Portable Information Technology Pilot Program

Report to the Governor and Legislature

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PORTABLE INFORMATION TECHNOLOGY DEMONSTRATION PROJECT

REPORT TO THE GOVERNOR AND THE NEW YORK STATE LEGISLATURE

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EXECUTIVE SUMMARY

The NYS Office of Children and Family Services (OCFS) is submitting this Portable Information Technology Project report in accordance with Chapter 57 of the Laws of 2007. This report is a follow-up to the report OCFS made in January 2008 which described the extended laptop pilot conducted by Child Protective Services (CPS) caseworkers, supervisors in managers in the New York City Administration for Children's Services (NYC/ACS). Due to a longer than expected schedule to deploy the portable devices to CPS caseworkers in the local districts participating in the portable technology demonstration, OCFS extended the field test period into mid-January, 2008. The data collected from 20 of the districts has been compiled and analyzed during the ensuing weeks and are presented in this report.

The NYS Legislature appropriated $1 million in SFY 2006-07 to enable OCFS to pilot the use of portable technology by CPS caseworkers. Based on positive pilot results, the State Legislature appropriated an additional $1 million in 2007-08 to expand the project. OCFS brought an additional 23 local districts into the project which brought the total number of CPS caseworkers, supervisors and managers who had access to portable technology to nearly 1,000.

Based on first year findings, OCFS determined that the second year (demonstration) phase of the project would focus primarily on the use of laptop and tablet PCs with provision for wireless access of these devices to the central database. The devices deployed by OCFS contained wireless cards and most of the participating local districts procured cellular broadband service. Since CPS caseworkers spend significant amounts of time in court awaiting appearances, OCFS collaborated with the state Office of Court Administration (OCA) to provide WiFi access in areas of court facilities to which CPS staff had access.

The inclusion of 23 local districts in the demonstration project enabled OCFS to test the technology in a wide range of organizational, technical, and geographic environments, although it added a significant level of complexity to the administration of the project and the evaluation of the data. As was the case for the pilot phase of the project, several administrative factors affected the project schedule, including the time needed to select the participating districts, receive approval to purchase the equipment and to procure and deploy the equipment. Three of the participating districts were unable to procure and deploy equipment that they were authorized to purchase within the field test time frame.

The lengthy period of time needed to accomplish these administrative tasks left inadequate time to field test and evaluate the use of the portable equipment within the legislatively-mandated one-year timeframe. A lesson learned from this and many similar projects is that a technology project's "life cycle" often requires longer timeframes to plan, execute and evaluate its use and effectiveness. It is possible that the results obtained in this demonstration could have been more positive if participating caseworkers were afforded more time to adjust to using the technology prior to measuring how they used and the impact of that use.

The Center for Technology in Government conducted the field test and evaluation of the demonstration project. The focus of the field test and evaluation was to learn how portable technology affects CPS caseworker productivity, mobility and job satisfaction. CTG explored the following areas:

- *Efficiency/ Productivity* - measured by factors such as volume of case closings and number of case notes produced; the timeliness in the completion of this case documentation; and the ability to use time differently and/or more effectively.
- *Types and Locations of Work* - the work activities supported by the portable technology; where the technology was being used most frequently; the barriers/issues encountered by CPS workers in specific locations.
- *Effect on Current Work Practices and Policies* - how work practices changed with the introduction of technology and how policies and management practices may impede or promote the use of laptops.
- *Overall Opinion and Satisfaction* - effect of using the technology on workers' overall job satisfaction, work-related stress levels, and willingness to recommend the technology to co-workers.

CTG concluded that portable technology provided a useful tool for CPS work and cited evidence of improved productivity in terms of the volume of work produced. The findings regarding the timeliness of task completion were somewhat less positive, however, there appears that these measures may have been affected by a concentration on catching up on overdue work. CTG reported that the participating caseworkers perceived that the use of the portable devices helped them to stay more on top of their work which reduced job stress and increased job satisfaction.

