Government Data Analytics Center (GDAC) Annual Report

Chairs of the House of Representatives Appropriations

Senate Base Budget/Appropriations Committees

Joint Legislative Oversight Committee on Information Technology

Fiscal Research Division

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Contents

Legislative Request

This report is submitted pursuant to the S.L. 2015-241 §7A.(f) (N.C.G.S. 143B-1385(F)) which directs the State CIO to report annually on the activities of the GDAC including:

a. The funding, expenditures, cost savings, cost avoidance, efficiency gains, process improvements, and major accomplishments.

b. The contribution of funds or resources by those private entities which are participating in public-private partnerships within the GDAC, including, but not limited to, knowledge transfer and education activities, software licensing, hardware and technical infrastructure resources, personnel resources, and such other resources as agreed upon by the State and the private entity.

The full text of the GDAC legislation is available in Appendix A.

Introduction

The Government Data Analytics Center's (GDAC) mission is to promote collaboration and access to information for improved decision-making. Since 2007, the GDAC has implemented solutions for Stakeholders, which integrates State, Federal, and Public data, and transforms it into information to support safety, compliance and service delivery.

On July 1, 2014, in accordance with Session Law 2013-360 §7.10 (F), the GDAC program and resources transitioned from the Office of the State Controller (OSC) to the State Chief Information Officer (SCIO) within the Office of Information Technology Services (OITS) currently known as the Department of Information Technology (DIT). Under the guidance of the State CIO, the GDAC program broadened its approach to data sharing by aligning with the State's Information Technology Plan, directing the GDAC program toward an enterprise delivery approach.

This report details the GDAC activities during the 2016 calendar year.

Accomplishments

The GDAC program integrates data and develops analytics to support business needs associated with criminal justice, child safety, fraud, compliance, healthcare and longitudinal and performance analysis. Three technical environments support the GDAC, Criminal Justice Law Enforcement Automated Data System (CJLEADS), Fraud and Compliance (NC FACTS) and the Early Childhood Integrated Data System (NC ECIDS).

GDAC collaborates with most agencies and departments to support data sharing and service development. To protect and secure the data, GDAC leverages a data governance model which ensures proper access and use of data.   In the last two years the GDAC has doubled the delivery of analytic solutions and increased data driven intelligence provided to Agencies. As the need for information grows, the GDAC portfolio continues to expand. Appendix B provides a summary of calendar year 2016 activities and planned initiatives in 2017.

Criminal Justice and Public Safety

GDAC supports the criminal justice community by integrating and transforming data to improve public safety.   A summary of the criminal justice application development follows.

CJLEADS

The Criminal Justice Law Enforcement Automated Data Services (CJLEADS) is a foundational cornerstone of the GDAC. This application supports criminal justice professionals by providing access to criminal records on any device 24 x 7 x 365. With a user base exceeding thirty thousand (30,000), the CJLEADS application provides:

- A comprehensive view of an offender's records and photographic images
- Alerting capability notifying a user of an offender's change in status
- Access to real-time warrant information
- Access to real-time license and registration information associated with drivers, motor vehicles, hunting, fishing and vessels
- Access to real-time pretrial release order information

Completed Activities

This year focused primarily on the development of the next generation of CJLEADS which included enhanced security and access to Federal data. Major activities completed this year included:

CJLEADS Next Generation activities included:

- Upgrade of CJLEADS software from SAS 9.3 to SAS 9.4
- Re-write CJLEADS display from Adobe Flash to HTML5 – now known as CJLEADS 2.0
- Integration of Multifactor Authentication with CJLEADS 2.0
- The development of the technical infrastructure to support Federal Data Interface which provides CJLEADS users with on-demand access to Federal criminal records.
- The integration of Federal data queries associated with wanted persons, and stolen vehicles.

CJLEADS Enhancements activities included:

- Integration of Release Order Web Service to support N.C.G.S. §15A-534(d)(3)
- Concealed handgun disqualification reporting in accordance with CHP Amendment to Firearm Laws (S.L.2015-195, HB 562)
- Enhanced advanced search capability
- Enhanced report filtering and selection capability
- Display of criminal records in a format that aligns with the NC Structured Sentencing Act and supports the determination of sentencing

Planned Activities

- The integration of the remaining federated queries to Federal criminal records. Queries to include: missing persons, stolen articles, stolen guns, stolen boats, stolen securities.

