Center for Technology in Government

Assessing Mobile Technologies in Child Protective Services

Fulton County Department of Social Services District Profile

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Introduction

Demonstration Project

The New York State (NYS) Mobile Technology Demonstration Project is an initiative to assess the use of mobile technologies in child protective services work in New York State. The project, a collaborative effort among the NYS Office of Children and Family Services (OCFS), 23 NYS County Departments of Social Services (DSS), and the Center for Technology in Government (CTG), focused on two core questions – how is mobile technology used in the work setting and did the technology impact the work itself?

In this project, OCFS was responsible for the selection, procurement, and deployment of mobile technologies. The County DSS was also responsible for the deployment of mobile technologies, in addition to the coordination and procurement of wireless connectivity, training, and the selection of Child Protective Services (CPS) staff to participate in the demonstration. CTG was responsible for the independent assessment of the use of the technology.

The *Demonstration Project in 23 Local Social Service Districts* produced profiles for each of the participating districts as well as a summary report. It may be useful to read through the summary report before reading the local district profile as the summary report explains the variability in the CPS environment across the state as well as describes the many polices and practices developed and implemented by districts. The report is available at: http://www.ctg.albany.edu/publications/reports/demonstration2008.

This profile presents findings for the Fulton County DSS. Findings are based on data collected through online surveys, district questionnaires, and analysis of CONNECTIONS data (data collection methodology and timeframe can be found in Appendix A). The field test lasted 43 days was from 11/27/07- 1/9/08.

District Deployment

Fulton County DSS has 12 CPS staff responsible for child protective services. Fulton County covers 500 square miles, is mostly rural, but has two main cities and approximately 55,000 residents. The Fulton County DSS participated in the demonstration project to learn if mobile technologies can create more flexibility in the ways in which caseworkers are able to complete progress notes while waiting in court and in the field.

The Fulton County DSS deployed 12 Dell Latitude D620 laptops to 22 caseworkers and one supervisor (see Appendix B for device specifications). One laptop was deployed on 11/15/07 and six were deployed on 11/27/07. At the end of the pilot period, five laptops were waiting to be deployed. Eight caseworkers received their own device and docking stations with keyboards and monitors. One laptop was rotated among the on-call staff for on-call duties. Each laptop came pre-loaded with Dragon Naturally Speaking, a voice recognition and dictation software. Three district-provided external Verizon broadband cards were shared on a first come, first served basis among the laptop users. In addition, the Fulton County Family Courthouse is fully wireless. Regardless of

the network connections used, all access to the State network was through a virtual private network (VPN) that secures the transmission to and from the portable device and the network. In addition, PointSec encryption software was installed on each device before deployment. All staff using the laptops received group training on how to use the laptops and were asked to sign a security and "Terms of Use" form.

Finally, no policies were changed to support the introduction of mobile technologies before or during the pilot period. In both periods, caseworkers were allowed overtime for documentation purposes if the work was completed at the office. The district questionnaire noted that caseworkers were made aware that any work they choose to do beyond their regular work hours and at home with the laptop would be on a voluntary basis.

Characteristics of Respondents

A total of 22 CPS caseworkers participated in this study: 17 took the baseline survey (response rate of 77%); 11 took the post-pilot survey (response rate of 50%); and 9 took both the baseline and post-pilot surveys for a response rate of (41%).

The length of experience in CPS work, amount of overtime accrued weekly, the number of court days and estimated waiting time during a visit are all important to understanding the overall context of the work environment. The Fulton County DSS respondents[1] had moderate experience in CPS field work, with an average of 5.7 years of experience; 56% reported CPS experience of three years or less. Some respondents were working slightly more overtime during the pilot period. All of the respondents reported working one hour or less of overtime a week during the pilot period, compared to 33% in the pre-pilot period. Meanwhile, the average overtime hours decreased from 1.4 hours in the pre-pilot period to 0.5 hours in the pilot period. It is important to note there was a dramatic decrease in the number of respondents answering the question about overtime between the baseline and post-pilot surveys (from 9 respondents to 3, respectively). Eighty-two percent of the respondents reported a typical court waiting time of three hours or less and 71% reported on average spending two or fewer days in court per month.