To the extent resources allow, OCFS will seek to pursue CTG recommendations that are presented in the evaluation report. Specifically, OCFS will seek to;

- Provide for information exchange among the participating concerning the development and administration of work place policies and technical enhancements that support a mobile workforce. If possible, OCFS will seek model policies from jurisdictions nationally and within the State that promotes mobilizing the workforce.
- Provide additional resource material to CPS staff on how to maximize the wireless capabilities of the laptop and tablet PCs.
- Study the question of the benefits and consequences of utilizing portable devices as the primary automated equipment for the CPS workforce. A firmer understanding of this area will inform decisions on the provision of automated support to line caseworkers over the long-term.
- Continue to work with the Office of Court Administration to expand opportunities for caseworkers to use the portable devices in appropriate spaces within court facilities.
- Analyze data from the participating districts to determine if with more experience, workers achieve higher levels of improvements than were noted in this report

BACKGROUND

The Portable Information Technology Demonstration Project, authorized by Chapter 57 of the Laws of 2007, expands on the previous year's pilot initiative (Chapter 58 of the Laws of 2006). Pursuant to Chapter 58, the Office of Children and Family Services (OCFS) used the $1 million that the Legislature appropriated to test the use of several different portable technologies with Child Protective Services (CPS) caseworkers in the NYC Administration for Children's Services (NYC/ACS), the Westchester County Department of Social Services and the Monroe County Department of Human Services. The tested technologies included laptop PCs, tablet PCs, digital pens, portable digital assistants, voice recognition software, telephonic dictation and cell phones. OCFS engaged the Center for Technology in Government (CTG), University at Albany/SUNY to evaluate the results of the pilot. In its report to the Governor and State Legislature in January 2007, OCFS reported evidence that portable technology, notably the use of laptop PCs in tandem with wireless connectivity "assists CPS caseworkers to more effectively perform investigation tasks and contribute[s] to increased productivity."

Based on the positive pilot results, OCFS and NYC/ACS used first year funding to conduct an expanded pilot through which an additional 200 laptop PCs were deployed to CPS caseworkers, supervisors and managers in two ACS field offices (150 William St./Manhattan and Staten Island). OCFS presented the results of the expanded pilot in *Portable Information Technology Pilot Program: Report to the Governor and Legislature, January 2008*. In that report, OCFS reported modest productivity gains and a positive impact on staff morale.

In Chapter 57 of the Laws of 2007, the State Legislature directed OCFS to:

> [C]ontinue and expand the demonstration project … in local social services districts selected by [OCFS] to determine best practices in portable information technology for child protective services caseworkers to improve the workload of the child protective workforce . . . that permits caseworkers to work from field locations while investigating allegations of child abuse and maltreatment.

Chapter 57 also directed OCFS to submit a report by January 15, 2008, "detailing which local social services districts participated in such demonstration project, the impact, by district of such demonstration project on caseworker efficiency and productivity, and the impact on caseload for caseworkers with such technology by district." The State Legislature appropriated $1 million to OCFS to implement the demonstration project.

As discussed more fully in the next section, the deployment of the portable technology to CPS staff participating in the demonstration phase could not be completed until mid-November, 2007. In order to inform this report with at least two months of field experience, OCFS extended the field test/evaluation period into mid-January, 2008. OCFS submitted an interim report on January 15, 2008 in accordance with the legislatively-required report submittal timeframe that presented the findings of the NYC/ACS expanded pilot. In the ensuing weeks, OCFS and CTG compiled and analyzed data from the demonstration field test. The findings of that evaluation are presented in this report as Appendix A.

The focus of the field test and evaluation conducted by CTG was to learn how portable technology affects CPS caseworker productivity, mobility and job satisfaction. CTG explored the following areas:

- *Efficiency/ Productivity* - measured by factors such as volume of case closings and number of case notes produced; the timeliness in the completion of this case documentation; and the ability to use time differently and/or more effectively.
- *Types and Locations of Work* - the work activities supported by the portable technology; where the technology was being used most frequently; the barriers/issues encountered by CPS workers in specific locations.
- *Effect on Current Work Practices and Policies* - how work practices changed with the introduction of technology and how policies and management practices may impede or promote the use of laptops.
- *Overall Opinion and Satisfaction* - effect of using the technology on workers' overall job satisfaction, work-related stress levels, and willingness to recommend the technology to co-workers.

IMPLEMENTATION APPROACH AND PROGRAM SCOPE

OCFS was guided by several factors in determining its approach to implementing the portable technology demonstration:

- The positive findings in the pilot phase were based on limited data. OCFS wished to validate these results in a wider range of organizational and geographic environments. Therefore, OCFS sought to include as many local districts in the demonstration phase as possible.