Criminal Investigative Case Management (MEMEX)

Session Law 2015-241 §7A.2(c) directs the State CIO through the GDAC to manage and coordinate the deployment of an intelligence-based investigative case management system. Working with the Department of Public Safety (DPS), the GDAC has initiated the development of system requirements to include:

- A scalable case management system
- The ability to incorporate and integrate data from existing investigations and sources
- The ability to manage investigators, and investigation documentation such as interviews, property and evidence, offenses, charges and court dispositions
- Integrated workflow to assist in guiding the user through the entire case management life cycle

Completed Activities

The MEMEX application solution is a series of modules which interconnect to support a multi-faceted case management system. Two of the six planned modules have been installed and are operational within the North Carolina Information Sharing and Analysis Center (NCISAAC).

- Event Handling: supports the management and security of planned major events such as the inauguration or major sporting events, tracking event timelines, activities and "on-the-day" incidents and responses.
- Intelligence Management: supports the collection, management and organization of intelligence data related to investigations or derived from received tips and leads, including workflow and the application of appropriate security, auditing and review processes as required by state and federal legislation.

Planned Activities

MEMEX will continue to expand capabilities to include:

- Request for Service: to support the handling of requests for services received from other law enforcement agencies and other vetted and approved entities, tracks the requests from initial receipt through work-up and final response, and provides reports on the numbers and types of requests being received over time.
- Tips and leads: to capture tips and leads information received and document follow-up activities including further intelligence gathering, opening a new investigation or linking its association with an existing investigation.
- Confidential Informant Handling: to provide for full-lifecycle and secure handling of confidential informants.
- Investigative Case Management: to provide for the capture, management, disposal and dissemination in accordance with department policies of all information related to investigations, including reports, details of offenses, charges, evidence, involved persons, organizations, locations and vehicles.
- As the modules become available, current and historical case information previously tracked in eTeams and Infoshare NC applications will be migrated to the MEMEX application solution.

NC State Crime Lab - Stop Work Identification

The Department of Justice, State Crime Lab has identified the need in assistance in the linking certain crime lab cases with the Administrative Office of the Courts, Criminal Court records to understand the current status of the court case and assist in the identification of those lab cases whose court case has been closed. The objective of providing an electronic cross-match is to reduce the current manual effort and provide a tools that assists in lab case management.

Child and Family Safety

Access to information is paramount to supporting the health and wellbeing of children. The Department of Public Safety, Division of Adult Corrections and Juvenile Justice, and the Department of Health and Human Services Division of Social Services are working with the GDAC to integrate data to improve access to information for social services case workers and juvenile court counselors to assist in developing appropriate care plans.

Child Protective Services Pilot

Session Law 2014-100 §12C.1.(e) directed the Department of Health and Human Services (DHHS) to coordinate with GDAC to establish and implement a Child Protective Services Pilot Program to enhance coordination of services and information sharing. An appropriation of three hundred thousand dollars ($300,000) assisted in supporting the development and implementation. Session Law 2015-241 §12C.11.(a) (HB97) directed the continued collaboration between the DHHS and DIT to enhance the pilot to include the:

- Development of a dashboard linking the family to the child.
- Integration of additional DHHS and other State data sources to build a more comprehensive view of the child and family, including:
    - Matching the child to the caretaker;
    - Linking child, family, and address information; and
    - Integrating Criminal Justice Law Enforcement Automated Data Services (CJLEADS) data to determine if the caretaker or someone living in the house is a sex offender or has a criminal history.
- Development of a comprehensive profile of a child that includes demographic and caretaker information and indicators or flags of other services, including, but not limited to, prior assessments of the child, eligibility for food and 25 nutrition programs, Work First/TANF, Medicaid, and Subsidized Child Care.

Completed Activities

The release of a proof of concept to a limited subset of users during the first quarter of 2016 provided an opportunity for the incorporation of user feedback and tuning prior to the Pilot release. Following the proof of concept, the application was enhanced with the integration of criminal justice information. During Q4 of calendar year 2016, the Child Protective Service Pilot was branded as Child Welfare Accessing and Searching Sensitive Information through Technology (CW ASSIST) and was made available in production for NC Department of Health and Human Division of Social Services.

