which leverage the outcomes information which can be derived from the CDW;
- Grants which are cross sector (links HSSC, SCHA, Federally Qualified Health Center (FQHC), and other organizations);
- Grants which are oriented to public-private collaborations and which bring into play the diversity of HSSC participating organizations;
- Grants from agencies such as NIH, PCORI, CMMI, CDC, DoD, and Foundations

The grantee can be HSSC or the member institution Principal Investigator; grants will continue to be processed through the South Carolina Research Foundation, which provides for a collaborative participation by HSSC and the respective member(s) in the research indirect costs and therefore the ability for HSSC to offset the costs of supporting this effort.

Although HSSC has been successful in pursuing important new grant opportunities, its resource base for doing so is ad-hoc at best. The types of grants that HSSC will pursue will require dedicated project management, financial expertise, and subject matter expertise drawn from the members. HSSC requires the

ability to identify, develop and submit complex grant applications (particularly as a facilitator/convener, and in support of members) and will need to develop the capability to do so, which will include core staff which may be shared and/or contracted from the HSSC participants. In particular, HSSC will require a small team of grant developers (starting with an immediate need for 1 FTE grant program manager) who identify, project manage, and will be responsible for the grant portfolio. The cost to hire this team will be borne initially by HSSC's Implementation Science Core and subsequently become a component of HSSC's research support administration and management budget and supported by indirect cost recovery.

HSSC Business Model

HSSC HAS BEEN SUPPORTED BY GRANT FUNDING from The Duke Endowment, member yearly dues, and federal grant support. As it approaches FY 2016 HSSC will reduce its reliance on The Duke Endowment and need to become self-sustaining for its core operations (as described as “Core Services”) and to have a clear path for delivering additional value added services to the members.

HSSC Sustainability Requirements

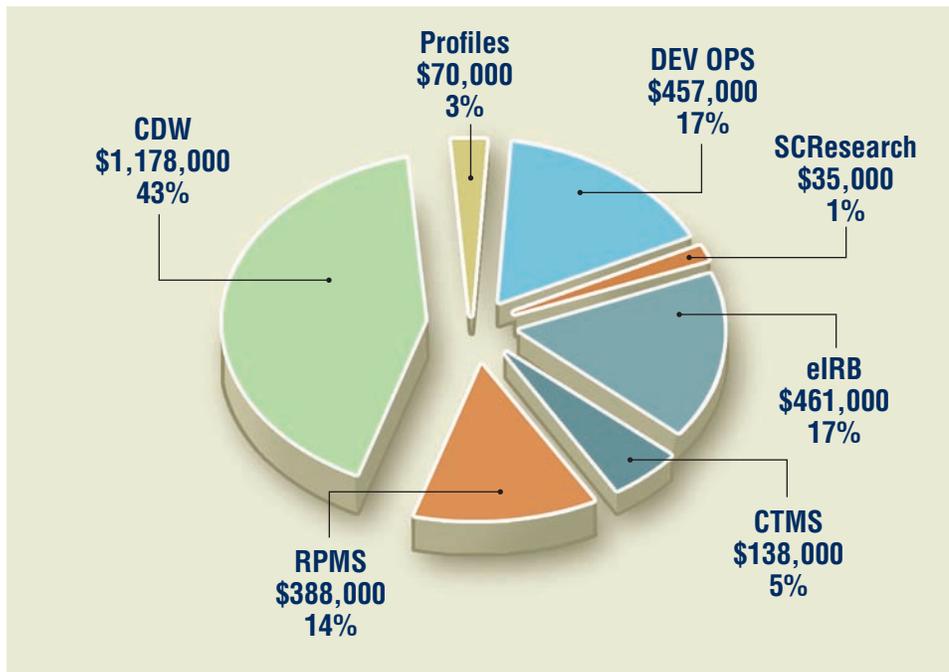
For the purpose of this Strategic Plan, HSSC’s sustainability has been defined as the ability to continuously operate core services for the members. Manatt and HSSC completed a cost analysis, based on the core services definition, to establish the baseline cost requirements.

The projected cost to support HSSC Research Support Management & Administration which includes the core research support services is \$1.8M per year. This amount includes current

staff, facilities and other costs to run and maintain HSSC, as well as projected costs to enhance the grant identification and proposal development team.

The cost to support HSSC’s Data & Bio-Informatics Services is approximately \$2.8M per year which includes core information technology services and proposed optional services and tools. The core services represent \$1.7M of that cost (CDW and Dev/Ops Support).

Costs for each of the information services and tools



HSSC Business Model

BASED ON THIS COST ANALYSIS, HSSC will require approximately \$3.5M per year (\$1.8M Research Support Administration & Management and \$1.7M Data & Bio-Informatics Services) to sustain its portfolio of core services and assets and an additional \$1.1M per year to sustain the existing optional data services and tools. Additionally, HSSC will require a reserve of approximately \$2m for investment in new opportunities, to protect against unforeseen risks, and to prepare for the transition

to sustainability. Any newly identified services and tools will require additional funding.