- The pilot evaluation results suggested that laptop PCs, used in conjunction with wireless connectivity, presented the greatest potential to improve CPS work than all of the other technologies reviewed. OCFS therefore focused the demonstration phase on the use of this specific technology. OCFS also wished to test the use of tablet PCs that offered both keyboard and handwriting-to-text capabilities.

- The three local districts that participated in the pilot phase encountered significant delays in procuring the equipment and services that they were permitted to select. Moreover, OCFS wished standardize the equipment that accessed the state network as well as take advantage of bulk purchase pricing. Therefore, OCFS determined that it would centrally procure the laptop and tablet PCs that would be tested in the demonstration phase.

- OCFS and the three pilot local districts significantly benefited by CTG's independent and expert perspective. CTG was retained to conduct the evaluation of the demonstration project.

In late April 2007, OCFS solicited proposals from local districts to participate in the Portable Information Technology Demonstration Project. Applicants were asked to define a specific business problem (related to the performance of CPS investigations) and describe how the use of portable technology would address that problem. In order to maximize the number of local districts that could participate in the project as well as

maximize the quantity of portable devices that could be made available to CPS caseworkers, OCFS placed the following parameters on project funding:

- The value of portable technology to be supported with state funds in any local district could not exceed $75,000
- Local districts were encouraged to provide a "match" contribution. For the most part, participating local districts used local funds to procure cellular broadband service to expand the wireless capabilities of the laptop and tablet PCs which contained internal wireless cards (for WiFi access).
- Participating local districts were responsible for deploying the equipment to their staff and training them in the use of the portable equipment and on local policies as regards their use. OCFS provided resource material to support training on wireless access.

It is noteworthy that 23 local districts, including many of the State's largest jurisdictions, submitted proposals. These were reviewed by a multi-disciplinary panel of OCFS staff. All of the proposals were determined to meet project requirements and the aggregate sum of funds requested by the applying districts fell within available funding. A summary of these projects is presented in the CTG evaluation report The business problems most frequently cited by the local districts seeking to participate in the project included: enabling CPS caseworkers to spend more time in the field, working directly with families; reducing the incidence of overdue CPS investigations and safety assessments; reducing travel time and cost by reducing the need for caseworkers to return to the office to perform case documentation tasks; and making more productive use of downtime such as when caseworkers are waiting in court for appearances.

With the exception of NYC/ACS and the Erie County DSS, the participating local districts agreed to accept centrally procured laptop or tablet PCs. Niagara, Ulster and Westchester counties also requested funds to purchase supportive technologies such as mobile scanners or printers and global positioning systems (GPS) toward the goal of enabling county vehicles to serve as mobile offices. ACS, which was already testing ultra-light laptop PCs, opted to test the use of telephonic dictation services. Erie County DSS was permitted to procure ultra-light tablet PCs from a specific vendor with which it had already established a relationship. These two local districts encountered significant delays in procurement that prevented the acquisition of the service/equipment in time to participate in the project evaluation.

OCFS purchased 464 Dell Latitude D620 laptop PCs and 53 HP/Compaq tc4400 tablet PCs. The device specifications for these models appear as an appendix in the CTG evaluation report. Each of these models was purchased through the Office of General Services Aggregate Buy program, representing the "low bid" in each model category. To further encourage the mobilization of the CPS workforce as well as gain efficiencies in the overall hardware assets managed by OCFS, participating districts were given the opportunity to acquire docking stations for the portable devices which in turn enabled the laptop or tablet PCs to serve as the CPS caseworker's primary personal computer. These docking stations were supplemented with a mouse, keyboard and monitor. A total of 396 docking stations were deployed.

The laptop and tablet PC models were purchased with an internal wireless card that could be used to connect the portable devices to the State network where WiFi (hot spots) were available. As noted, local districts were asked to locally purchase broadband wireless services to increase the opportunities for the staff to gain wireless access to the network. It is important to note that the method of wireless access to the State network is through a virtual private network (VPN) that secures the transmission to and from the portable device and the network. In addition, OCFS procured licenses for encryption software that was installed on each device to protect data that may be stored on the device's hard drive. OCFS policy prohibits the storage of personally identifying information on any form of portable device, including storage media. When connected wirelessly to the State network, case data is immediately entered into the central data base and is at no point stored locally on the device itself.

