

Quality and Productivity Commission
26th Annual Productivity and Quality Awards Program
“Investing in a Quality Future”

2012 APPLICATION

Title of Project (Limited to 50 characters, including spaces):

NAME OF PROJECT: DATA MINING SOLUTION FOR CHILD CARE WELFARE FRAUD

DATE OF IMPLEMENTATION/ADOPTION: MAY 9, 2011
 (Must be implemented by June 30, 2011)

PROJECT STATUS: Ongoing One-time only

DID YOU SUBMIT THIS PROJECT BEFORE? Yes No

EXECUTIVE SUMMARY: Describe the project in 15 lines or less using Arial 12 point font. Summarize the problem, solution, and benefits of the project in a clear and direct manner

1 Los Angeles County faced an ever increasing threat of fraud in the California Work
 2 Opportunity and Responsibility to Kids (CalWORKs) Stage 1 Child Care Program from
 3 both participants and child care providers. To assist in program integrity efforts in the
 4 CalWORKs Stage 1 Child Care Program, Los Angeles County turned to analytics
 5 solutions from SAS Institute Inc. to identify potential fraud, enhance investigations, and
 6 prevent improper payments. By doing so, they've helped the most vulnerable
 7 members of the community while protecting millions in taxpayer dollars. Los Angeles
 8 County conducted a Data mining pilot which achieved an 85% accuracy rate in
 9 detecting collusive fraud rings. Estimates of cost avoidance were calculated in three
 10 areas, totaling \$6.8 million: new fraud referrals approximately \$2.2 million; early fraud
 11 detection approximately \$1.6 million; and increased program integrity and investigative
 12 efficiencies of approximately \$3 million. The Data Mining Solution (DMS) for child care
 13 welfare fraud detection was implemented on May 9, 2011, to assist Los Angeles
 14 County's Department of Public Social Services Welfare Fraud Prevention and
 15 Investigations Section in the detection of welfare fraud relating to child care.

(1) ESTIMATED/ACTUAL ANNUAL COST AVOIDANCE	(2) ESTIMATED/ACTUAL ANNUAL COST SAVINGS	(3) ESTIMATED/ACTUAL ANNUAL REVENUE	(1) + (2) + (3) TOTAL ESTIMATED/ACTUAL BENEFIT	SERVICE ENHANCEMENT PROJECT
\$ 6.8 Million	\$	\$	\$ 6.8 MILLION	
SUBMITTING DEPARTMENT NAME AND COMPLETE ADDRESS Department of Public Social Services 12860 Crossroads Parkway South City of Industry, CA 91746			TELEPHONE NUMBER (562) 908-8600	
PROGRAM MANAGER'S NAME Michael J. Sylvester			TELEPHONE NUMBER (562) 908-8327 EMAIL MichaelSylvester@dpss.lacounty.gov	
PRODUCTIVITY MANAGER'S NAME AND SIGNATURE <small>(PLEASE CALL (213) 893-0322 IF YOU DO NOT KNOW YOUR PRODUCTIVITY MANAGER'S NAME)</small> Nadia Mirzayans SIGNATURE ON FILE			DATE TELEPHONE NUMBER (626) 927-5327 EMAIL NadiaMirzayans@dpss.lacounty.gov	
DEPARTMENT HEAD'S NAME AND SIGNATURE Sheryl L. Spiller, Acting Director SIGNATURE ON FILE			DATE TELEPHONE NUMBER (562) 908-8600	

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CHALLENGE (suggest ½ to one page)

Los Angeles County CalWORKs program provides temporary financial assistance and employment-focused services to families with minor children who have income and property below the State maximum limits for their family size. Most able-bodied aided parents are also required to participate in the CalWORKs Greater Avenues for Independence (GAIN) Welfare-to-Work employment services program.

Under the CalWORKs Stage 1 Child Care Program, services are made available to GAIN participants so that they can participate in employment-related activities which will ultimately lead them to self-sufficiency. Los Angeles County faced a great increase in fraud related to the CalWORKs Stage 1 Child Care Program. Referrals for Child Care fraud traditionally came from contracted Child Care Alternative Payment Program (APP) agencies or other referral sources. In many cases, organized fraud rings and collusive activities undertaken by providers working with GAIN participants were perpetrating the fraud. The fraud committed not only reduces the money available to the most vulnerable and in need but hurts and damages the public's confidence in a vital program.

Los Angeles County is fighting fraud by enhancing investigations and preventing improper payments to those who seek to take advantage of the child care system. By doing so, the County will save millions in taxpayer dollars, thereby increasing the resources for the program.