Mobility

The laptops provided caseworkers opportunities to work outside the office environment in new ways. This section reports on how the participants used those opportunities in terms of the type of work done, locations, and issues that influence use. Survey questions inquired about use at home, in court houses, and in the field. Issue questions focused on using the laptop outside of the office, such as: (1) difficulty establishing connection, (2) loss of connection, (3) the speed of connection, (4) level of privacy (or personal work space and ability to ensure confidentiality of information), (5)

[1] Participant(s) refers to those CPS caseworkers who tested the technology. Respondent(s) refers to the total number of participants who answered specific questions in either the baseline or post-pilot surveys or participated in the district teleconferences.

personal safety, and (6) amount of time available to use the laptop. How information was accessed and entered by participants was also examined.

Use

Fulton County DSS respondents reported using the laptop during normal work hours, after work hours, on-call, and when working overtime. Fulton County DSS desktops were removed and docking stations installed. Not all of the laptops were fully deployed by the end of the test period (5 of 12). The laptop was used in case investigation and interventions, documentation and reporting, and court-related activities. Case documentation was the most frequent use, including inputting and updating notes, safety assessments, reading and reviewing case histories, doing person searches, checking client histories, and email. Two survey respondents reported using the laptop to access various forms of information from government Web sites at least once a day. Two of the respondents accessed email at least once a day or more, while one respondent reported using the laptop at least once a day or more to access map directions. The laptop users were in the field approximately the same number of days per week (average 3 days) during the pre- and pilot periods.

Fulton County DSS had three rotating district-provided external broadband cards during the pilot period and the court house was fully wireless. Some respondents reported using their personal Internet Service Providers (ISPs) while at home. Survey responses or open-ended comments did not provide enough information about the types of of connectivity, privacy, or time problems encountered while in the field, court house, or at home. Two respondents pointed out the need for additional training to overcome connection problems while at home using their own ISP.

Participants were also asked about ease of logging-on in the device. Overall, two respondents said it was “Easy,” one rated it as “Neither difficult nor Easy,” and one respondent rated the log-on process as “Extremely difficult.”

Location

Table 1 below details the percentage of respondents using the laptop at different locations, as well as the average length of time the laptop was used. Aside from in the office, one survey respondents reported using the laptop at home, for an average of less than one hour per week. One reported using the laptop in the field for about two hours per week and one reported using it at court for less than one hour per week.

Table 1 - Location and Hours of Laptop Use per Week

	Use of Laptop (n)	Average length of use per week
Field	9% (1)	2.00 Hours
Court	0% (0)	0.00 Hours
Home	9% (1)	0.50 Hours
Do not use at all	18% (2)	--

** Based on survey respondents who took the post survey n=11. Total number of testers n=22.*

Open-ended survey comments revealed that some respondents have not had the opportunity to use the laptop at court or while in the field. Those who have used it reported increased flexibility in when and where they can do work, as well as making being on-call much easier.

The amount of time caseworkers spend in court suggests that it is an unexploited location for mobile work in many districts. Respondents in Fulton County DSS spend on average 2.5 days a month at court and wait on average 2.5 hours during a court visit. However, caseworkers may not be using the laptop in the court house because of other competing interests that may limit the amount and type of work they can do. Open-ended survey responses do not account for this low level of use in court.