To provide added opportunity for CPS caseworkers to utilize the portable devices, OCFS collaborated with the state Office of Court Administration (OCA) to install wireless access points in those areas of court facilities most commonly occupied by CPS workers while awaiting court appearances. A total of 20 of 24 demonstration phase court sites have already been wired to enable caseworker access to the state network. OCFS and OCA will look for additional opportunities to expand access to the system from court facilitates.

PROCUREMENT AND DEPLOYMENT

As was the case for the pilot phase of the project, several administrative factors affected the project schedule. The factors that affected the demonstration phase included the time needed to:

- Solicit and evaluate local district proposals to participate in the demonstration project;
- Research, test, select, procure and deploy the laptop PC and tablet PC models; and
- Obtain budget certification to purchase equipment.

The lengthy period of time needed to accomplish these administrative tasks left inadequate time to field test and evaluate the use of the portable equipment within the legislatively-mandated one-year timeframe. A lesson learned from this and many similar projects is that a technology project's "life cycle" often requires longer timeframes to plan, execute and evaluate its use and effectiveness. It is possible that the results obtained in this demonstration could have been more positive if participating caseworkers were afforded more time to adjust to using the technology prior to measuring how they used and the impact of that use.

OCFS deployed a total of 464 laptop PCs and 53 tablet PCs to CPS caseworkers and supervisors in 23 local districts. Since several of the participating districts made some or all of the portable devices available to groups of staff, approximately 650 CPS staff had access to this technology. In addition, NYC/ACS planned to include 30 staff in its test of telephonic dictation services and Erie County DSS planned to deploy tablet PCs to 45 staff. When combined with the number of staff participating in the pilot and

expanded pilot phases, nearly 1,000 CPS staff have utilized portable technology over the past two years through this initiative.

Details on how the participating local districts deployed equipment is contained in the District Profiles contained in the CTG evaluation report (Appendix A). A description and specification of the laptop and tablet PCs deployed through this project is also contained in the CTG evaluation report.

SUMMARY OF EVALUATION FINDINGS

CTG concluded that mobile technology provided a useful tool for CPS work and cited evidence of improved productivity in terms of the volume of work produced. The findings regarding the timeliness of task completion were somewhat less positive, however, there appears that these measures may have been affected by a concentration on catching up on overdue work. CTG reported that the participating caseworkers perceived that the use of the portable devices helped them to stay more on top of their work which reduced job stress and increased job satisfaction.

CTG reported on the significant variability across the participating districts in terms of: how the portable technology was deployed; the level of user support; personnel policies guiding when and where the portable technology could be used; and the technical conditions such as the availability of broadband access. CTG found evidence of at least some relationship between personnel policies and technical conditions with productivity changes, which appears to suggest that administrative and technical changes in the control of child welfare administrators can lead to additional positive productivity results, thereby increasing the potential benefit that the technology will produce across the State.

Among the key evaluation findings include:

- CTG determined that on average, the number of cases to be worked on before and during the field test increased only slightly but case closings increased by 1,254 cases (32%). The majority of the investigations completed during the field test were older than 60 days. This suggests that the participating districts utilized the portable technology during the field test period to catch up on CPS investigations that were overdue at the start of the period.

- The volume of progress notes that were completed by CPS caseworkers increased during the field test by 14%. However, measures of the timeliness of progress notes completion (comparing the event date with the date the event was documented) as well as the completion of safety assessments within seven days indicated poorer performance during the field test. CTG notes the possibility of the timeliness indicators being affected by the apparent emphasis on catching up on older cases where the documentation would be less timely. If that is the case then a review of similar data in future months would be expected to yield improvements in timeliness of task completion as well.

- CTG also noted that the field test period started immediately upon the staff receiving the portable devices, leaving little time for their administrations to

evaluate the need for and adjust workplace policies and for the caseworkers to master the use of the portable device and wireless access. CTG suggested that additional measurements taken in the future when workers would have gained greater experience in using the technology could indicate more substantial productivity increases.

- The majority of participating caseworkers expressed satisfaction with the portable devices; 81% of the respondents stated that they would recommend the use of the portable devices to a coworker. Caseworker satisfaction was positively related with the existence of workplace policies concerning work at home and overtime. It is useful to know that factors over which child welfare administrators have some control, namely work place policies, appear to affect both improved productivity and worker satisfaction.