Current Funding

In addition to the existing sources of grant funding, member fees of \$94,841 per year/per member provide \$853,569 per year. The bulk of HSSC funding is provided by The Duke Endowment as well as other federal grant sources. The historic and current grant funding for HSSC is as follows:

	Federal	First Duke Grant (2006-2011)	Second Duke Grant (2012-2015)
Regional Extension Center	\$5.5m		
Research Permissions Management System	\$4.8m		
Palmetto State Providers	\$8m		
Institutionalization		\$2.8m	\$2.25m
CDW and eIRB		\$8.2m	
Clinical Trial Needs		\$0.2m	
Clinical Activities		\$0.8m	
Methodological Statistical Support		\$9m	
Informatics and Clinical Trial Infrastructure			\$5.5m
Knowledge Discovery and Analysis			\$0.5m
Clinical Trials and Evidence Based Medicine			\$1.2m
Implementation Science			\$1.6m
TOTAL	\$18.3m	\$21m*	\$11.05m

* Approximately \$1.7M from the first Duke Endowment Grant has been committed but not invoiced and a portion of the \$8M for clinical activities has not been committed.

HSSC Business Model

HSSC Sustainability Model

The following parameters have guided the development of the HSSC sustainability model, and flow from the prior discussion of Scope of Services:

1 HSSC is fundamentally a not for profit research focused organization, and a sustainability option of becoming a wholly for-profit would take it far afield from its core mission;

2 Another sustainability option would be to increase the membership and affiliates, potentially beyond South Carolina; however the focus on the 7 members remains integral to its future success and ability to drive value;

3 The economics of grant funded organizations indicate that 25% to 30% of an organization's resources will need a separate source of funding (the "research structural deficit");

4 HSSC members should distinguish between development of new applications from the resources needed to support their ongoing maintenance. Grant dollars can be utilized to develop new services and applications but sustainability must rest on their value to the members, who should pay for their support accordingly;

5 The continued partnership with SCTR spreads the cost of the Bio-Informatics team across HSSC and the CTSA, providing both a necessary economy of scale and an important source of intellectual capital. The Bio-Informatics program under the direction of Iain Sanderson is 50% funded by HSSC and 50% funded by the CTSA,

MUSC, and various agency grants. As MUSC prepares to renew the CTSA, HSSC will discuss with SCTR leadership the correct allocation and development of additional resources from the NIH to complete the build out of the application platforms. The successful renewal of the CTSA is critical and is identified as a risk in the table on page 29;

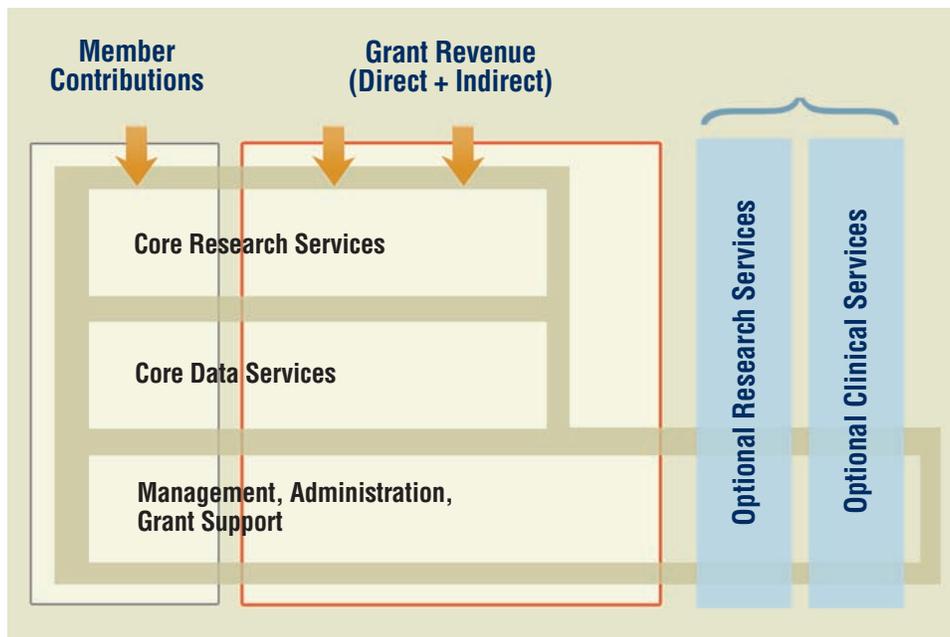
6 HSSC will require the flexibility to creatively seek and develop new funding opportunities.

7 HSSC will not provide on-going support for solutions that provide inadequate value to justify the fees required to maintain them.

Based on these parameters, the following diagram illustrates the HSSC sustainability model. HSSC's primary source of income will continue to be grants, selectively expanding its portfolio relating to patient-centered research for the further enhancement of its core Bio-Informatics & Data Services. By utilizing the South Carolina Research Foundation, HSSC can capture indirect costs with which it can offset operating requirements. HSSC's indirect rate ranges from 26% to close to 50%, depending on the grant and the participants included. Members annual contributions also play a critical role in maintaining the organization.

