



Center for Technology in Government

Assessing Mobile Technologies in Child Protective Services

**Wayne 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 Wayne 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 for 40 days from 11/30/07- 1/9/08.

District Deployment

Wayne County DSS has 15 CPS staff responsible for child protective services. Wayne County is a mostly rural area with approximately 93,000 residents. The Wayne County DSS participated in the demonstration project to learn if mobile technologies can provide caseworkers with more opportunities to complete documentation while in the field and at court, hopefully enabling caseworkers more time with families in general.

The Wayne County DSS deployed 16 Dell Latitude D620 laptops to 14 caseworkers and two managers on 11/30/07 (see Appendix B for device specifications). Each person received their own laptop and docking station with keyboard and monitor. District-provided external broadband cards were distributed about one week later (during the week of 12/5/07). 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 participants received a training manual and participated in a one-hour group training session that demonstrated how to log-on to the device and explained security precautions. The Project Liaison provided technical support to caseworkers during the work week from 9 am to 5 pm during the pilot period.

One policy was modified during the pilot period as a result of the introduction of mobile technologies into the work place. Participants were required to sign-in and sign-out when working on-call. In both periods, caseworkers were allowed to use the laptops at home after regular work hours, but only when the caseworker was on-call would flex time be granted. Management communicated that any additional work done with the laptop while at home and after regular work hours was voluntary.

Characteristics of Respondents

A total of 14 CPS caseworkers participated in this study: 13 took the baseline survey (response rate 93%); 13 took the post-pilot survey (response rate 93%); and 12 took both the baseline and post-pilot surveys (response rate 86%).

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 work environment. The Wayne County DSS respondents¹ were very experienced in CPS field work, with an average of 9.2 years of experience; 77% reported CPS experience of six years or more. Respondents were working slightly more overtime hours during the pilot period, but relatively few overtime hours overall. The percentage of respondents reporting overtime of one hour or less in a week decreased from 92% in the pre-pilot period to 67% in the pilot period. As a result, the average overtime hours increased slightly from 0.6 hours in the pre-pilot period to 1.1 hours in the pilot period. Ninety-two percent of respondents reported a typical court waiting time of 1.5 hours or less and 54% reported 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) personal safety, and (6) amount of time available to use the laptop. How information was accessed and entered by participants was also examined.

Use

Wayne County DSS respondents reported using the laptop during normal work hours, after work hours, on-call, and when working overtime. Wayne County DSS desktops were removed and docking stations installed. Therefore, the full range of CPS-related work was completed using the laptops. 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, completing safety assessments, court reports, and email. Overall, 82% of respondents reported using the laptop to access various forms of information from government Web sites at least once a day. Similarly, all of the respondents accessed email once a day or more, while 91% of respondents reported using their laptop at least once a day or more to access map directions.

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.

The extent to which caseworkers can access information while out of the office has a big influence on what kinds of mobile work are possible. Respondents reported returning to the office to access case information less frequently during the pilot period. Laptop use decreased the frequency of respondents returning to the office to access information. Thirty-three percent reported returning to the office once a week or more, compared to 82% during the pilot period. The respondents were in the field approximately the same number of days per week (average about 3 days) during the pre- and pilot periods.

Several respondents commented on some of the often overlooked changes in mobility and communication patterns. For example, one stated, “You can do work out in the field without having to return to the office to do it. This save travel time,” while another wrote, “I know I am able to take the laptop home to work on case notes if need be, and to have it in the car to access information when needed.”

Wayne County DSS had district-provided external broadband cards during the pilot period. Survey respondents reported almost no obstacles to mobile use – no problems were reported with respect to establishing a connection, slow speed, or losing connections in any locations. However, one respondent reported, “I have had considerable problems accessing the Internet. I have received bugger overflow and other errors when trying to access the Internet. I have NOT had any significant problems accessing e-mail or CONNECTIONS.” Using the docking stations presented some initial challenges and adjustment, one respondent reported: “After disconnecting the laptop from the base and then reconnecting it, the desktop computer takes a long time to start up again.” Another respondent stated this process could take as long as 8 minutes.

Participants were also asked about ease of logging-on to the device. Overall, 91% of respondents said it was “Easy” to “Extremely easy,” compare to 9% of respondents who rated the log-on process as “Difficult,” none of the respondents rated it as “Neither difficult nor Easy.”