NEXT STEPS

To the extent resources allow, OCFS will seek to pursue CTG recommendations that are presented in the evaluation report. Specifically, OCFS will seek to;

- Provide for information exchange among the participating concerning the development and administration of work place policies and technical enhancements that support a mobile workforce. If possible, OCFS will seek model policies from jurisdictions nationally and within the State that promotes mobilizing the workforce.
- Provide additional resource material to CPS staff on how to maximize the wireless capabilities of the laptop and tablet PCs.
- Study the question of the benefits and consequences of utilizing portable devices as the primary automated equipment for the CPS workforce. A firmer understanding of this area will inform decisions on the provision of automated support to line caseworkers over the long-term.
- Continue to work with the Office of Court Administration to expand opportunities for caseworkers to use the portable devices in appropriate spaces within court facilities.
- Analyze data from the participating districts to determine if with more experience, workers achieve higher levels of improvements than were noted in this report.

APPENDIX A

Assessing Mobile Technologies in Child Protective Services A Demonstration Project in 23 Local Departments of Social Services, Center for Technology In Government, University at Albany/SUNY – December 2007

Center for
Technology in Government

Assessing Mobile Technologies in Child Protective Services:

A Demonstration Project in 23 New York State Local Social Service Districts

Assessing Mobile Technologies in Child Protective Services:

A Demonstration Project in 23 New York State Local Departments of Social Services

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Finally, without the tireless work of David Kislowski, manager of Network Access and Equipment Deployment, OCFS and Ted Salem, consultant and Portable Technology Pilot Project Manager, OCFS for deploying devices and managing resources, this statewide effort could not have taken place.

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Executive Summary

The *Demonstration Project in 23 NYS Local Social Services (2008)* was a collaborative effort among the NYS Office of Children and Family Services (OCFS), 23 NYS Local Departments of Social Services (also referred to as local districts), and the Center for Technology in Government (CTG) at the University at Albany. The focus of this effort was to learn more about the conditions and efforts needed to deploy mobile technologies statewide, as well as to investigate the impacts on CPS work and work processes.

In this effort, districts were asked to submit proposals to OCFS for mobile technology funding. OCFS then selected districts and centrally procured the devices (laptops and tablets). OCFS led the statewide deployment with some assistance from the districts. Local connectivity contracts were under the purview of the districts to select and procure, as well as training and selecting CPS staff to participate. CTG conducted an independent assessment of the use of the technology within and across the districts. The results of how the technology impacted the work and work processes are presented in findings about caseworker productivity, mobility and satisfaction

In terms of assessment and statewide deployment of any technology, it is important to understand the variability in the CPS environment across the State. In a federated, intergovernmental program such as CPS, many policies and practices are developed and implemented by the district. This, coupled with naturally embedded differences in a county's demographics can makes the statewide picture even more complex. Thus, taking a birds-eye view and confidently stating that any changes are taking place means normalizing these inconsistencies so that patterns can be detected. More importantly, recognizing the divergent and complex environments can help in larger deployment planning efforts. Although pilot and district conditions did vary throughout the State, the results show a largely positive picture and suggest that mobile technology is a useful tool for CPS work.

The assessment across the districts shows that participants used their device in remote locations, mostly at home, a little less than 7.5 hours per week. Use at other locations include in the field and then a smaller percentage in court. In terms of work function completed with the devices, the most positive impacts reported were in the areas of "access to information" and "timeliness of documentation," with over 50% of the respondents rating these results "Somewhat better" or "Much better."

The results for timeliness and number of case closings seem to be somewhat paradoxical, appearing to show a substantial improvement in the volume of case closing, but a contradictory result vis-à-vis reduction in timeliness. The number of cases closed within the 60 day period increased in the pilot period: an improvement in timeliness. However the number of cases closed in longer than 60 days increased as well, suggesting decreased timeliness. This apparent contradiction can be accounted for by the increase in the overall number of cases closed from the pre-pilot period to the pilot period, a 32% increase, suggesting that caseworkers were "catching up" on older cases during the pilot period. Since this happened with a simultaneous improvement in timeliness with the less than 60 day cases closed, these results can be interpreted to indicate improvements in both volume and timeliness of work for the pilot period.

This increase in productivity was accompanied by what initially appeared to be lower performance in the timeliness of progress notes. In all the districts, the average elapsed time between an event

and progress note entry increased, thus decreasing timeliness. This pattern was consistent across all districts for the 1st through 7th days. Rather than a simple decrease in overall performance, however, this finding is most likely a direct result of the work on a backlog of closing older cases. If there is a backlog of older cases, it seems likely that there is also a backlog of progress note entry for those cases. If the workers are attempting to reduce that backlog by entering progress notes for events farther in the past, then the average delay for progress notes would increase as the "catching-up process" unfolds.