Planned Activities

Child Welfare ASSIST application rollout to the child protective services staff is planned by DHHS in 2017.

Future enhancements under consideration include the integration of the analytical output available in CWA to be reflected in the DHHS NC FAST case management system for Child Welfare, also known as NC FAST, Release P4.

Juvenile Justice

The North Carolina Department of Public Safety, Division of Adult Correction and Juvenile Justice (DACJJ) is committed to the reduction and prevention of juvenile delinquency by effectively intervening, educating and treating youth in order to strengthen families and increase public safety. To support these objectives, DACJJ received an Implementation Grant for the Second Chance Act from the Office of Justice Programs at the U.S. Department of Justice to implement the juvenile re-entry plan developed by the North Carolina Task Force on Juvenile Justice Re-

Entry Reform. A portion of this grant will be directed to GDAC for the development of applications to integrate and analyze data available both internal and external to the DACJJ systems.

Development Activities

Design and development is under way to support the development of three major components:

– A service plan cataloging application, which captures and catalogs providers of juvenile and family services.
– A service plan document generation system to support on-demand printing of plans for distribution to juveniles and families.
– An analytics-based service-matching tool, which evaluates the needs of juveniles and families with peers and prior outcomes, and provides a set of recommended services for use by juvenile court counselors in the development of a service plan.

Completed Activities

– Much of the activity this calendar year has been related to data analysis and cleansing to support the development of analytic models which improve positive program outcomes.

Fraud and Compliance

North Carolina Financial Accountability and Compliance Technology System (NC FACTS) is an alerting and lead generation tool that prioritizes opportunities based on risk and recovery modeling. The Department of Commerce Division of Employment Security (DES), the North Carolina Industrial Commission (NCIC), and the Secretary of State (SOS) Corporations Division have implemented solutions within NC FACTS. Working with GDAC, the Department of Revenue has integrated NC FACTS components to support compliance-related lead generation within their existing State-hosted case management system.

The Department of Commerce – Division of Employment Security (DES)

Unemployment Insurance (UI) Wage/Tax Analysis and Alerts -- Fictitious business alerting analyzes situations where non-existent employers establish a business with Employment Security and submit false quarterly wage reports, often with stolen identities, for the sole purpose of the fraudulent collection of UI benefits. Undocumented successions (e.g. SUTA dumping) highlights employers whose intention is to move employees to the new business with a lower UI experience ranking in an effort to avoid higher UI taxes.

Unemployment Insurance Claims and Benefit Analysis and Alerts -- NC FACTS Unemployment Claims Analysis identifies benefit claimants with suspect activity for investigation. Information from the DES BARTS Case Management System, DES GUIDE Unemployment Payment System, SSA Death Master File, BEACON Payroll and CJLEADS State Prison and County Jail Incarceration is cross-matched with unemployment benefits to identify any potential eligibility or compensation calculation issues.

Completed Activities

Fraud and compliance alerting is continuously tuned based upon user feedback and the changing schemes of the fraudsters. Enhancements this period provided analytics and reporting to aide in the DES development of their Legislative Quarterly UI Oversite report.

Planned Activities

DES recognizes the value of the alerting capabilities of NC FACTS. As a result, development efforts are under way to support the integration of the DES claimant-related alerts into the new DES claims payment system, Southeast Consortium Unemployment Benefits Initiative (SCUBI).   During calendar year 2017, all GDAC claims related alerts are

planned to be fully integrated in the NC SCUBI application. The integration of NCFACTS within the SCUBI system will remove the need for DES to log into different systems to support investigations.

North Carolina Industrial Commission (NCIC)

The North Carolina Industrial Commission (NCIC) leverages the data and analytics within the GDAC to identify businesses that have failed to maintain Workers Compensation insurance. Employers to be found out of compliance can result in civil penalties and/or criminal charges.

Completed Activities

Compliance alerting is continuously tuned based upon user feedback. Enhancements this period support the tuning of reports, the incorporation of NCIC Workers' Compensation claims data, and the integration of new alerts related to misclassification of employees by employers.