HSSC Business Model

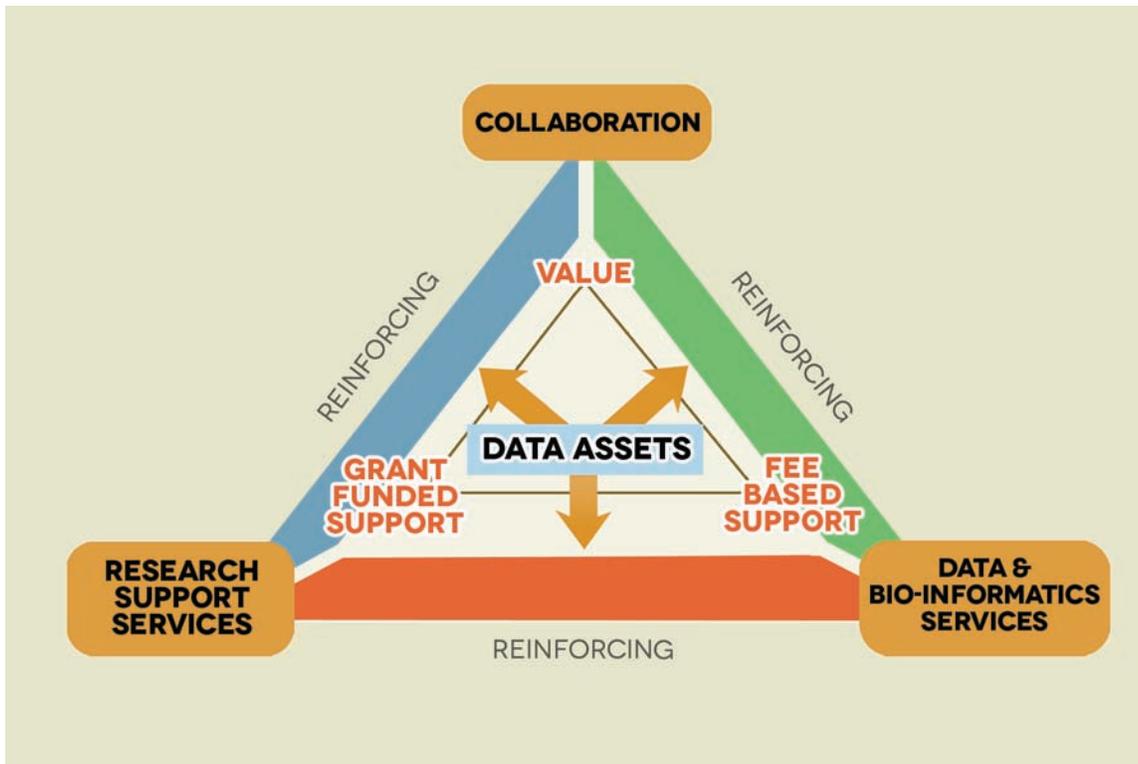
Services considered “optional” and which have moved from the development stage to production operations will become fee based services beginning in January, 2013, which will be charged out to participating organizations. These services are largely developed using grant funds and the cost to support them will be spread across multiple institutions making them highly cost effective for the membership.



Ongoing alignment between the members and HSSC to determine high value enhancements and development priorities will be required so that these optional services continue to grow in value over time.

HSSC Business Model

The business model will strike a balance between core services that all members help to fund and a set of optional services that members can take advantage of depending on their unique environments and the associated value to them.



HSSC will deliver a core set of capabilities to include Data & Bio-Informatics and Research Support Administration & Management Services to all members. These services will include:

- Data & Bio-Informatics services organized as a utility and funded by member and affiliate dues and research funding sources. Members provide direction on new development and priorities and leverage the data services assets in their research activities.
- Research Support Administration & Management services are funded by research grants and member dues. HSSC has the flexibility to pursue grants that are of interest and will focus on multi-institutional grant opportunities which leverage their unique collaborative capabilities. HSSC will collaborate with member organizations in their research activities and will not be positioned as a competitor for grants.

HSSC Business Model

■ HSSC will provide a set of optional or extended services that members can take advantage of or opt not to use. These services will have a separate funding model and will include:

- Optional Data & Bio-Informatics services will be delivered and supported which include research process support applications (e.g. eIRB, Study Tracker, SPARC). Additionally, clinical solutions including registries, performance benchmarking, population health management analytics, etc. will be developed and delivered based on member interest and financial support.
- Optional Research Support Administration & Management services will be delivered including clinical trial support, grant administration and federated bio-repository (information management) based on member interest and financial support.

Members who elect to use the optional services will commit to two year support agreements. In some cases these services or tools may be “bundled” when their capabilities are complimentary and together form a complete service. The total annual cost for optional services will be based on estimated actual support plus 15% to fund on-going enhancements and administrative overhead. Major enhancements will be decided by the participating members and may require additional funding. HSSC will work with the membership governance to identify and prioritize optional services. Development of new services will require either grant or member funding.

During 2012, HSSC will organize the transition of selected research support services including the eIRB and related applications to an optional fee based model. Fees for optional services will begin in January, 2013.

Governance, Organization & Legal

HSSC'S ORGANIZATIONAL STRUCTURE IS INTENDED TO SUPPORT the maximal degree of collaboration amongst the members and to facilitate the integration of interests inherent in a diverse membership group. However, in the context of an updated Mission and a more focused program direction, there are a number of changes that HSSC will make to strengthen its organizational capability. These include the following:

a. Data & Bio-Informatics Member Coordination.