The analysis also shows evidence of a relationship between higher case closings performance and districts that had more overtime usage. Case closings in districts clustered with higher overtime were approximately 25% greater than those in the lower overtime usage. The districts are divided almost equally between the clusters as well, suggesting that the possible relationship is more general across the districts. Differences in technology conditions appear to be more strongly related to productivity results than the overtime analyses above.

Finally, in terms of overall opinion and satisfaction levels, all but one district had satisfaction ratings averaged in the positive side of the range, with three districts reporting very high overall satisfaction levels. In addition, 81% of the participants stated they would recommend that their colleagues use mobile devices to do CPS work.

Overall, the assessment showed positive results in terms of productivity, increased mobility and level of satisfaction. As OCFS and the local districts continue to meet the needs of its CPS workforce, it is apparent that mobile devices are a necessity. Throughout OCFS's three successive mobile technology efforts continuous feedback to the deployment process has been essential. While tremendous learning occurred in each initiative, more opportunities for investigation and improvement still exist. Thus, our recommendations present ideas for statewide deployment strategies and areas for continued exploration.

Introduction

In early 2006, the NYS Legislature and the NYS Office of Children and Family Services (OCFS) initiated a pilot program to test how portable information technology could be used in child protective services (CPS) casework. The pilot program was aimed at evaluating whether such devices facilitate increased efficiency and effectiveness in CPS investigations. The portable information technology project included three successive efforts, the *NYS Portable Information Technology Pilot (2006)*, The *Extended Pilot in New York City's Administration for Children Services(2007)*, and the *Demonstration Project in 23 NYS Local Departments of Social Services (2008)*. This report focuses on the *Demonstration Project*.

The *Demonstration Project* was a collaborative effort among the NYS Office of Children and Family Services (OCFS), 23 NYS Local Departments of Social Services (DSS), and the Center for Technology in Government (CTG) at the University at Albany. The focus of this effort was to learn more about the conditions and efforts needed to deploy mobile technologies statewide, as well as to investigate the impacts on CPS work and work processes.

The *Demonstration Project* was administered differently from the first two mobile technology efforts. In this effort, districts were asked to submit proposals to OCFS for mobile technology funding. OCFS then selected districts and centrally procured the devices. OCFS led the statewide deployment with some assistance from the districts. Local connectivity contracts were under the purview of the districts to select and procure, as well as training and selecting CPS staff to participate. CTG conducted an independent assessment of the use of the technology within and across the districts .

The focus of the assessment for the *Demonstration Project* was to learn how mobile technology affects CPS caseworker productivity, mobility and satisfaction. The following categories frame the core areas of investigation:

- *Efficiency/ Productivity* - measured by factors such as changes in number and timeliness of documentation (i.e., progress notes, safety assessments), change in the number of cases closed, and reports of ability to use time differently and/or more effectively.

- *Types and Locations of Work* - the types of work activities the laptop computers were used for and where they were being used most frequently. It also contains investigation of barriers/issues encountered by CPS workers in specific locations.

- *Effect on Current Work Practices and Policies* - how work practices changed with the introduction of technology and how policies and management practices may impede or promote the use of laptops.

- *Overall Opinion and Satisfaction* - effect of laptop use on workers' overall job satisfaction, work-related stress levels, and satisfaction with using the laptop, including willingness to recommend the laptops to other CPS workers.

The mobile device deployment started in late-October 2007 and was completed by mid-December 2007. For the assessment, 464 Dell Latitude D620 laptops and 53 HP Compaq tc4400 Tablets (see Appendix A for device specifications) were deployed to 484 CPS staff in 20 local districts throughout New York State (see Appendix B for table of districts, technology, and participation). It is important to note that 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.

All of the districts participated in at least three of the four data collection activities 1) online surveys, 2) data analysis from CONNECTIONS (central child welfare information system), 3) district teleconferences, and 4) district questionnaires (see Appendix C for data collection methods, tools, counts, and response rates and Appendix D for summary of the district teleconferences). Official data collection time lines for each of the districts started from the date of deployment and ended on January 9, 2008.