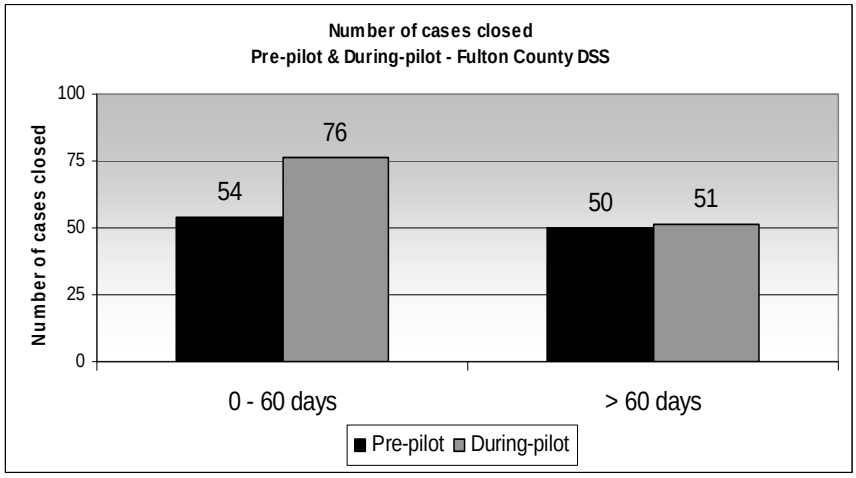
Caseworkers could work from home, but any work done after hours while at home was on a voluntary basis Overtime must be completed in the office. These policies may account for lower levels of use while at home.

Productivity and Efficiency

This analysis uses central database data and survey responses to examine two core questions about possible technology impacts within the Fulton County DSS: (1) Are workers more productive with respect to case closings and progress note reporting? and (2) Does timeliness of reporting change?

Case closing is one way to assess any changes in efficiency and productivity. Figure 1 below shows the rate of timely closing of cases (in 60 days or less) increased substantially during the test period, up from 54 in the pre-test period to 76 during the test period. The number of cases closed in over 60 days stayed essentially constant with 50 in the pre-pilot period to 51 during the pilot period. This is a marked increase in productivity; the total number of cases closed increased from 104 in the pre-test to 127 during the test period – a 22% increase. It is important to note that in this county the total number of cases available to be worked on[2] slightly increased from 270 in the pre-pilot period to 273 during the pilot period – a 1.1% increase.

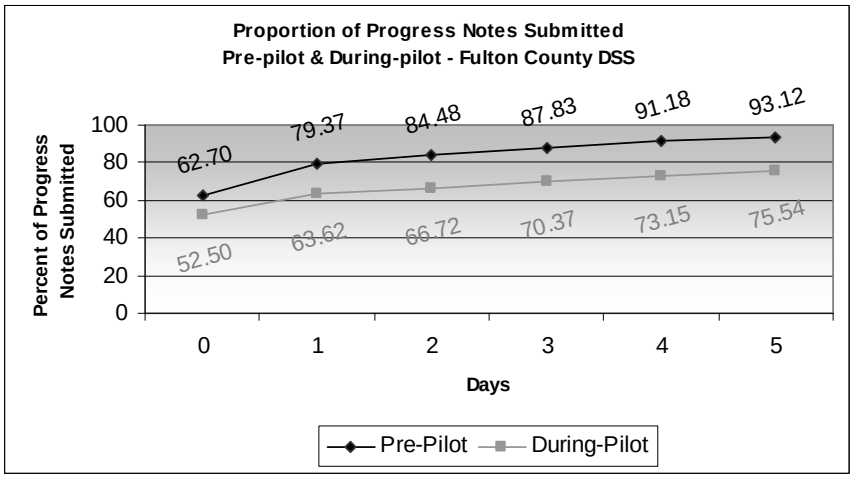
Figure 1 - Number of Fulton County DSS Cases Closed Pre-Pilot and During Pilot



[2] The number of cases available to be worked on is the total of investigation stages that were open at any time during each of the pre-or pilot periods.

Another indicator of timeliness is elapsed time – or the number of days between an event and the posting of documentation regarding that event in the central database system. Figure 2 below shows trends in the elapsed time between progress note entry and the related event. During both periods, the majority of all progress notes were entered by the first day following the event. But contrary to expectations, the proportion of progress notes entered in each time period during the pilot is marginally, but consistently, below that of the pre-pilot period. By the fifth day, over 90% of all notes were entered for the pre-pilot period, compared to 75% for the pilot. By this measure, timeliness decreased somewhat during the pilot period, but is high overall.

