

I. Project Identification

Project Title: Analytic Infrastructure Project

Agency Name

Agency Business Unit

DSS

Medical Operations/DHS

Your Name(Submitter)

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II. Project Description

A. Project Dates

Proposed Start Date (MM/DD/YYYY) **Expected Completion Date (MM/DD/YYYY)** **Project Duration (in months)**

02/01/2013

06/30/2015

30 mos.

B. Project Description - This information will be used for listings and report to the Governor and General Assembly on capital funded projects.

Creation of a data analytic and business intelligence infrastructure to support enterprise wide administration of DSS medical assistance programs.

C. Summary.

Summary - Describe the high level summary of this project in plain English without technical jargon

The Department is seeking to establish a data analytics and business intelligence infrastructure to support the administration of Medicaid and other medical assistance programs (and potentially usable for other programs). The project includes the following key elements:

Infrastructure — Establish robust, agile and responsive core data architecture for Shared Analytics and Business Intelligence aligned with health care business needs and a focus on data quality and technology standards.

Organization and Processes — Develop governance and competencies and effective processes to manage Shared Analytics Business Intelligence activities, demands, priorities and costs through an enterprise approach across Department operations including a Business Intelligence Competency Center (BICC) and within the Department and its proposed UConn partnership.

Applications and Functionality — Strategic enterprise tools and applications integrated across Department and with its trading partners (University, Providers and Other Agencies) to strengthen the integration of data and information and improve the quality of data and confidence in the resulting findings.

Purpose – Describe the purpose of the project

The data analytics and business intelligence infrastructure will play an essential role in the administration of the Medicaid and other medical assistance programs. It will support the state's efforts to better manage its overall system of health services and supports and the evolution of this system in the years ahead. It will strengthen the Department's ability to improve access, quality, outcomes and costs of services and fulfill its federal and state mandates. The overarching goal for the Department and its partnership with the University is to move to an enterprise approach for health care business intelligence that will provide the State with an integrated health care data and information infrastructure, making decision support less reactive and more predictive and proactive.

Importance – Describe why this project is important

Each year, as the state's Medicaid rolls have expanded, the Medicaid program's costs have grown, often exceeding projections. In SFY13 alone, Medicaid is contributing more than \$270 million to the state's deficit. These costs are not simply a function of enrollment. According to the Kaiser Family Foundation, Connecticut ranks first in the nation in Medicaid per capita spending, at \$9,577 per enrollee.

Connecticut Medicaid compiles a vast quantity of data. This data will grow and become more complex as the state and federal government realize their investments in health information technology, such as electronic health records (EHRs) and health information exchanges (HIEs). Medicaid and other medical assistance program data will be integrated with other data, such as Medicare administrative data and public health data for immunizations, laboratory services, surveillance and disease registries. Like other areas of service and industry, the Department's ability to make good business decisions about how best to deliver value to our clients will depend on our ability to analyze our data and learn from our experience. Specifically, effective management of the Medicaid program and associated programs will depend on the Department's ability to undertake the broad array of data analytic activities necessary to develop new insights and knowledge from its experience, to forecast and model program changes, and to evaluate the impact of these changes.

Outcomes – What are the expected outcomes of this project

Outcomes include:

- o Establishment of data governance and standards
- o Development of an integrated approach (within legal and regulatory constraints) to an Enterprise Date Warehouse / Business Intelligence (EDW/BI) infrastructure and data analytics
- o Strong reporting and BI capabilities for the Department and its collaborators
- o Provision of a robust BI capacity across the continuum of health care in the State:
 - o Real time interactive access, queries, manipulation, analysis and modeling of data and information
 - o Greater support to Anticipate, Support and Validate key decisions and activities at both the agency / program level and across the continuum of health care programs and services
 - o Predictive and "What If" analytic capabilities
 - o Address the key question "...we don't know what we don't know..."
 - o Enterprise data analytical capabilities that can support the protection and promotion of health and well-being at both the population and client level across the State's health care systems
 - o Compliance with national HIT interoperability standards to strengthen public/academic/private partnerships to improve quality and produce better outcomes more efficiently

Approach and Success Evaluation – Provide details of how the success of the project will be evaluated

A project plan will be developed that defines specific outcome metrics for each of the outcomes identified above.

D. **Business Goals.** List up to 10 key business goals you have for this project, when (FY) the goal is expected to be achieved, and how you will measure achievement, Must have at least one. Please use action phrases beginning with a verb to state each goal. Example: "Reduce the Permitting process by 50%". In the Expected Result column, please explain what data you will use to demonstrate the goal is being achieved and any current metrics.

