



Center for Technology in Government

Assessing Mobile Technologies in Child Protective Services

**Orleans 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 policies 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 Orleans County DSS. Findings are based on data collected through online surveys, teleconferences, district questionnaires, and analysis of CONNECTIONS data (data collection methodology and timeframe can be found in Appendix A). The field test lasted 47 days from 11/23/07-1/9/08.

District Deployment

Orleans County DSS has six CPS staff responsible for child protective services. Orleans County is a rural area in Western New York and has approximately 44,000 residents. The Orleans County DSS participated in the demonstration project to learn if mobile technologies can help staff decrease duplicative documentation efforts (i.e., writing notes by hand and then entering them when they get into the office).

The Orleans County DSS deployed six HP Compaq tc4400 Tablets to six CPS caseworkers on 11/23/07 (see Appendix B for device specifications). All caseworkers received their own device. No district-provided external broadband cards were procured for any devices during the pilot period. Therefore, the wireless connectivity options were public wireless networks within the area and any home Internet Service Provider (ISP) access. 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 caseworkers using the laptops received group training and information from the County DSS regarding desirable areas for use and security precautions.

Finally, no policies were changed to support the introduction of mobile technologies before or during the pilot period. However, some work practices were changed during the pilot period; for example, caseworkers were instructed not to take the laptop into the field. In both periods, caseworkers were not allowed to receive overtime for work done at home after regular work hours.

Characteristics of Respondents

A total of seven CPS caseworkers participated in this study: five took the baseline survey (response rate 71%); four took the post-pilot survey (response rate 57%); and four took both the baseline and post-pilot surveys (response rate 57%).

The length of experience in CPS work, amount of overtime accrued weekly, the number of court days and estimated court waiting time are all important to understanding the overall context of the field environment. The Orleans County DSS respondents¹ were relatively new to CPS field work with an average of 3.5 years of experience; 60% reported CPS experience of one year or less. Respondents were working less overtime hours during the pilot period. The percentage of respondents reporting overtime of two hours or less in a week increased from 50% in the pre-pilot period to 100% in the pilot period. As a result, the average overtime hours decreased from 2.6 hours in the pre-pilot period to 0.8 hours in the pilot period. All of the respondents reported a typical court waiting time of one and a half hours or less and all respondents on average spending one or fewer days in court per month.

Participants were also asked about ease of logging-on to the device. Overall, one respondent said it was “Easy,” three rated it as “Neither difficult nor Easy,” and none of the survey respondents rated the log-on process as “Difficult” or “Extremely Difficult.”

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

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.

Use

Orleans County DSS respondents reported using the laptop during normal work hours, after work hours, and on-call. 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, reviewing case histories, and checking. One respondent reported using the laptop to access various forms of information from government Web sites at least once a day. One respondent accessed email at least once a day or more and one respondent reported using their laptop at least once a day or more to access map directions.

Orleans County DSS did not have district-provided external broadband cards during the pilot period. Some did use their home Internet Service Providers (ISPs) while at home. Only minor performance issues were reported including slowness and an inability to establish a connection in the field and while at home. Not enough information was provided during the teleconference or through open-ended comments to determine if connectivity was a problem while at court.

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. Two survey respondents reported using the laptop at home, for an average of two hours per week.

Table 1 - Location and Hours of Laptop Use per Week

	Use of Laptop (n)	Average length of use per week
Field	0% (0)	0.00 Hours
Court	0% (0)	0.00 Hours
Home	50% (2)	2.50 Hours
Do not use at all	0% (0)	--

** Based on survey respondents who took the post survey n = 4. Total number of testers n = 7.*

The amount of time caseworkers spend in court suggests that it is an unexploited location for mobile work in many districts. However, survey respondents in Orleans County DSS spend on average less than one day a month at court and wait for about one hour during a court visit. 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. As mentioned earlier, it is uncertain whether there is connectivity in the court house and testers have to rely on ‘hot spots’ while in the field – this may limit the opportunities to use the laptop effectively. In addition, testers were told they could not take the laptop with them into clients’ homes and therefore, many chose not to carry the laptop with them while in the field.