SOLUTION (suggest ½ to one page)

DMS for Child Care Welfare Fraud Detection was implemented to assist Los Angeles County in the detection of welfare fraud relating to child care. The predictive statistical models used by DMS have allowed fraud investigators to identify and expedite the review of suspicious cases for investigation much earlier than would typically have been the case, in the absence of the predictive models. DMS identifies and assesses cases that require closer scrutiny, as their profiles resemble confirmed historical patterns of fraud. It specifically helps with (1) the early detection of suspicious cases, (2) detection of likely fraudulent child care providers, (3) detection of previously unknown suspicious participants, (4) identification of previously unknown suspicious child care providers, (5) early fraud detection, (6) detection of colluding behavior, and (7) improved inter-agency collaboration.

Using predictive models and peer group analysis to detect behavioral anomalies in the utilization of child care services, fraud risk scores were developed to decrease the number of false positive cases assigned to investigators. Staff prioritized their work to focus on cases with a high level of suspicion by ranking cases assigned to them by this unique score. The system analyzes social networks to detect if individuals are likely to commit fraud, based on a fraud risk score. Social Network Analysis also supports the identification of collusive fraud rings, as well as adding companion cases to ongoing investigations.

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In implementing the DMS application, Los Angeles County utilized a comprehensive technology solution of analytic and intelligence software including: (1) data integration tools; (2) data mining software; (3) social network analysis software; and (4) business intelligence tools. The SAS Fraud Framework provided a powerful analytical tool bench in implementing the DMS.

Los Angeles County Department of Public Social Services (DPSS) Welfare Fraud Prevention and Investigations (WFP&I) Section uses the SAS Fraud Framework for Government and incorporates SAS' data mining technology with Social Network Analysis, Predictive Analysis, rules management and forecasting techniques. SAS Business Intelligence has been used to generate an information portal and reports to monitor and share information on fraudulent cases.

The DMS project has facilitated collaboration between DPSS and the District Attorney's (DA) office. Representatives from the DA's office have concluded that the technology is highly useful in identifying child care fraud and expediting the transfer of major fraud cases from DPSS to the DA's office. Moreover, the development and implementation of DMS has entailed extensive coordination and collaboration among the numerous DPSS sections, Chief Executive Office (CEO) Service Integration Branch and SAS. These joint efforts have made DMS more responsive and flexible with respect to the varied cultures governing DPSS, the CEO and SAS, and they have potential to lead to additional fraud detection programs for other public assistance programs.

BENEFITS (suggest 1 to 2 pages)

The DMS established a network consisting of participant and provider nodes and graphed their relationships. The DMS technology looked at whether this small network fit into the larger scheme of networks, in which participants are in collusion with other child care providers. One DPSS Welfare Fraud Investigator stated: "On one of my cases, with a single click of my mouse, DMS provided leads to additional evidence which would have otherwise taken weeks, possibly months to uncover." This included evidence such as the address, and name of a potential unreported employer and a second potential residence address. "DMS also showed a connection between my suspect and two other suspects on two other cases." Also, one Investigator who was nearing the conclusion of a ten-person conspiracy investigation ran the main suspect's name through the DMS Social Network and discovered seven potential additional co-conspirators that would not have been discovered otherwise.

DMS was implemented on May 9, 2011, and has proven to be an effective tool in improving the detection and prevention of fraudulent activities among individuals and groups participating in the CalWORKs Stage 1 Child Care Program as evidenced by the following results:

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- In its first 10 months of operation, the system produced 197 additional referrals for child care fraud investigations (143 from front-end Triage review, plus an additional 54 referrals initiated directly by investigators upon review of other active investigations). Additionally, another 67 non-child care-related referrals were initiated as a direct result of Triage review. The investigation is currently being conducted on 6 separate conspiracy allegations that were a direct result of data mining review by investigative staff. Additionally, as a result of the Social Network Analysis functionality, WFP&I has uncovered 2 conspiracy groups consisting of 16 cases, and done so significantly earlier than would have been the case using traditional fraud detection procedures. This early detection significantly reduces the duration of fraudulent activities and thereby generates substantial savings for the County.
- Additionally, a Triage team has been established with Designated Triage Workers (DTW) who review potential fraud alerts with high risk scores and triggers created by the DMS tool to determine if a referral will need to be made to WFP&I section or a notification generated that will inform eligibility staff of possible discrepancies on a participant's case due to unreported income. The disposition of such notices may result in one or more of the following outcomes: termination of benefits, overpayments, reduction in benefits, share of cost and/or fraud referral. So far, eligibility staff have processed and taken case actions on approximately 388 cases, as a result of these notifications from the DTWs, which also include the 67 non-child care-related fraud referrals mentioned above.