Planned Activities

The development of a mechanism to track tips and leads received from external sources. The implementation of additional data sources to help leverage the exist analytics.

The Department of Revenue (NCDOR)

NCDOR's partnership with GDAC has resulted in several short-term and long-term projects. N.C.G.S. 105-259 precludes NCDOR from providing specific details regarding data and standards used to determine selection of audit candidates.

The NCDOR/GDAC shared project objectives are to improve operational efficiency and return on investment. The GDAC projects continue to assist in the automation of manual functions, which has reduced time needed for business tax audits, and will ultimately increase the state's return on investment.

Analytics implemented in 2016 included the integration of new data sources, improved analytic models and additional scoring to enhance NCDOR's ability to determine identity theft prior to issuance of a refund check. Further, the analytics applied has enhanced and streamlined NCDOR's ability to improve overall tax compliance within multiple tax schedules.

Completed Activities

Continued development and refinement of analytic models to support Revenue compliance activities.

Implemented a public-access interface which allows DOR's businesses to enter data from tax forms in an electronic format to meet NC DOR filing requirements.

Planned Activities

Continued development to expand and refine Revenue compliance analytics.

Employee Misclassification and Underground Economy

Underground Economy refers to businesses that utilize schemes to conceal or misrepresent (misclassify) their employee population to avoid one or more of their employer responsibilities related to wages, payroll taxes, insurance, licensing, safety or other regulatory requirements. Underground Economy also encompasses other

activities such as misclassifying employees as independent contractors and forcing employees to set up shell subcontractor entities.

The Underground Economy results in unfair competition in the marketplace and forces law-abiding businesses to pay greater direct costs to stay in business and indirectly subsidize socialized benefits like health care, unemployment, workers' compensation, for those companies and individuals who do not play by the rules. Businesses that participate in Underground Economy may negatively affect their employees by denying them access to workers' compensation benefits, unemployment insurance coverage, health care coverage, and social security eligibility. As a result, other employers and taxpayers are required to fund these liabilities in the form of workers' compensation or UI coverage through funds and other state and federal subsidies.

Executive Order Number 83 (Employee and Employee Fairness Initiative) established the Employee Classification Section within the North Carolina Industrial Commission. The Section receives complaints related to employee misclassification, and coordinates and tracks all misclassification investigations. In addition to tracking complaints, the Department of Revenue, Department of Commerce, and the North Carolina Industrial Commission are collaborating to share data to identify employers who might be improperly classifying employees to avoid direct business costs.

Completed Activities
- The integration of compliance alerts associated with the identification of employer behavior which may be associated with the misclassification of their employees.
- The implementation of a tips and leads tracking utility to provide the task force with an electronic tool to support tips and leads from external sources and leverages NC FACTS data resources and analytic processing, providing more information in a prioritized format.

Planned Activities
The development of a second generation of compliance alerts through advanced analytic modeling and the integration of additional data sources.

Healthcare
Through the use of healthcare-specific advanced analytics and robust data visualization tools, North Carolina can be more proactive by delivering high-quality and cost-effective care. The GDAC supports both the Department of the State Treasurer and the Department of Health and Human Services in providing information to support the delivery of their services.

State Health Plan for Teachers and State Employees

The North Carolina Department of State Treasurer, State Health Plan for Teachers and State Employees (NCSHP) provides health care coverage to more than 685,000 teachers, state employees, retirees, current and former lawmakers, state university and community college personnel, and their dependents.

In 2014, NCSHP's data warehouse and reporting repository was migrated to the GDAC's technical environment.

Completed Activities

This past year, the GDAC supported the maintenance and operations of the NCSHP technical environment.

Planned Activities

NCSHP is expanding their reporting repository to broaden their access to data from external sources and apply analytics to evaluate health care outcomes and costs. NCSHP and GDAC have partnered to support the development of an advanced reporting warehouse, which will structure the data in a format that provides agile access to data and information. This foundational design will position NCSHP with access to the data in standardized formats for robust reporting and analysis. In addition, NCSHP will implement a Health Analytics Framework in the GDAC that supports dynamic visual reporting, predictive modeling to support cost and population health management.