Although the HSSC committees have multiple scheduled meetings throughout the year, the HSSC data & bio-informatics solutions have evolved to a stage where a closer working relationship between HSSC and the member clinical and research leadership is required. HSSC will need to work in partnership with each participating member organization at both a strategic and operational level. As one member put it: "I want to know who is accountable each day for maximizing the relationship with HSSC and integrating them into our strategic and operational initiatives". Specifically, the members will need to work together on data governance to ensure that the data being fed into the CDW is timely and accurate, and to define and prioritize the uses for the data (e.g. analytical use cases). This level of relationship will require an integrated project team to include clinical, research and IT leadership and a defined project plan/schedule to help organize the work and track progress. Additionally, a new Data Governance Committee will be required to set direction and standards for data capture and to help resolve any data issues that arise.

b. Clinical Leadership. HSSC is adding several important new positions so as to be better organized to support this level of interaction including a Chief Medical Officer, a Clinical Epidemiologist and a Clinical Bio-Statistician.

■ **Chief Medical Officer (CMO):** This role is targeted to start July 1st, 2012. The CMO will provide clinical leadership across the HSSC organization including working with members to develop and prioritize the patient centered and clinical research agenda, providing oversight for all HSSC clinical programs, and engaging member clinical leadership to ensure alignment and value in the services that HSSC provides. The CMO will work in concert with the Chief Medical Information Officer (CMIO) to leverage the CDW including defining analytical use case priorities and aligning membership needs with CDW capabilities.

■ **Clinical Epidemiology Bio-Statistician Roles:** Two new roles are being established to help support clinical and research analytics. These roles are funded at 50% from HSSC and 50% from the Arnold School of Public health for a minimum of three years. The roles will both be at the Assistant/Associate Professor level and will allocate 50% of their time focused on HSSC activities. Their primary functions for HSSC will be to work within the Center for Healthcare Quality (CHQ) where they will work within the core for knowledge discovery and analysis with a focus on assessment and analysis of quality, safety, efficiency and effectiveness of health care provided in clinical settings. Coupled with the new CMO role, HSSC will be positioned to provide significant clinical data analytics and analytical leadership to its members and in support of research grant activities.

Governance, Organization & Legal

c. Strengthen the relationship between HSSC and SCTR (CTSA).

The role of the NIH Clinical and Translational Science Award (CTSA) housed at MUSC is critical to the future sustainability of HSSC as is the role of HSSC to the potential renewal of the CTSA. The Biomedical Informatics team that is developing and maintaining the core HSSC data services is jointly funded and managed by HSSC and the CTSA. The CTSA will be reapplying approximately in June 2013. What benefits one benefits the other – and if the CTSA were not renewed the impact on HSSC's long term ability to maintain the data services would be severely compromised. Similarly, if HSSC ceased to operate, the consequence would be highly negative for the CTSA. Furthermore, the tools that the CTSA is developing to support research processes (such as SPARC – Services, pricing, and applications for research –; REDCap (Research Data Capture), and the research toolkit including SCResearch.org, will be available to all the HSSC members and will in turn benefit them accordingly. As of January 2012 the CTSA is not independently represented within the HSSC structure. Manatt has recommended that the CTSA Principal Investigator be included in one or more committees so that the initiatives and programs be coordinated closely with all the participating members. Similarly, HSSC should be well represented in the appropriate CTSA Committees and forums.

d. Establish the legal structure to support fee-based programs.

HSSC has recently initiated the necessary legal process to form a Limited Liability Company (LLC); “Health Sciences Health Improvement, LLC”. By establishing the LLC, HSSC has greater flexibility to develop, deliver and charge for services to

its membership and to non-member organizations should they elect to do so. Formation of the LLC is fully consistent with the direction and priorities established by the HSSC members and is a critical step in the evolution of HSSC into a self-sustaining entity.

e. Shift from research and software development to production data services.