Of the original 23 local districts that obtained funding for mobile technologies, 20 were able to successfully deploy and participate in the assessment. As such, individual profiles for each of the 20 districts detail their assessments findings (at the end of this report are profiles for the participating districts). Subsequently, since not all districts were able to deploy in time, assessments for Westchester County Department of Social Services, New York City's Administration for Children Services, and Erie County Department of Social Services were not conducted and are not reported in the profiles.

District Environment and Conditions

Providing child protective services in New York State is a program whereby locally administered programs are supervised by a state agency. More specifically, Local Social Service Districts reside within each county and the city of New York, usually within a Department of Social Services (DSS) that are responsible for providing direct services to children and families. The state agency, OCFS, is located in Albany and responsible, among many things, for providing regulatory oversight of all local programs. In this report all references to "OCFS" means the state agency and "district" refers to the Local Social Service District or the County Department of Social Services organizations participating in the Demonstration Project.

In a federated model such as this, many policies and practices are developed and implemented by the district. Under their purview they can administer programs in a way that best suits their needs. This structure, common in intergovernmental programs, typically creates a diverse administrative environment across the state. This condition, coupled with naturally embedded differences in county geography, community make up, population, and location, makes the statewide picture even more complex.

Understanding the CPS variability across NYS is important for a couple of reasons. In terms of assessment, any statewide change in productivity, mobility, and satisfaction must take into consideration all district variability. One set of conditions exists with one district and does not within another. Taking a birds-eye view and confidently stating that any changes are taking place means normalizing these inconsistencies so that patterns can be detected.

In terms of deployment, recognizing the divergent and complex environments can help in larger planning efforts. Knowing that districts operate differently can help set expectations in how technology will/can be integrated. Further, sharing best practices among the districts can maximize the statewide investment.

The following areas show the range of variability in the district's policies, deployment strategies, and environmental conditions. Despite this range of conditions, clear statewide patterns in productivity did emerge.

Technology and Connectivity

Docking stations. Three quarters of the districts received docking stations with the mobile devices. Some of those districts removed desktop PCs and made the mobile device the primary piece of equipment while others allowed the mobile device to be used in addition to the desktop PC. The other quarter of the districts chose not to receive docking stations with the devices.

Connectivity. Responsibility for identifying and procuring connectivity contracts was the under the purview of the districts . More than half of the districts procured external broadband cards in hopes of having ubiquitous connectivity in the field. The other districts either opted not to obtain external broadband cards or were not able to do so during the pilot period. This meant that they relied on the internal wireless cards to use free wireless "hot spots" within the county or relied on their own connectivity solution at home. Although 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. Of those districts that procured external broadband cards, most of them were deployed at the same time as the devices although some districts were delayed in obtaining and distributing them.

Deployment

Training and Security. Although each district participated in the deployment of the mobile technologies, some districts took more of lead role while others relied on assistance from OCFS. One district held a kick off celebration before the two-hour group training, while others held individual sessions or only provided training as needed. In following this pattern, some districts asked CPS staff to sign receipts for the mobile devices, others simply handed them out. Finally, even though discussion of security precautions were mentioned within every district, some districts spent extra time going over preferred practices, while others discussed it informally. Only a few districts handed out written security information and procedures.

Policies

Working At Home. During the pilot period, twelve districts created policies that stated they would allow working from home on the mobile devices after regular work hours. One district created a policy stating that working from home (during or after regular work hours) with the mobile device was prohibited. The other seven districts did not provide information or did not address a working from home policy

Overtime and Compensation. During the pilot period, nine districts stated that they would provide compensation for time spent *working from home* after regular work hours with the mobile device. Five districts created policies stating that they would *not* compensate for time spent working from home using the mobile device after regular work hours. Six districts did not report any information about whether they would compensate for time worked at home after regular work hours.

Seven districts stated that they would provide compensation for work done on the mobile device after regular work hours *in the field*. Two districts created policies that stated they would not provide compensation for any work completed with the mobile device after regular work hours in the field. Ten districts did not report any information about whether they would or would not compensate for time worked in the field with the mobile device after regular work hours.

Pilot Conditions

Participants and Deployment Strategy. Each of the districts were responsible for identifying participants in the assessment. Some districts selected the entire CPS staff, while others asked for volunteers. One district selected participants based on seniority. Districts also created the deployment and device assignment strategy. In some districts each CPS staff person received their own mobile device while others had a group of CPS staff share a pool of devices. Also, in a couple of districts they employed both tactics including having some devices assigned to each person and the others shared among the "on-call" staff.