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, respondents reported using the laptop most frequently at home (77%), for an average of 3.45 hours per week; 69% use it at home for an average of 1.70 hours per week. Thirty-one percent use it at the court house 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 | 69% (9) | 1.70 Hours |
| Court | 31% (4) | 0.40 Hours |
| Home | 77% (10) | 3.45 Hours |
| Do not use at all | 0% (0) | -- |

** Based on survey respondents who took the post survey n=13. Total number of testers n=14.*

The amount of time caseworkers spend in court suggests that it is an unexploited location for mobile work. Wayne County DSS respondents spend an average of 3.5 days a month at court and wait on average 1.5 hours during a court visit. Given that court connectivity did not pose problems for most, the relatively short waiting periods may be an opportunity for some caseworkers. One

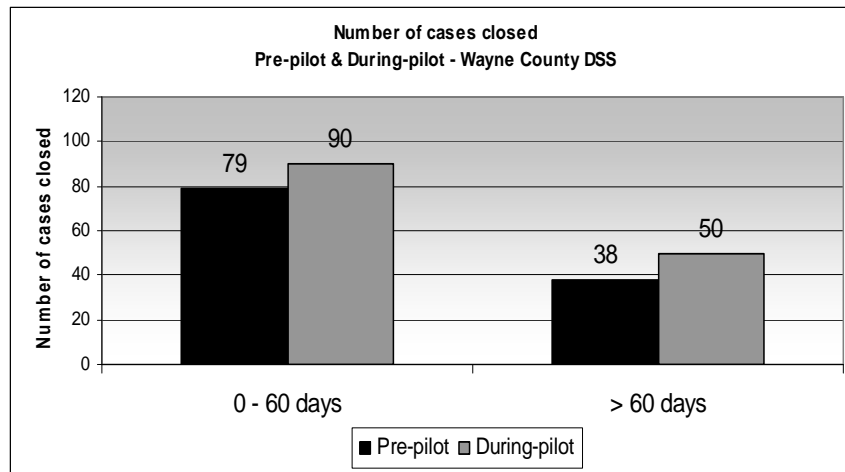
respondent stated, “When at court, I no longer feel like I am standing around, wasting time while waiting for my case to be called.” However, others do not see court as an opportunity: “I don't find it that helpful at court because you are usually talking with clients’ attorneys while there and I haven't had enough down time there to bring the laptop.”

Productivity and Efficiency

This analysis uses central database data and survey responses to examine two core questions about possible technology impacts within the Wayne 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 from the pre-pilot period (79) to the pilot period (90). The number of cases closed in over 60 days increased as well, from 38 in the pre-pilot period to 50 during the pilot period. This is a marked increase in productivity during the pilot period; the total number of cases closed increased during the pilot period, from 117 in the pre-pilot to 140 during the pilot – almost a 20% increase. It is important to note that in this county the total number of cases available to be worked on² decreased slightly from 297 in the pre-pilot period to 281 in the pilot period – a 5.4% decrease (please note, Wayne County DSS was experiencing an overall increase in “intakes” or new cases in the months before and during the pilot. This pilot examined only 40 days and during that time period, the cases available to be worked on decreased slightly).

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

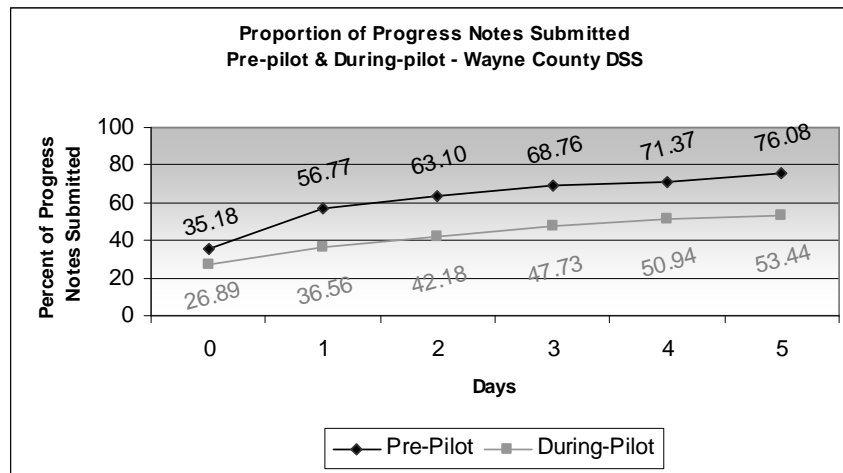


Another indicator of timeliness is elapsed time – or the number of days between an event and the posting of documentation regarding that event in the central database system. Figure 2 below shows trends in the elapsed time between progress note entry and the related event. During the pre-pilot period, the majority of all progress notes were entered by the day following the event, but only

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.