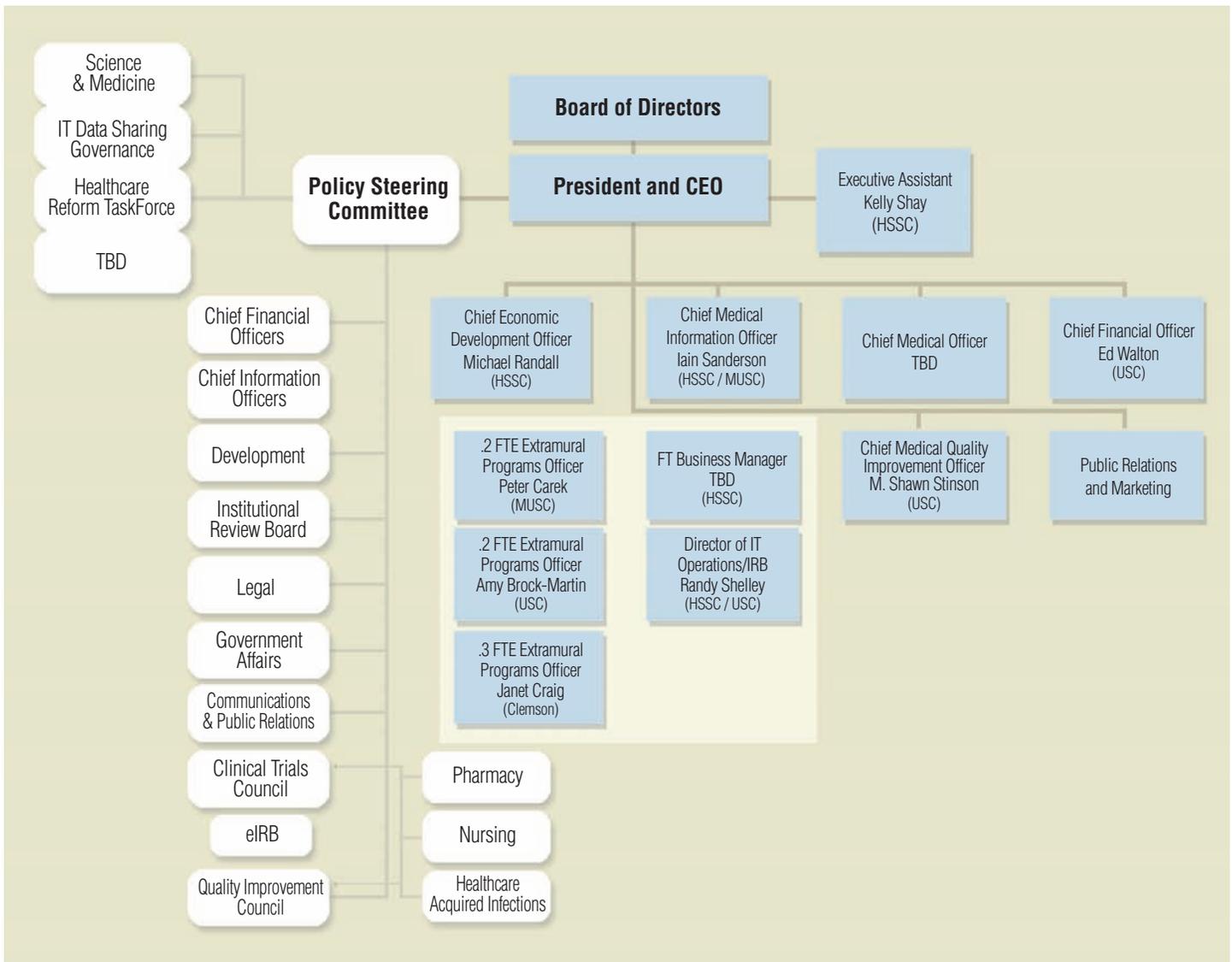
HSSC is modifying the member engagement model to reflect the evolution from a research and software development organization to one which delivers production level services to the members. This shift will be apparent in three ways:

- The new member engagement model is designed to solicit input on enhancement priorities and identification of new optional services.
- The new data governance model is designed to create a structured and standardized model for managing data quality to support the production use of the CDW.
- The Data & Bio-informatics group is publishing their development plan and will regularly communicate updates to the plan. Resources are committed to working with the member organizations on a staged rollout and the on-going support for the CDW including a Help Desk function. Technical/development and support skills will regularly be evaluated and adjusted to provide the right balance between delivering new capabilities and supporting existing services.

Governance, Organization & Legal

The following organization chart includes the new CMO position and reflects HSSC's commitment to provide the organizational capacity and focus to deliver an integrated set of services as defined in this Business Plan:

HEALTH SCIENCES SOUTH CAROLINA



Implementation Plan

KEY ACTIVITIES

During 2012, HSSC will continue to build-out its organization, go live with CDW, implement the new legal structure and organize the transition of the first optional services – eIRB – to a fee based model. Activities for the first year include:

- Approval of the business plan by the HSSC Board
- Establish new CMO, Clinical Epidemiology and Bio-Statistician Roles
- Establish new or revised governance structures to support the on-going data services development and the data governance requirements
- Complete the LLC legal structure
- Price optional services and gain commitments from interested members
- Develop with the Policy Steering Committee and other appropriate HSSC committees the “rules of engagement” for HSSC research grant pursuits
- Complete the data sharing agreement with members
- Go live with CDW and complete transition of development and support from vendor to HSSC staff

During 2013, HSSC will focus on roll-out of the CDW, enhancement of the data in the CDW, and pursuit of new research funding opportunities. Key activities will include:

- Implement fee for service model for optional services
- Establish implementation/roll-out schedule with each member organization to include expanding current HL7 interfaces to increase the types of clinical data that are captured and develop implementation plans
- Go live with a second and third member on CDW resulting in over 2m patients in the database
- Expansion of the CDW to include additional clinical data elements
- Expand number of grants
- Conduct annual plan review and update accordingly

During 2014, HSSC will complete the CDW implementation and transition to a self-sustaining business model.