Business Goal (Action Phase)	Target FY for Goal	Current Condition	Expected Result
UConn analytics teams comprised of experts in health service research and health related data analytics such as statisticians, programmers, health economists, and actuaries in collaboration with the Department's clinical, policy, reimbursement, quality and fiscal experts. Such teams will meet regularly to identify coverage, payment and clinical policy options for consideration as the Department develops its own, and	SFY14, SFY15	The Department has analytic capacity dedicated to the development of budget reduction initiatives; however, Department's capacity is inadequate. This limits the program cost reduction options available and limits the Department's capacity to examine the results of new initiatives and make reductions.	Analytics will result in actionable policy, management and/or reimbursement changes that will reduce Medicaid program expenditures. Projected to yield a \$500k ROI in SFY14 and \$3 million ROI in SFY15 (exact amount to be determined).

<p>responds to national, health reform opportunities. The teams will engage University faculty to provide necessary subject matter expertise and to inform the development of specific policy or program recommendations.</p> <p>The Policy Consultation and Options team will a) formulate questions and identify potential problems, b) model the extent and cost of the problem, c) propose a solution, d) model the cost of the solution, and e) forecast or model the return on investment. The product or deliverable will be a budget option, or rather a set of budget options for consideration by the Department.</p> <p>The proposed budget will support the development of 6-10 budget options each year. The options development cycle will correspond to the state fiscal year. Options development will begin in July and end the following June. The analytics activities will also allow for the evaluation of the impact of program and policy changes.</p>			
<p>The UConn multi-disciplinary data analytic team comprised of health service researchers with expertise in gerontology, geriatrics, long-term services and supports, statistics, epidemiology and economic modeling will apply advanced data analytic methods to Medicare/Medicaid linked data in order to accelerate improvements in care processes. Analytic templates will be developed enabling routine “drill down” reports to be produced and interpreted focused on Medicare/Medicaid Eligible (MME) sub-populations defined according to gender, age group, racial and ethnic group background, types of disability, major clinical conditions and co-morbidities, and care settings. Based on analytic results, the team will recommend care improvement strategies that</p>	SFY14, SFY15	<p>The Department has been unable to conduct analytics sufficient to inform the administration of the Integrated Care Initiative (ICI) using in-house analysts and contracted actuarial services. Data analytics to support the ICI is a critical unmet need.</p>	<p>Increased federal revenue resulting from enhanced Medicare shared savings beginning SFY16.</p>

<p>target MME subgroups found to receive higher rates of deficient care and/or adverse health-related outcomes. These analytic activities will focus on the development of new insights to guide the administration of the program, improve outcomes and reduce costs</p>			
<p>The Department will develop the platform, infrastructure and software necessary to provide for the Partnership's use of the extract, transform and load (ETL) and business intelligence tools essential to support the data analysis and assessment required to reduce costs and improve outcomes in the CT Home Care Program for Elders (CHCPE).</p> <p>The Center on Aging analytics team will:</p> <ul style="list-style-type: none"> • Conduct an annual Participant Experience Survey, utilizing CMS's approved survey tool, with a stratified, representative sample of individuals or their caregivers when necessary. The Center on Aging will calculate pre-established performance measures from the survey data to inform distribution of performance incentives to access agencies. • Analyze data annually on participants discharged from CHCPE to long term nursing home residence. This initiative extends a 2009 Center on Aging study that identified gaps in CHCPE services. That study informed the 2010 renewal of the CHCPE HCBS Waiver; the ongoing 	SFY 15	<p>The Department has been unable to conduct analytics sufficient to inform the administration of the CHCPE program (nor other home and community-based waiver programs).</p>	<p>Tying performance measures collected through the Participant Experience Survey to access agency incentives will motivate agencies to improve consumer care and promote efficient service delivery. Addressing factors that lead to nursing home admissions and repeated hospitalizations will decrease these costly and disruptive transitions. There is the potential for significant savings as a result of addressing these factors, estimated to be \$1.5 million beginning in SFY15.</p>

<p>analysis will continue to inform program design and opportunities for improved clinical care and coordination and reduced costs.</p> <ul style="list-style-type: none"> • Analyze data on participants with Critical Incidents, identified through the Critical Incident reporting system, with a focus on individuals who have 4 or more hospitalizations or ED visits within 6 months. Identify gaps in clinical care, care coordination, or other factors to be addressed. For example, congestive heart failure is a common, high priority and often preventable cause of re-admission. 			

E. Technology Goals. From a technical perspective, following the above example, list up to 10 key technology goals you have for this project and in which Fiscal Year (FY) the goal is expected to be achieved. Please use action phrases beginning with a verb to state each goal. Example: "Improve transaction response time by 10%".

Technology Goal	Target FY for Goal
Query response time greatly improved compared to the existing DSS data warehouse	SFY 14
Modernized architecture, fully in alignment with state of the art practice and CMS' Medicaid Information Technology Architecture (MITA) standards and other applicable CMS standards, including	SFY 14
Support of web-enabled click an drag access to data, facilitating nearly real-time business support/decisions	SFY 14

F. Priority Alignment. The criteria in this table, in concert with other factors, will be used to determine project priorities in the capital funding approval process. Briefly describe how the proposed projects will align with each criterion.