Caseworkers can work from home during off hours but will not be compensated for overtime while at home. Teleconference participants stated the policy was implemented to prevent high costs and caseworker burnout. Respondents also noted that they are not allowed to go into the office during non-working hours. Therefore respondents expressed the laptop added a tremendous benefit when on-call. One respondent described the situation, “prior to the laptops, caseworkers who were on-call or working outside normal hours were unable to get complete information on a particular case until the next business day. Now with the laptop, if they can connect, they can access this

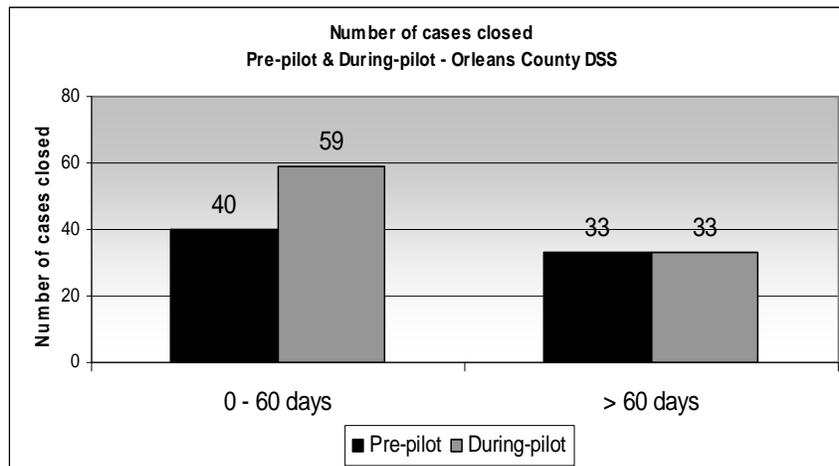
information when they need it.” Several teleconference respondents stated that working from home was now more efficient because you did not have to deal with the constant interruptions found in the office and it increased their flexibility.

Productivity and Efficiency

This analysis uses central database data and survey responses to examine two core questions about possible technology impacts within the Orleans 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 pilot period, up from 40 in the pre-pilot period to 59 during the pilot period. The number of cases closed in over 60 days remained unchanged from the pre-pilot to pilot period. Overall however, there is a slight increase in productivity; the total number of cases closed increased from 73 in the pre-pilot period to 92 during the pilot – a 26% increase. But, it is important to note that in this county the total number of cases available to be worked on² decreased from 177 in the pre-pilot period to 163 in the pilot period – a 7.9% decrease.

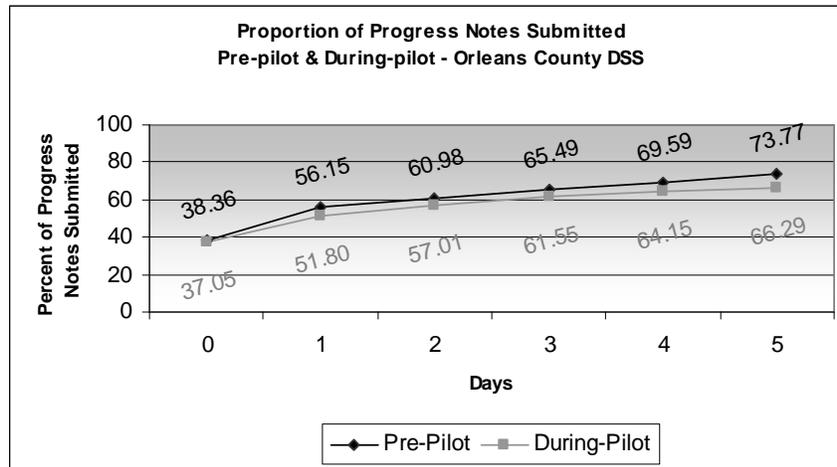
Figure 1 - Number of Orleans County DSS Cases Closed Pre-Pilot and During Pilot



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 period is marginally, but consistently, below that of the pre-pilot period. By the fifth day, over 70% of all notes were entered for the pre-pilot period, compared to 66% for the pilot. By this measure, timeliness decreased slightly during the test, but is still relatively high overall.

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.