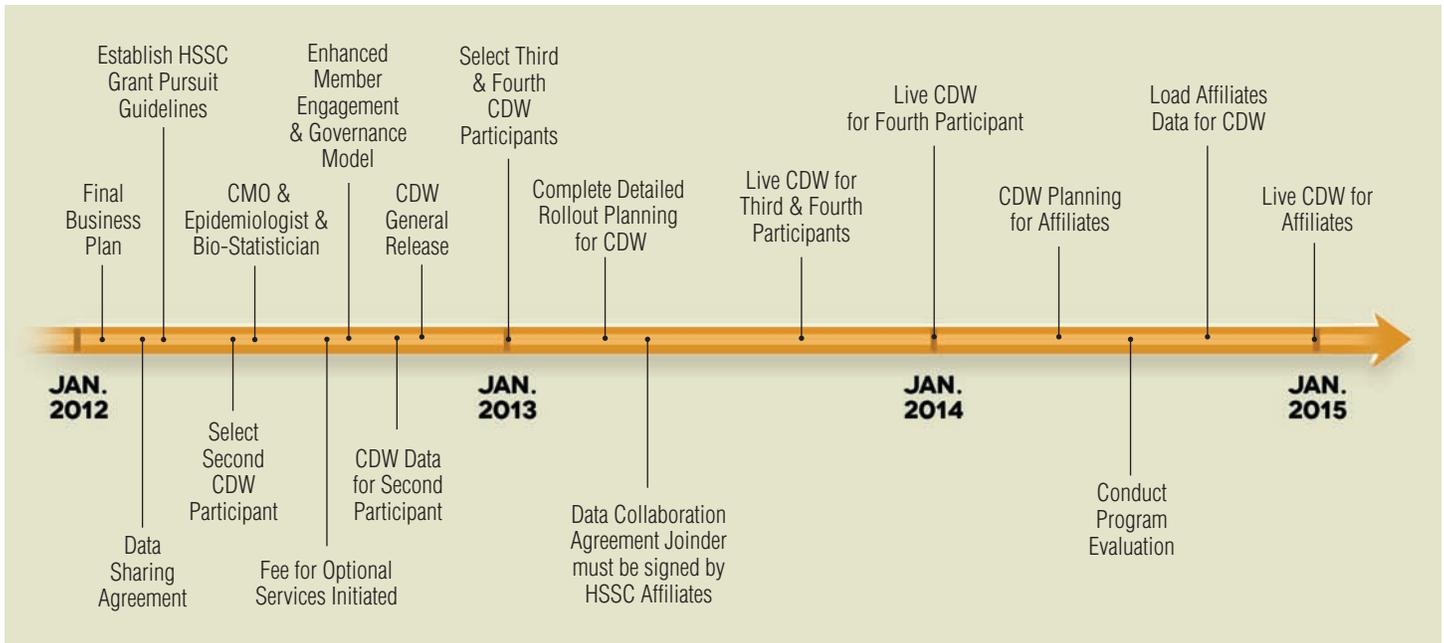
Key activities will include:

- Go live with the remaining organizations on CDW
- Expand number of grants sufficient to offset a minimum of 70% of HSSC costs
- Conduct formal program evaluation process
- Conduct annual plan review and update accordingly

Implementation Plan

During 2015 and 2016, HSSC will continue to develop and deliver capabilities based on member requirements and priorities, and continue to generate sufficient grant revenues to support a minimum of 70% of HSSC costs.

The following timeline summarizes the milestones for the first three years of the plan:



HSSC will regularly update its Board on progress against each of these activities and will update this plan based on progress, new opportunities, and on-going input from the Board members.

Member Requirements for Optimal Results

For HSSC members to derive the value of their participation:

- Each member will need to make a significant commitment and plan for their implementation and participation in the CDW. HSSC will require designated leadership and data access staff that will be integrated into the Informatics project team to facilitate the implementation. Member resources required include a local champion, project manager (0.1 FTE), a stakeholder advocate (researcher/clinical quality) (0.1 FTE), a knowledgeable clinical data analyst (0.1 FTE), and an interface specialist (0.2 FTE), all for the duration of the 6 months of the implementation at that institution.
- Each member should work with HSSC to define their member specific “use cases” – whether research or clinical – for how they

will potentially utilize the data they will access from the CDW. Progress towards these use cases will be an important dimension of mutual accountability between the member and HSSC.

- Each member should undertake to understand the information systems architecture that HSSC is building and determine whether it will meet some or all of their own requirements for a similar clinical data warehouse, thus leading to the potential achievement of important savings for the member institutions. This step should be taken as soon as possible to avoid any unnecessary duplication.