Division of Medicaid Assistance - Medicaid Analytics Pilot

The North Carolina Department of Health and Human Services (NCDHHS) manages the delivery of health and human-related services for all North Carolinians, especially the State's most vulnerable citizens – children, elderly, disabled and low-income families. NC Medicaid serves approximately 1.8 million Children and Adults.

Session Law 2015-241 §12A.17. (b) directed NCDHHS to coordinate with the GDAC to develop a pilot program that applies analytics to Medicaid data to maximize health care savings and efficiencies and optimize positive impacts on health outcomes. Seven hundred fifty thousand dollars ($750,000) in nonrecurring funds for the 2015-2016 fiscal year and two hundred fifty thousand dollars ($250,000) in recurring funds for the 2015-2016 and 2016-2017 fiscal years were appropriated to support the development and implementation of a pilot program for Medicaid claims analytics and population health management. Further, Session Law 2015-241 §7A.2.(c) directed NCDHHS to share claims and encounter data with GDAC to support outcome-based analysis of services and programs and population health analytics associated with Medicaid and LME/MCO patient population. Session Law 2016-94 §12A.17. (b1) directed DHHS to coordinate with GDAC to continue the phased development, implementation, and operationalization of the pilot program for Medicaid claims analytics and population health management. The scope of the pilot program is expanded to include the following:

1. The integration of new data sources, such as Medicaid claims data, Medicaid beneficiary files, HEDIS quality measure data, and LME/MCO encounter data
2. Automate on-going data feeds to support operational requirements
3. Customized reporting and analytics capabilities
4. Provide the ability to construct and analyze claims as clinical episodes of care in order to assist North Carolina in the transition to capitated managed care and value-based purchasing arrangements.

Completed Activities

This past year, the GDAC supported the development of a Health Analytics Framework (HAF) provided the capability of provide dynamic reporting and data visualization associated with; site-of-service, eligibility category analysis, prescription cost by population categories and super-utilizers and trends.

Leveraging from what was learned during the initial development phase, DHHS recommended the use of additional data and the delivery of two focus areas for advanced analytics: enrollment dashboard and episode analytics.

NC HealthConnex (North Carolina Health Information Exchange Authority)

The North Carolina Health Information Exchange Authority (NC HIEA) operates North Carolina's state-designated HIE. Now called NC HealthConnex, the statewide HIE is a secure, standardized electronic system through which providers can share important patient health information.

Historical Background

Initially a 501(c)3 public-private partnership, North Carolina's statewide HIE became operational in 2012 after two years of planning by state leadership and health care stakeholders. In 2015, the North Carolina General Assembly passed legislation to establish a state-managed Health Information Exchange Authority to oversee and administer the statewide HIE (NCSL 2015-241 Section 12A.5, as amended by NCSL 2015-264). The NC HIEA was subsequently created within the NC Department of Information Technology's Government Data Analytics Center, and assumed control of the statewide HIE in March 2016.

Completed Activities

The NC HIEA spent much of this year developing the relationships and strategies necessary to begin to build connected health care neighborhoods across the state. This has meant working toward greater operational efficiencies; developing a plan for rapid onboarding of providers; and collaborating with stakeholder groups and state partners to create a data standard and to map value-added features for NC HealthConnex.

The NC HIEA delivered the following feature enhancements in 2016:

- Added options to simplify breaking the privacy seal – Within the NC HealthConnex portal, users must provide justification for access to patient records if no data relationship exists between the clinician and the patient. Providers now have a drop down list of reasons to limit the data entry required by a portal user, resulting in an improved user experience.
- Integrated single sign-on for direct secure messaging via the portal – Previously, medical professionals using NC HealthConnex portal for direct secure messaging were required to log in to both the portal and the direct secure messaging sites with different user credentials. The implementation of single sign-on reduced administrative burden for the medical professional, resulting in more time for care giving.
- Improved clinical notifications – The NC HealthConnex portal improved its capability to deliver notifications to users when a patient's record is updated from another participant (e.g., lab results, medication change, ED admittance).
- Statewide provider directory – Collaborating with NC HealthConnex participants and DirectTrust, a provider directory of 4,000+ North Carolina provider Direct addresses is available on NC HealthConnex. This enables easy address look up and safe and secure communication between a patient's extended care team through web messaging.