Priority Criterion	Y/N	Explanation
Is this project aligned with the Governor's Key Priorities?	Y	This project is aligned with the Governor's emphasis on health information technology, enterprise wide solutions, and use of data for accountability/transparency and to make policy decisions.
Is this project aligned with business and IT goals of your agency?	Y	This project is aligned with the Commissioner's emphasis on health information technology, enterprise wide solutions, and data analytics to support performance measurement, accountability, transparency and policy decisions.
Does this project reduce or prevent future increases to the agency's operating budget?	Y	This project should provide the Department to undertake the broad array of data analytic activities necessary to develop new insights and knowledge from its experience, to forecast and model program changes, and to evaluate the impact of these changes for the purpose of reducing or avoiding Medicaid program costs.
Will this project result in shared capabilities?	Y	This project will initially support shared analytics with the Department's business partners including its administrative service organization (ASO) vendors and UConn. The infrastructure should enable the Department to expand its shared analytic approach to include other state agencies.
Is this project being Co-developed through participation of multiple agencies?	Y	It is being developed with the participation of UConn.

Has the agency demonstrated readiness to manage project of this size and scope?	Y	The agency is about to embark in on an assessment with the help of a consultant which will document data management/analytic needs (including management capabilities) and recommended strategy going forward. This will be the platform from which this project based.
Is the agency ready to deliver the business value proposed?	Y	Yes, for reasons cited above.

- G. **Organizational Preparedness.** Is your agency prepared to undertake this project? Is senior management committed, willing to participate, and willing to allocate the necessary time, energy and staffing resources? How will the project be managed and/or governed and who will make the key project decisions?

With the help of our consultant DSS will establish a governance structure for this purpose.

- H. **Project Ramp Up.** If capital funds are awarded for this project, how long will it take to ramp up? What are the key ramp-up requirements and have any off these already been started? For example, has a project manager been identified? Has an RFI been issued? Is a major procurement required such as an RFP?

The project precursor, an assessment of needs and existing analytic capabilities, is slated to begin shortly, which will enable the project to quickly take off based on its findings and recommended strategic direction

- I. **Organizational Skills.** Do you have the experienced staff with the proper training to sustain this initiative once it's a production system? Do you anticipate having to hire additional staff to sustain this? What training efforts are expected to be needed to maintain this system?

The precursor data management assessment and strategy development mentioned above will address these issues. Development of organizational skills and capability is implicit in the requested scope/funding.

J. **Financial Estimates.** From IT Capital Investment Fund Financial Spreadsheet

Estimated Total Development Cost	Estimated total Capital Funding Request	Estimated Annual Operating Cost	One Time Financial Benefit	Recurring Annual Financial Benefit
\$21,745,000	\$5,436,250	TBD	\$16,308,750	TBD
Explanation of Estimates				
Estimates are based on the information received from program staff. The total development cost is reimbursed by the Federal Government at a 75% FFP rate. The Estimated Annual Operating Costs and Recurring Annual Financial Benefits are undetermined at this time.				

III. Expanded Business Case

- A. **Project Impact.** Beyond the top business goals identified in Section II, 1) What impacts will this project have, if any, in the targeted areas below 2) What would be the impact of not doing this project 3) How will the project demonstrate benefits are achieved.

(1) Impact Area (Vision)	Description of Project Impact
Will this project provide efficient and easily accessible services for all constituents?	Yes. The project will accelerate the Department's efforts to improve access, health care quality and outcomes, population health for our Medicaid beneficiaries; it will reduce Medicaid program costs or the rate of growth in such costs; and it will enable the Department to markedly improve the efficiency and integrity of its data sharing and data analytics activities with its contracted partners (ASOs, actuarial, UConn, etc.)
Will this project promote open and transparent government with the citizens of the state?	Yes. The central focus is data analytics which will make data more accessible to the public and it will make Medicaid program performance more transparent.
Will this project establish efficient and modern business processes?	Yes. The Department is enlisting the assistance of an expert and experienced health information technology and business intelligence contractor with the explicit aim of making the new analytic infrastructure more efficient and to modernize our business processes.
Will this project increase accuracy and timeliness of data for policy making, service delivery and results evaluation?	Yes. A central goal of this project is to improve the accurate and timely production of data and data analytic products to support and inform policy making, service delivery and results evaluation.

2) What is the expected impact of NOT doing this project?

Continued inefficient use of resources, poorly informed policy decisions, etc.

(3) How will you demonstrate achievement of benefits?

We intend to work on this as part of the project work plan.

- B. Statutory/Regulatory Mandates.** 1) Cite and describe federal and state mandates that this project is intended to address. 2) What would be the impact of non-compliance?

(1) Statutory / Regulatory Mandates:

n/a

(2) Impact of non-compliance:

n/a

- C. Primary Beneficiaries.** Who will benefit from this project (citizens businesses, municipalities, other state agencies, staff in your agency, other stakeholders) and in what way?

Medical assistance beneficiaries –better health outcomes; taxpayers – more efficient use of resources; agency staff – support better decision making.