Figure 2 - Proportion of Progress Notes Entered by Days Following Event



There may be multiple reasons for this decrease in the timeliness of note entry. The overall increase in case closings during the pilot period may have changed the usual pattern of progress note entry. There was clearly an effort put into closing cases during the pilot period that could have had this effect. In Fulton County, a total of 12 laptops were ordered with eight docking stations and three wireless cards to be shared among the laptops. Of these, seven laptops were deployed with docking stations as desktop replacements, along with the three rotating wireless cards. The delay in the deployment of five laptops as well as the change in equipment and related work processes may account for a decreased workflow of progress notes during the pilot period. In this county, workers were not allowed overtime compensation for work done at home. Some additional adjustments to deployment and work processes may be necessary to take full advantage of the laptops for use in the field.

The most frequent performance problems commented on by respondents were slow connection speed or lack of connectivity. One caseworker mentioned the cold weather as preventing work in a car or leaving the laptop in a parked car. Adjusting to these issues can be part of the learning process in adapting to the new technologies.

Participants were asked to what extent using a laptop made a difference in CPS work compared to not having the laptop. Five different areas were examined: (1) timeliness of documentation, (2) ability to do work in court, (3) ability to access case information, (4) communication with supervisors, and (5) service to clients. Respondents were asked to rate the difference on a five-point scale where 1 = “Much worse,” 3 = “About the same,” and 5 = “Much better.”

Almost two thirds of the respondents reported that the use of laptops improved their work in terms of timeliness and 51% reported improved access to information. None reported a negative impact (Table 2 below).

Table 2 - Perceived Change Timeliness and Work Impacts – Fulton County DSS

	Much worse (n)	Somewhat worse (n)	About the same (n)	Somewhat better (n)	Much better (n)
Timeliness of documentation	0%(0)	0%(0)	38%(3)	50%(4)	13%(1)
Ability to do work in court	0%(0)	0%(0)	63%(5)	38%(3)	0%(0)
Ability to access case information	0%(0)	0%(0)	50%(4)	38%(3)	13%(1)
Communication with supervisors	0%(0)	0%(0)	88%(7)	13%(1)	0%(0)
Service to clients	0%(0)	0%(0)	75%(6)	25%(2)	0%(0)

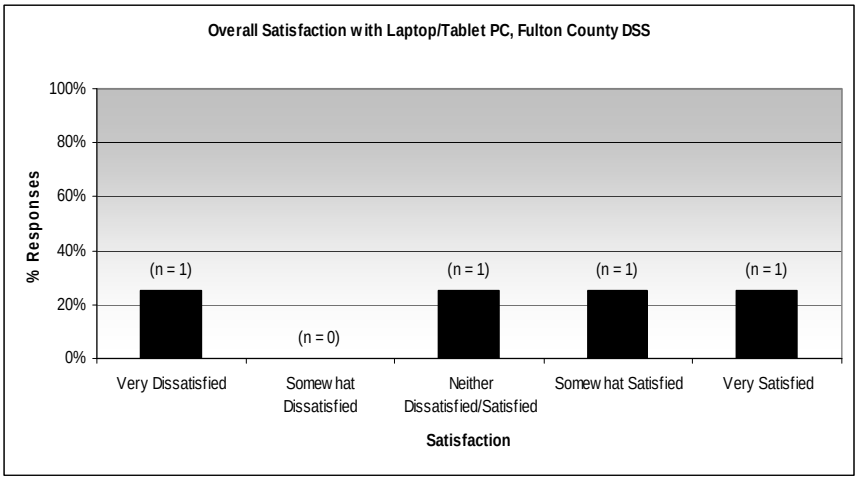
In addition, one respondent reported improvement in communicating with supervisors and two (25%) reported positive impacts in providing service to clients. Ability to work in court also improved for 38% of these respondents. Only three respondents (38%) reported using the laptops in court, but survey data do not account for this low level of use in court.

That none of the respondents reported a negative impact on timeliness is somewhat inconsistent with the timeliness of documentation results obtained from the central data base. It is possible that the reduction in timeliness seen in progress note entry was too small to be noticed by the caseworkers.

Satisfaction

The overall level of satisfaction with the laptops was moderate. Figure 3 below shows that two of the four respondents expressed being “Somewhat satisfied” or “Very satisfied,” compared to one respondent being “Very dissatisfied” and one respondent indicating being “Neither dissatisfied/Satisfied.”