Planned Activities

To expedite onboarding and deliver the most value to these health care neighborhoods, the NC HIEA has been working through the legal and technical frameworks to connect hosted EHR "hubs" and the nationwide eHealth Exchange to NC HealthConnex. The former will allow NC providers using certain hosted EHR solutions to exchange data soon after signing an NC HIEA Participation Agreement, and the latter will allow NC HealthConnex participants

access to available federal data on their patients at the point of care. The NC HIEA expects its first EHR multi-tenant hub connection and the eHealth Exchange feature to be live for NC HealthConnex participants in the first half of 2017.

Looking ahead near-term, the NC HIEA remains focused largely on building technical connections to grow the patient data available to NC HealthConnex participants and help providers meet their state reporting requirements. In addition, work continues with to improve and grow the list of NC HealthConnex features that add value to the provider community.

Longitudinal and Performance Systems
The collection of data over a period of time provides the capability of measuring the change and impacts to programs and services and the ability to measure effectiveness.   GDAC supports the following longitudinal programs.

Common Follow-up System
The North Carolina General Statute 96-30 – 96-35 directs the Department of Commerce's Labor and Economic Analysis Division (LEAD) with the operation of the Common Follow-up System (CFS). This system evaluates the performance and effectiveness of the State's job training, education and placement programs by measuring participant's presence in the workforce.

Session Law 2014-100 directs the Department of Commerce to develop a plan for the transfer of the information and capabilities of the CFS to GDAC. To this end, LEAD and GDAC have joined forces and developed a phased approach to migrate and modernize the Common Follow-up System.

The objective of the migration and modernization of CFS is to improve access to the State's longitudinal data providing flexibility and scalability, and advance data analysis capabilities associated with workforce and educational program operation and performance.

CFS modernization is following a phased implementation, which includes: migration, improved data collection, and advanced analytics. The first phase included the migration of the existing environment into the GDAC-hosted reporting environment. Subsequent phases include the expansion of the data collection to improve reporting and analytic capabilities.

Completed Activities
In 2016, the CFS modernization included the collaboration with the data stakeholders to explore the expansion of data submissions to position the CFS with more robust performance reporting and analytics capabilities. LEAD and GDAC have partnered with the Department of Public Instruction, Department Health and Human Services, Department of Public Safety, Department of Commerce, Community College System, and the University of North Carolina General Administration in the identification of data to enhance the information. The following data sources have been transformed into the CFS contributor warehouse.

- – Department of Public Safety

Planned Activities
CFS modernization will continue to develop individual contributor warehouses for the following sources.

- – Department of Public Instruction
- – North Carolina Community College System
- – University of North Carolina General Administration
- – DHHS – Division of Vocational Rehabilitation

- DHHS – Division of Services for the Blind
- DHHS – Division of Social Services
- DHHS – Division of Aging and Adult Services
- DHHS – Division of Mental Health
- DHHS – Community Service Block Grant
- DOC – Division of Workforce Solutions

The final stage of the CFS modernization will be the inclusion of the Longitudinal CFS analytic framework which will provide flexibility and scalability, and improved data analysis capabilities associated with workforce and educational program operation and performance.

P20W System

In June 2012, the U.S. Department of Education awarded a $3.6 million grant (Grant) to the North Carolina Department of Public Instruction (NCDPI) to undertake the NC P-20W Statewide Longitudinal Data System project (SLDS Project), hereafter referred to as the "P20-W System". The objective of the P-20W System is to enable five statewide entities to partner and share data. The partnership includes NCDPI, the University of North Carolina (UNC), the North Carolina Community College System (NCCCS), North Carolina Independent Colleges and Universities, Inc. (NCICU), and the North Carolina Department of Employment Security (NCDES) (currently known as the North Carolina Department of Commerce Division of Employment Security).

In accordance with the grant, the P20-W System may disclose and share any aggregated, anonymized information derived from student education records without limitation, to the extent that such data do not include Personally Identifiable Information (PII), as defined in 20 U.S.C. §1232(g) and 34 C.F.R. §99.3, or to the extent that any PII has been removed. The P-20W System data contributors have agreed to utilize a common ID known as "eScholar ID" to link data across the partner entities. Where appropriate, and to ensure the output derived, the eScholar ID will be transformed to a single-use random generated ID and/or small cell suppression and aggregation rules will be applied to reduce access to PII or information through secondary disclosure.