Strategic Plan Risk Assessment

RISK	MITIGATION
<p>CTSA Renewal: HSSC has a Data & Informatics development model that leverages skills and capabilities across HSSC and the CTSA. This leveraged model provides HSSC with access to the broad range of skills and capabilities it requires at a far reduced cost than if all of the necessary staff were maintained by HSSC. If the CTSA were not to be renewed, this staffing model would not be sustainable and the cost of HSSC data and bio-informatics would increase substantially.</p>	<ul style="list-style-type: none"> ■ Closer working relationship between HSSC, CTSA and member organizations including clearer definition of boundaries and leveraged value.
<p>Information Technology: The CDW is an asset that is unique to South Carolina. Although the fundamental data warehouse technologies are deployed in other industries, their use in health care to aggregate large data sets, real-time, from multiple institutions, is new and is being tested for the first time. Additionally, the vendor community has prioritized data warehouse and analytics in health care and innovation in this field is happening rapidly. As a relative pioneer, HSSC has some risk that the tools and architectures they've developed will become obsolete and will require upgrades or that components of the architecture will need to be replaced over time.</p>	<ul style="list-style-type: none"> ■ Technology audit post-transition from vendor support to HSSC support. ■ Continued monitoring of performance as volumes increase. ■ Proactive planning with Oracle on eventual technology transition plan. ■ On-going monitoring of industry and vendor technology direction and innovation.
<p>Grant Funding: The HSSC self-sustaining business model is predicated on the ability to get new grants sufficient to cover 75% of HSSC costs. Should HSSC not be able to secure adequate funding through this channel, there will be a shortfall in the budget resulting in either higher member fees or reduced services.</p>	<ul style="list-style-type: none"> ■ Active tracking, forecasting and reporting on grant based revenue. ■ Enhanced communication and collaboration with members regarding grant opportunities. ■ Enhanced ability for HSSC to pursue and win grants.
<p>Optional Services Model: Within the new business model, optional services require fees to offset their costs. Should a limited number of members agree to support these optional services, the cost per member may become unacceptable resulting in discontinuance of the service.</p>	<ul style="list-style-type: none"> ■ Improved communication and forecasting on use and value of optional services. ■ Improved governance to provide direction on development. ■ Multi-year member commitments.
<p>Leadership: The leadership provided by Dr. Moskowitz and Dr. Sanderson is critical to the on-going success of HSSC. A sudden departure of either would severely impact the progress HSSC can make against the business plan objectives.</p>	<ul style="list-style-type: none"> ■ Succession plans for each HSSC senior executive.

Evaluation

Evaluation criteria will be developed in collaboration with The Duke Endowment and presented to the Board. Evaluation will include establishing a yearly member review of this Strategic Plan inclusive of member satisfaction assessment, with appropriate updates made to the Plan on an annual basis at the January Board meeting.

CRITERIA	MEASUREMENT
Organization	Enhancement of HSSC organization capabilities along the following dimensions: <ul style="list-style-type: none"> ■ Enhanced relationship with supporting organizations and affiliates ■ Data and Bio Informatics Member Coordination ■ Effectiveness of Clinical Leadership ■ Enhanced relationship with SCTR ■ Effectiveness of Product Support model ■ Succession Planning
Sustainability	<ul style="list-style-type: none"> ■ Assessment of costs compared with member dues, fees and research funding ■ Growth in revenues generated from research grants
Research Growth	<ul style="list-style-type: none"> ■ Growth of multi-institutional research activities and grant awards ■ Member satisfaction with research support services
CDW Scope & Use	<ul style="list-style-type: none"> ■ Minimum number of total patients in the database: 2.7m ■ Minimum number of member organizations providing clinical data: 4 ■ Minimum number of studies leveraging the CDW per year

Appendices

Appendix A: CDW Development Plan Timeline

Date	Item	Explanation
Mid Q1 2012	2nd Hospital Decision Release 2b	Chose the next hospital to engage for CDW data
Start Q2 2012	2b local team start	IT, PM and stakeholder team from 2nd hospital must be engaged
Start Q2 2012	Data Collaboration Agreement must be signed	DCA must be signed before system can be used for any purpose
Start Q2 2012	MUSC Data Loaded end-to-end HL7-i2b2 Release 2a	CDW fully loaded with MUSC data; beta testing starts with selected users
Mid Q2 2012	Technology audit complete	Technology audit of the solution delivered by Recombinant May uncover issues for resolution
Mid Q2 2012	Oracle Decision	Need to determine if we proceed with Oracle HL7 engine and Operational Data store based on Audit
Mid Q2 2012	2b planning complete	Planning for 2nd hospital CDW is complete
Mid Q3 2012	Governance Committee in place	A functioning GOC must be in place before general release
End Q3 2012	2c local teams start (2 Hospitals)	Start planning the 2c release – engaging teams from the remaining 2 HSSC hospitals
Mid Q4 2012	2nd Hospital Data Loaded Release 2b	Data from 2nd hospital loaded, testing all the remaining elements of the CDW
Mid Q4 2012	General Release of CDW	Release of the system to users across HSSC, with data from 2 hospitals (about 1.5m patients)
Mid Q4 2012	2c planning complete	Complete planning for CDW for 2 remaining hospitals
End Q1 2013	Data Collaboration Agreement Joinder must be signed by HSSC Affiliates	Affiliates must sign the joinder agreement before we start
End Q1 2013	2d local teams start (HSSC affiliate Hospitals)	Affiliate teams engaged
Start Q2 2013	2 Hospitals Data Loaded Release 2c	Completion of data load for all remaining original HSSC hospitals
Start Q2 2013	2d planning complete	Affiliate CDW planning complete
Mid Q2 2013	CDW live with data from 4 hospitals	With data from 4 hospitals, system is now populated with about 2.5 million patients
End Q4 2013	Affiliate Hospitals Data Loaded Release 2d	With data from 7 hospitals, system is now populated with a good proportion of the state's population