DMS is the first fraud detection system in local government in the nation to make use of advanced analytics and predictive models to detect and prevent fraud in public assistance programs. The County's CEO and DPSS have pioneered the use of intelligent data mining technology for the early detection of fraud through predictive models and the use of social networks. DMS has gained recognition in local governments as an effort that should be adopted by local governments to control the problem of fraud more generally.

Los Angeles County was awarded a 2012 NACo Achievement Award for implementation of the Data Mining Solution for Child Care Welfare Fraud Detection. Additionally, the DMS project won a prestigious 2012 ComputerWorld Honors Laureate award in the Health and Human Service category, while competing with over 500 other projects nominated from 25 different countries, which were scored by over 22 distinguished judges who are IT leaders from diverse. Further, Gartner, the leading IT industry analyst, has identified Los Angeles County's efforts to implement a technologically-driven fraud detection system as a major contribution to the field of fraud detection.

LINKAGE TO THE COUNTY STRATEGIC PLAN:

GOAL 2: CHILDREN, FAMILY, AND ADULT WELL-BEING: STRATEGY 1: CLIENT-CENTERED INTEGRATED SERVICES:

OBJECTIVE 3: LA COUNTY CONNECTIONS: BY JUNE 2009, BEGIN IMPLEMENTATION OF THE COUNTY'S INTEGRATED DATA MATCHING/MINING SYSTEM

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COST AVOIDANCE, COST SAVINGS, AND REVENUE GENERATED (ESTIMATED BENEFIT): Use this page to provide a breakdown of the estimated/actual costs benefits. As a suggestion, work with your fiscal staff.

Cost Avoidance: Anticipated costs that are eliminated or not incurred as a result of program outcomes.

Cost Savings: A reduction or lessening of expenditures as a result of program outcomes.

Revenue: Increases in existing revenue streams or new revenue sources to the County as a result of program outcomes.

(1) ACTUAL/ESTIMATED ANNUAL COST AVOIDANCE	(2) ACTUAL/ESTIMATED ANNUAL COST SAVINGS	(3) ACTUAL/ESTIMATED ANNUAL REVENUE	(1) + (2) + (3) TOTAL ANNUAL ACTUAL/ESTIMATED BENEFIT	SERVICE ENHANCEMENT PROJECT
\$ 6.8 MILLION			\$ 6.8 MILLION	<input type="checkbox"/>

ANNUAL = 12 MONTHS ONLY

Total estimated cost avoidance projected from the pilot results were calculated in three areas, totaling \$6.8 million:

- New fraud referrals approximately \$2.2 million;
- Early fraud detection approximately \$1.6 million; and
- Increased program integrity and investigative efficiencies of approximately \$3 million.

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FOR COLLABORATING DEPARTMENTS ONLY

(For single department submissions, do not include this page)

DEPARTMENT NO. 2 NAME AND COMPLETE ADDRESS	
Los Angeles County Chief Executive Office, Service Integration Branch Rm 713, Kenneth Hahn Hall of Administration 500 W. Temple Street Los Angeles, CA 90012	
PRODUCTIVITY MANAGER’S NAME AND SIGNATURE	DEPARTMENT HEAD’S NAME AND SIGNATURE
Charlene Abe SIGNATURE ON FILE	William T Fujioka SIGNATURE ON FILE
DEPARTMENT NO. 3 NAME AND COMPLETE ADDRESS	
Los Angeles County Chief Information Office World Trade Center 350 S. Figueroa Street, Suite 188, Los Angeles, CA 90071	
PRODUCTIVITY MANAGER’S NAME AND SIGNATURE	DEPARTMENT HEAD’S NAME AND SIGNATURE
Greg Melendez SIGNATURE ON FILE	Richard Sanchez SIGNATURE ON FILE
DEPARTMENT NO. 4 NAME AND COMPLETE ADDRESS	
County Counsel Hall of Administration 500 W. Temple St. 6th Floor Los Angeles, CA 90012	
PRODUCTIVITY MANAGER’S NAME AND SIGNATURE	DEPARTMENT HEAD’S NAME AND SIGNATURE
Veritta Smith SIGNATURE ON FILE	John F. Krattli SIGNATURE ON FILE
DEPARTMENT NO. 5 NAME AND COMPLETE ADDRESS	
District Attorney 201 N Figueroa Street, 13 th Floor Los Angeles, CA 90012	
PRODUCTIVITY MANAGER’S NAME AND SIGNATURE	DEPARTMENT HEAD’S NAME AND SIGNATURE
Priscilla Cruz SIGNATURE ON FILE	Steve Cooley, District Attorney SIGNATURE ON FILE