Completed Activities
- The P20W infrastructure has been migrated into the GDAC environment which includes development, test, and production instances of the application.
- The P20W administration tool, which manages access to the application via a user's NCID, has been created and Deployed in the test and production environments.
- An automated process to redact the eScholar ID has been developed and deployed in the test environment.
- GDAC also has implemented an analytic model to support the integration of the education data with wage records.

Planned Activities
- With final testing well underway, P20W implementation is on target for completion June 2017.

North Carolina Early Childhood Data System (NC ECIDS)

The NC Early Childhood Integrated Data System (NC ECIDS) Project is being funded by a Race to the Top – Early Learning Challenge Grant co-sponsored by the Federal Departments of Health and Human Services and Education. The lead State agency for this project is the Division of Child Development and Early Education (DCDEE) within DHHS. The goal of NC ECIDS is to develop and sustain a high quality early childhood data system in North Carolina that

integrates data from key participating agencies to inform policies and practices that ultimately support better outcomes for children and families. The GDAC technical team is responsible for performing application development, maintenance, and operational support services for the NC ECIDS Project.

Completed Activities
–   The NC ECIDS application was fully implemented as of December 31, 2016. The NC ECIDS application has now transitioned to the operational support, maintenance, and enhancement mode.

Governmental Budgetary Transparency/Expenditures Online - OSBM Transparency

Session Law 2015-241 §7.17 directs the State Controller, the Office of State Budget and Management (OSBM), and the State Chief Information Officer (State CIO) to establish a State budget transparency internet web site, now knowns as "NC OpenBudget," to provide information on budget expenditures for each State agency for each fiscal year beginning 2015-2016. Additionally, it is to provide access to Local Government Commission (LGC) data in a standardized format. It's objective is to provide an interactive display and access to budget, contracts and expenditures. The website is to be:

–   User-friendly with easy-to-use search features
–   Provide data in formats that can be readily downloaded and analyzed by the public.
–   Include budgeted amounts and actual expenditures for each State agency and local entity budget code.
–   Include information on receipts and expenditures from and to all sources, including vendor payments, updated on a monthly basis.

Completed Activities
–   OpenBudget web application is available to the public at http://www.nc.gov/government/open-budget. The following information is available utilizing the GDAC platform and SAS Visual Analytics.
    o   State Budget Detail
    o   State Grants Detail

Planned Activities
Continue to utilize GDAC resources and tools to provide a web-based solution that will provide a visual representation of budget and expenditure information with data download capabilities. The project will continue to be delivered in phases as data is transformed, verified and validated. Next functional areas to deploy will are focused on State contracts, purchase orders, and actual spend data.

Enterprise Solution Development

As GDAC has expanded its support across all agencies and departments and solutions are being developed from an enterprise data governance perspective. GDAC is leveraging and managing the State's data assets to support the enterprise. The following activities are under development.

Deceased Matching

Three separate requests to match deceased records with agency specific records led GDAC to develop and implement an enterprise deceased master file to support the matching of deceased records across the enterprise. This enterprise solution combined deceased records from a variety of sources to build a master file of deceased records (DMF). An analytic tool was developed to support the matching of the deceased master file, allowing agencies to crosswalk their

individuals receiving services and/or payments with the deceased master. Agencies that utilize this tool are provided with a set of alerts upon which investigations and/or confirmations can be undertaken.

Completed Activities

GDAC developed individual reports supporting the Integration of the DMF with:

– Department of Revenue – compliance alerting
– Department of the Treasurer, Retirement Division – compliance alerting
– Department of Commerce, Division of Unemployment – Claimant fraud and detection alerting

Planned Activities

– State Board of Elections – voter registration – compliance alerting.

Challenges

Return on Investment

Quantifying the return on investment remains a challenge. GDAC bases its successes by the continued expansion of analytic efforts across North Carolina government agencies, as well as the continued request to expand upon the previously delivered solutions. History has demonstrated that approximately a year after an analytics project is installed into production, the business area becomes comfortable with the incorporation of the tool within their work flow, and at that point, expansion and tuning of the analytics will take place to improve their business outcomes. This has been realized in both the CJLEADS and NC FACTS compliance analytics. After six (6) years in production, CJLEADS continues to expand and bring new features to support the criminal justice community, and after two (2) years the NC FACTS alerts generated for Division of Employment Security are now being expanded to be fully integrated within the Department of Commerce Division of Employment Security replacement of Unemployment Claims system (i.e., SCUBI).