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 test 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 Orleans County DSS, six tablet PCs were deployed, but without wireless access cards. Survey respondents reported that they were able to use the PCs at home using personal network access or occasionally at hot spots away from the office. The main out-of-office location for use of the PCs was reportedly at home. This was reported as valuable for on-call situations, particularly to access information on the central system without coming into the office. Overall, the opportunities and incentives for laptop use outside the office were limited.

Some additional adjustments to these deployment and work processes may be necessary to take full advantage of the laptops for use in the field. 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.”

Very few of Orleans County DSS participants responded to the questions regarding work impacts of laptop use. Only two of the six participants responded to these survey items. Both reported no impact on their work resulting from the tablet PC use (Table 2 below).

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

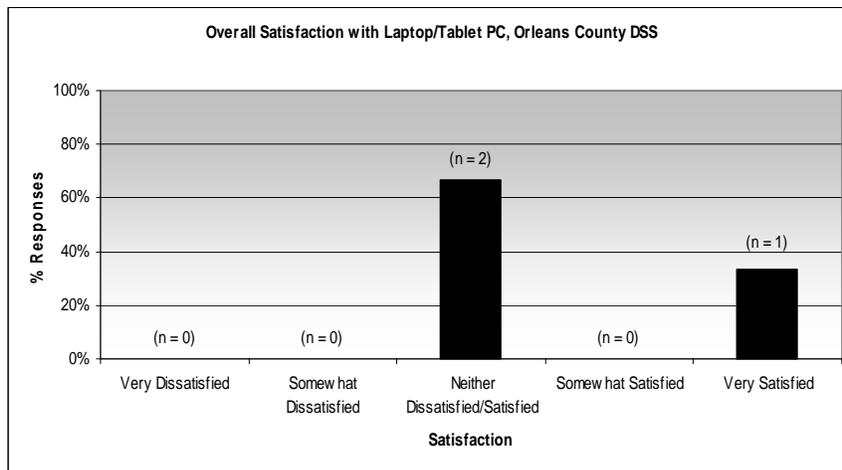
	Much worse (n)	Somewhat worse (n)	About the same (n)	Somewhat better (n)	Much better (n)
Timeliness of documentation	0%(0)	0%(0)	100%(2)	0%(0)	0%(0)
Ability to do work in court	0%(0)	0%(0)	100%(2)	0%(0)	0%(0)
Ability to access case information	0%(0)	0%(0)	100%(2)	0%(0)	0%(0)
Communication with supervisors	0%(0)	0%(0)	100%(2)	0%(0)	0%(0)
Service to clients	0%(0)	0%(0)	100%(2)	0%(0)	0%(0)

There was some recognition of the overall potential value of the tablet PCs. When interviewed, respondents noted that the tablet PCs allowed caseworkers to have quicker responses to new information, have more access to information, and work at their own pace without any interruptions, especially when they are behind. Overall, total flexibility was mentioned as one of the key benefits associated with the use of the tablet PCs.

Satisfaction

The overall level of satisfaction with the tablet PCs was mixed (although, only three of the six participants responded to this survey item). Figure 3 below shows that only one of the three respondents expressed being “Very satisfied.” None of the question respondents expressed being “Dissatisfied” with the tablet PCs, however the remaining two respondents indicated that they were “Neither dissatisfied/Satisfied.”

Figure 3 - Overall User Satisfaction with the Tablet PCs



* Based on survey respondents who took the post survey n = 4. Total number of testers n = 7.

Some teleconference respondents and open-ended survey responses attributed the lower levels of satisfaction with the lack of a district-provided wireless connection. Another caseworker said, “We are not approved for overtime to do CPS work at home, so therefore the tablet is not utilized at home.” The tablet PC generally was not seen as contributing to

lower job-related stress; two of the three question respondents said that it did not reduce stress, while one respondent said it did.

Overall, all three respondents would recommend the use of the tablet PC to colleagues. One respondent said, “If colleagues had the ability to use the tablet outside of the office, I would highly recommend it.”

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 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 County DSS. 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 on 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 on 1/10/08. Data was collected from three new thematic categories: 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 that 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	12/11/07	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 (10/06/07 – 11/22/07 and 11/23/07 – 01/09/08 respectively). A total of 2,718 progress note entries and 236 unique investigation stages made up the dataset from seven 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;
- 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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