37% during the pilot period. By the fifth day following the event, 76% of the notes were entered for the pre-pilot period, but only 53% for the pilot period. Contrary to expectations, the proportion of progress notes entered in each time period during the pilot is consistently below that of the pre-pilot period. By this measure, timeliness decreased during the pilot, but is relatively 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 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.

The use of new technology also requires a period of adjustment. In Wayne County DSS, a total of 16 laptops with external broadband cards and docking stations were deployed as desktop replacements. This kind of equipment change can require extra effort in the short run and require a period of adjustment. In this case some survey respondents reported difficulties when reconnecting the laptops to docking stations. It is not clear, however, how common these problems were.

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.”

The Wayne County DSS respondents reported some positive impacts on their work resulting from laptop use, shown in Table 2 below. For documentation, 73% of the respondents reported improvements in timeliness of documentation and 91% for improved ability to access case information. Ability to work in court improved for 55% and 27% reported improvements in ability to communicate with supervisors. Forty-six percent reported improvements in service to clients. None of the respondents reported any negative impacts

Table 2 - Perceived Change Timeliness and Work Impacts – Wayne 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) | 27%(3) | 64%(7) | 9%(1) |
| Ability to do work in court | 0%(0) | 0%(0) | 46%(5) | 46%(5) | 9%(1) |
| Ability to access case information | 0%(0) | 0%(0) | 9%(1) | 36%(4) | 55%(6) |
| Communication with supervisors | 0%(0) | 0%(0) | 73%(8) | 27%(3) | 0%(0) |
| Service to clients | 0%(0) | 0%(0) | 55%(6) | 46%(5) | 0%(0) |

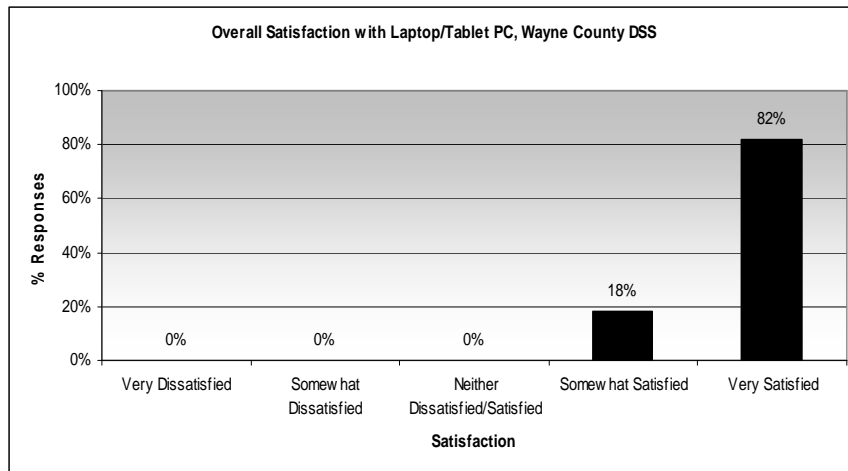
The lack of reported negative impacts on timeliness and other work activities is somewhat inconsistent with the timeliness of documentation results obtained from the central database. These reported positive impacts may be related more to the increased rate of case closing.

Several respondents did recognize the overall potential value of the laptops. Positive comments included: “Having a laptop when on-call during the evening and weekends takes away the need to take reports orally. Saves a lot of time” and, “Being on-call is much easier with a laptop. When at court, I no longer feel like I am standing around, wasting time while waiting for my case to be called. Also, I know that I can type notes whenever I want to.”

Satisfaction

The overall level of satisfaction with the laptops was exceptionally high. Figure 3 below shows that all question respondents expressed being “Somewhat satisfied” or “Very satisfied” with the use of the laptops.

Figure3 - Overall User Satisfaction with the Laptops



* Based on survey respondents who took the post survey n = 13. Total number of testers n = 14

Laptop use was generally seen as contributing to lower job-related stress; 91% of respondents said that it did reduce stress, while 9% said it did not. Those who reported a reduction in stress attributed this to their ability to catch up on their work, just knowing the laptop was available, increased

access to information, and the increased flexibility of working on documentation outside of the office.

Overall, all respondents would recommend the use of laptops to colleagues. One respondent expressed the following sentiment: “It’s nice to have CONNECTIONS on the go!”

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 (10/20/07 – 11/29/07 and 11/30/07 – 01/09/08 respectively). A total of 4,201 progress note entries and 398 unique investigation stages made up the dataset from 14 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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