Data Quality

Understanding the data that spans across multiple years for a longitudinal view, and/or data that is collected by aging application systems, requires in-depth analysis. Competing resources for subject matter experts and/or the loss of those experts can expand the data analysis timeframes and result in the delay of timely delivery of solutions.

Portfolio Management

The GDAC project portfolio's rapid growth presents challenges in resourcing.

GDAC Public Private Partnership

The State of North Carolina and the SAS Institute have entered into a public-private partnership for the hosting, licensing, application development and services to support the GDAC program and infrastructure. For each contract period, SAS has committed to contribute a minimum of Five Million Dollars ($5,000,000). During the 2016 calendar year, the State invested Eleven Million Nine Hundred Dollars ($11,900,000) with an estimated SAS investment of approximately Twenty-One Million Nine Hundred Ninety-Six Thousand, Six hundred Eighty-Three Dollars ($21,996,683).

NC GDAC Project Contribution by SAS	Cumulative Contract Total (12/23/2015 – 12/22/2016)
Knowledge transfer and education activities	$0.00
Software licensing[1]	$13,848,000.00
Hosting operations[2]	$3,406,384.00
Personnel resources	$16,642,299.25
Other Agreed /Resources	$0.00
Total Value for Period	$33,896,683.25
State Payments	$11,900,000.00
SAS Investment	$21,996,683.25

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[1] Non-discounted software licensing fees are $1,154,000 per month for unlimited enterprise usage of SAS Fraud Framework modules and unlimited enterprise usage for all other GDAC analytic initiatives. The twelve-month market value of these licenses is $13,848,000.

[2] Includes hardware and IT personnel required to support the NC GDAC environments and solutions.

Appendix A - Legislation

The full text of N.C.G.S. 143B-1385 can be found here:

http://www.ncleg.net/EnactedLegislation/Statutes/PDF/BySection/Chapter_143B/GS_143B-1385.pdf

Appendix B - GDAC Portfolio

GDAC Activities - Calendar Year

2016 — Q1, Q2, Q3, Q4
2017 — Q1, Q2, Q3, Q4

Criminal Justice
- CJLEADS Release 15
- Multi Factor Integration
- CJLEADS 2.0
- Federal Data 2.1
- MEMEX Case Management
- Criminal Background Check
- Federal Data Release 2.2
- MEMEX Release 1.2
- Crime Lab Stop Order Analysis

Child Safety
- DHHS Child Protective Services Pilot
- Juvenile Justice Service Catalog
- Juvenile Justice Baseline and Matching

Fraud and Compliance
- NC DES SCUBI Integration
- Unemployment Claims Release 2.0
- Unemployment Tax - Worker Misclassification
- Underground Economy
- Worker's Compensation Employee Misclassification
- Worker's Compensation Compliance 2.0
- Revenue Compliance Analytics
- NC Dept of Revenue Analytics 2.0
- Revenue eNC3
- Revenue eNC3- 2.0
- Retirement Death Match Release 2.0

Healthcare
- State Health Plan Data Repository
- State Health Plan Visual Analytics
- HIEA Provider Connections
- Medicaid Analytics Pilot
- HIEA Clinical Data Reporting
- Medicaid Analytics Pilot 2.0
- DHHS Controlled Substance Reporting

Longitudinal and Performance
- OSBM Transparency
- OSBM Transparency Release 2,3
- P 20W
- Early Childhood Integrated Data System (ECIDS)
- Early Childhood Integrated Data System (ECIDS) R3.0
- Common Follow-Up System (CFS) Phase 2
- HUB Reporting
- Financial Reporting Repository

Enterprise
- Visual Analytics
- Data Visualization Studio
- Web Services
- Address NC
- Orthoimagery - Coastal
- Orthoimagery – Eastern Piedmont
- Orthoimagery – Northern Piedmont and Mountains
- Enterprise Data Management Plan