Figure 3 - Overall User Satisfaction with the Laptops



** Based on survey respondents who took the post survey n = 11. Total number of testers n = 22.*

Laptop use was generally seen as contributing to lower job-related stress; three of the four respondents said that it did reduce stress, while one said it did not. Those who reported a reduction in stress said that their ability to catch up on their work and having the flexibility of working on documentation outside of the office were reasons for stress reduction. One respondent said, "It allows me greater flexibility to do work. It also makes on-call work extremely easier and more manageable." Issues related to inadequate training were suggested as a reason why one caseworker did not feel as though laptops contributed to lower job-related stress, "I have one [a laptop] that I have no idea how to get onto and do my work, due to lack of knowing how to get onto work Web sites."

Overall, three of the four respondents would recommend the use of laptops to colleagues, while one was unsure. One respondent pointed out that, "It can be very beneficial when you are able to gain access to CONNECTIONS while in the field or just out of the office."

APPENDIX A – Methodology, Data Collection, and Timeline

There were three streams of data collection throughout the project. Two online surveys, as well as data from the central OCFS CONNECTIONS database, provided quantitative data to assess various productivity, satisfaction, and timeliness measures. In addition, the different uses and locations of use were documented. This data was supplemented by qualitative data gathered from ten district teleconferences. Each method is described in greater detail below.

Online Surveys

Two separate surveys, a baseline and post-pilot survey, were administered. The surveys collected data about respondents' perceptions and attitudes using the laptop or tablet PC within several areas of CPS work – work practice, work time, demographic information, mobility/location, skill and stress levels, technology acceptance, training, and use of technology. The surveys were developed over a period of a several months and a pre-survey was tested. The surveys were modified based on the pilot survey results and the project team's knowledge and understanding of CPS work. The online surveys were developed and administered through commercial software (Survey Monkey).

The names, email addresses, and titles of participating CPS caseworkers were collected from each of the participating District Offices. Personalized survey invitations were emailed to participants. The baseline survey was administered prior the deployment of laptops or tablet PCs to participating caseworkers. The baseline survey was open for three weeks starting on 9/21/07 and ending 10/5/07.

The post-pilot survey was administered three months following the deployment of laptops. The survey was open for one week; starting on 1/3/08 and ending 1/10/08. Data was collected from three new thematic categories, namely the impact of laptops on caseworkers' daily activities, mobility-related issues, and technical difficulties experienced during the pilot. Data quality checks were performed and the data was recoded as needed.

Teleconferences

During the week of December 10 – 14, 2007, CTG held separate teleconferences with project participants in 10 County DSS in NYS to learn more about how they were using the laptops and tablets deployed for CPS work. Participating County DSS were chosen by CTG and the NYS OCFS liaisons. Criteria for choosing the districts included (1) How long they had the technologies in use, and (2) districts that provided a full range of geographical representation across the state, in terms of rural and urban settings and overall size.

Each district participated in one teleconference with CTG interviewers. All participants were given sample questions before the teleconferences, which dealt with deployment, connectivity, use and location, changes in work, issues/concerns, policy implications, and overall benefits of laptop use. The following table shows the districts interviewed and the number of participants in each call.

Table 3 – Teleconference time and participant information

County DSS	Date of Teleconference Interview	# of Caseworkers	#of Supervisors	Other(s) Participating
Albany	12/10/07	6	0	LAN Administrator
Chemung	12/1107	6	1	-
Clinton	12/10/07	7	1	-
Nassau	12/13/07	13	0	Assistant Director
Niagara	12/10/07	2	2	Staff Development Coordinator; IT Representative
Onondaga	12/11/07	8	0	IT Representative
Orleans	12/11/07	3	0	LAN Administrator
Putnam	12/13/07	3	1	-
Ulster	12/15/07	4	3	-
Washington	12/12/07	4	0	-