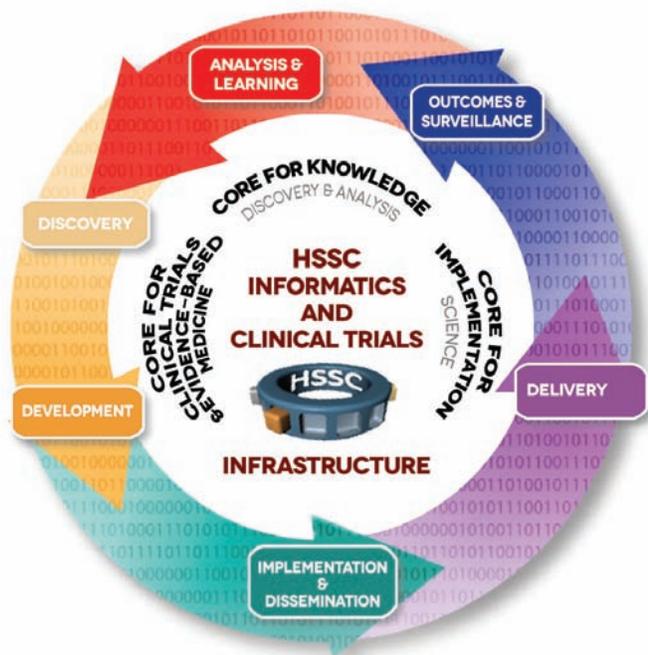
2a = 1st hospital (MUSC) **2b** = 2nd hospital **2c** = 3rd & 4th hospitals **2d** = HSSC affiliate hospitals

Appendices

Appendix B: Achieving Data-Driven Outcomes in South Carolina: Our Aims

Through the support of The Duke Endowment during the past four years, HSSC has been successful in building components of the RLHDS vision. During this time national health care policy and information systems capability have been transformed, particularly in the areas of patient privacy, EHR availability, and clinical systems interoperability. The original concept of the South Carolina Health Data Portal has only been partially achieved within the context of a more complex health care IT environment than could ever have been anticipated even four years ago (e.g., The HITECH Act, health care reform, HIEs). Thus, we are seeking support from The Duke Endowment to complete this ambitious vision for health care in South Carolina, transforming the original concept into one of an RLHDS for the state, and effectively translating evidence-based theory into more effective and safe clinical care for all South Carolinians.

Illustration of how HSSC will use its governance, analytics engine, and cores to support a “rapid-learning” cycle. The proposed programs for this partnership are described in detail the following sections.



In this proposal for a continued partnership between HSSC and The Duke Endowment, HSSC is requesting funding for activities in six specific aims.

■ **Aim 1:** To secure HSSC’s central organizational operations that play a pivotal role in improving health care delivery within the state.

■ **Aim 2:** To complete HSSC’s current informatics and clinical trials infrastructures as the essential engine underlying information liquidity, discovery, and analysis in our collaborative. The vision includes the aggregation of data and biospecimens into semantically meaningful clinical repositories at the statewide scale. In addition, we are requesting funding to build a new interface between HSSC’s real-time data warehouse and South Carolina’s two HIE initiatives (SCHIE and the SC eHealth Alliance) to enable the seamless movement of clinical data for meaningful clinical care and analytical purposes, and to thus enable better patient-centered care.

■ **Aim 3:** To create a new Core for Knowledge Discovery and Analysis that will provide the methodological and statistical support needed by the Core for Clinical Trials and Evidence-Based Medicine, including essential analytical expertise.

Appendices

■ **Aim 4:** To create a new Core for Clinical Trials and Evidence-Based Medicine that will evaluate and generate evidence-based recommendations for obtaining the maximum overall benefit for the health needs of South Carolina's population, teaming with HSSC's network of collaboration to identify the best program for dissemination to the provider community. This core, which will build on the 2009 Clinical Trials Business Plan for CHQ, will examine and consider all types of evidence-based medicine, from clinical trials to data mining. It will be empowered to make recommendations about standards of clinical practice, with a seamless organizational vision to improve the quality of clinical care in South Carolina, particularly in areas such as cardiovascular disease, diabetes, obesity, and the avoidance of harm.

■ **Aim 5:** To create a new Core for Implementation Science as the practical application component. It will improve the way in which care is delivered through the dissemination and systematic application of evidence-based recommendations into clinical practice. It will be scientific, aiming to study and

learn new techniques for disseminating recommendations into grass-roots care, and practical in that it will generate and administer the selected programs. The core will improve the range and delivery of innovative treatments available to the state's citizenry through timely and optimized dissemination programs, and is consistent with federal health care policy within the Patient Protection and Affordable Care Act of 2010.

■ **Aim 6:** The functional combination of all the cores to promote data-driven outcomes with a focus on chronic diseases such as cardiovascular disease, diabetes, and obesity. Through the leadership of CHQ, and by using our network of collaboration, we will functionally combine all the above cores with existing informatics and clinical trials infrastructures into an integrated learning cycle. We will use this novel approach to demonstrate its utility in addressing the most pressing population health issues facing the state, including cardiovascular disease, diabetes, obesity, and reducing harm from errors and infections.

Acknowledgement:

**HSSC acknowledges the generous support of The Duke Endowment
for the development of this Strategic Plan.**



803.544.HSSC (4772)

www.healthsciencessc.org

GOOD HEALTH MADE POSSIBLE™