CONNECTIONS Data

The overall objective for using CONNECTIONS data was to measure the effect of the use of mobile technologies on CPS work practices by using data from the central database. The CONNECTIONS dataset (i.e., the central database) contained information on case records and caseworkers' progress notes. The information contained within each of these records included: Stage ID, Person ID, time-related information about the *investigation stage* (Intake Start Date, Investigation Stage Start Date, Investigation Stage End Date); *progress notes information* (Progress Notes ID, Progress Notes Event Date, Progress Notes Time, Progress Notes Entry Date, Progress Notes Types, Progress Notes Purposes); *safety assessments* (Safety Submit Date, Safety Approval Date) logged by caseworkers in each County DSS. The CONNECTIONS data was pulled by the date a progress note was entered by participants during two timeframes, the pre- and during-pilot phases (10/1410/07 – 11/26/07 and 11/27/07 – 01/09/08 respectively). A total of 2,393 progress note entries and 377 unique investigation stages made up the dataset from 22 caseworkers.

Appendix B – Device Specifications

All devices were selected, procured, imaged, and delivered to the County DSS by OCFS.

Laptop

Latitude D620, Intel Core 2 Duo T5500, 1.66GHz, 667Mhz, 2ML2 Cache, Dual Core, 14.1 inch Wide Screen WXGA LCD for Latitude D620, 1.0GB, DDR2-667 SDRAM, 1 DIMM for Dell Latitude Notebooks, Internal English Keyboard for Latitude Notebooks, Intel Integrated Graphics Media Accelerator 950 Latitude D620, 60GB Hard Drive 9.5MM, 5400RPMfor Dell Latitude DX20, Standard Touchpad for LatitudeD620, No Floppy Drive for Latitude D-Family Notebooks, Windows XP Professional, SP2 with media, for Latitude English, Factory Installed, Dell Black USB 2 Button Optical Mouse with Scroll for Latitude.

Tablet

HP Compaq tc4400 Tablet PC 26 EN376AV Product - HP Compaq tc4400 Tablet PC, Operating system - Genuine Windows® Vista Business, VISTA label - Microsoft® Vista Ready Label, Form Ultramobile form factor, Intel® Core™2 Duo Processor T5600, (1.83GHz, 2MB cache, 667MHz FSB), Intel® Centrino® Duo Label, 1024MB (667MHz, DDRII memory, 1 DIMM), 80GB Hard drive (5400 rpm), 12.1-inch TFT XGA WVA Display with Fingerprint Reader, 56K Modem, 10/100/1000 NIC, 6-cell high capacity Lithium Ion internal battery, Digital Eraser Pen with tether and clip, Keyboard with Enhanced Dual Pointing, Intel® Pro Wireless 3945ABG, security - Embedded TPM 1.2 security chip, and three year worldwide limited warranty.

Appendix C – The Center for Technology in Government (CTG)

The Center for Technology in Government (CTG) is an applied research center committed to improving government and public services through policy, management, and technology innovation. Through its program of partnership, research, and innovation, the Center provides government organizations and individuals with an array of tools and resources designed to support the development of a digital government. The goal of every CTG partnership project is to build knowledge that improves the way government works. CTG projects have helped state, local, and federal agencies increase productivity and coordination, reduce costs, enhance quality, and deliver better services to citizens and businesses. The results generated by each project add to a growing knowledge base designed to support the work of both government professionals and academic researchers. CTG receives funding through the University at Albany's state allocation, as well through grants and awards from foundations and federal agencies such as the National Science Foundation.

Since its creation in 1993, the Center has:

- conducted almost 50 partnership projects, which produced outcomes that have helped state, local, and federal government agencies improve services and operations;
- collaborated with nearly 100 government agencies, 42 private companies, and 14 academic institutions and research organizations;
- issued over 100 guides, reports, and online resources designed to support the work of government professionals, and over 300 scholarly articles that have contributed to the field of research on IT innovation in government organizations;
- developed and evaluated 12 prototype systems that answered critical policy, management, organizational, and technology questions;
- obtained 37 research grants and fee-for-service contracts for over $10 million;
- been honored with 16 state and national awards such as the Ford Foundation's Innovations in American Government award; and
- given over 250 trainings, workshops, and conference presentations provided data and support to more than 20 doctoral dissertations and masters projects.

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