Pilot Period. Deploying devices to 20 districts across NYS is a large undertaking and it cannot be done within one day or even one week. Delivering devices to the districts is just one step in getting them ready for training and distribution. Districts assisted in the deployment but not every district had the resources to pick up where OCFS staff left off. Therefore, deployment was phased over a two month period and each district had a different pilot period length. Those districts that deployed the devices to their staff early had the longest pilot period (Putnam County DSS deploying on 10/22/08) and those who deployed last (Niagara County DSS deploying on 12/17/08) had the shortest pilot period. All district pilot periods had to end on 1/9/08 because of state reporting deadlines. Subsequently, the range of pilot period lengths ranged from 79 days to 23 days.

Available Cases To Be Worked On (Pre-Pilot vs. During-Pilot). When looking at potential changes in productivity during the pilot period, it is important to asses the level of work available to be done during that same time. In looking at the number of open cases available for CPS staff to work on during the pre-pilot period and during the pilot period, the overall number stayed relatively consistent. With this said, there were four districts that changes in their available cases to work on changed significantly. Two districts had about 22% less cases during the pilot period as opposed to their pre-pilot period. In addition, two different districts had approximately 12% more cases in the pilot period as opposed to their pre-pilot period (see AppendixF for changes in caseload from pre-pilot to during pilot periods).

Local Context

Geographic Variability. New York State boasts counties that run the spectrum of geographic variability, from concentrated urban environments to scattered rural communities. Some districts are very large in square miles (St. Lawrence County with over 2,800 square miles), while others are quite small in comparison (Putnam County with 246 square miles). In addition, populations are also quite diverse with Nassau County at 1.3 million residents and Seneca County with just over 34,000 residents. The size, location, and population determine the make up of the counties with a range of metro, urban, and rural areas.

CPS Experience. CPS staff within the districts that participated in the Pilot, varied in years of CPS experience. About half of the districts had CPS staff with below five years experience while the other half had staff with more than five years experience. The range spanned from one district having approximately 1.3 years average experience to another that averaged 9.3 years experience. Four districts had between 1.3 and 2.9 years experience, five districts had between 3.5 and 4.8 years experience, six districts had between 5.7 and 6.6 years experience, and three districts had between 9.2 and 9.3 years experience.

Conclusion

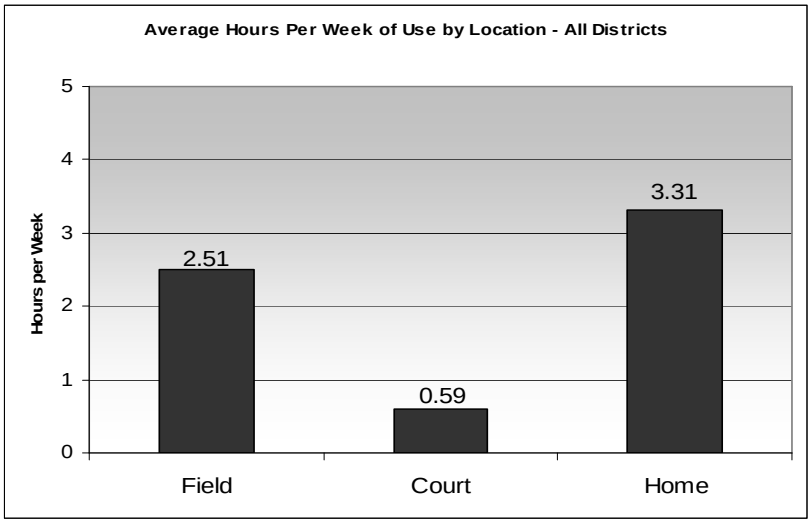
The variation in conditions described above is a natural and unavoidable characteristic of locally administered programs in NYS. If a technology initiative such as this is to yield the desired outcomes, it must be adapted to local conditions, as was the case here. The resulting mix of strategies and adaptations presents serious challenges to an assessment effort, since so many factors can influence the outcomes, both positively and negatively. In spite of these challenging conditions, the results presented in the following sections do show a largely positive picture and suggest that mobile technology is a useful tool for CPS work.

Findings

Mobility and Use

One important goal of the demonstration project was to assess the way having a laptop affected where work was done.[1] Therefore the survey that participants received at the end of the pilot period asked them to estimate the number of hours per week they used their laptop in various locations. The three areas of primary interest for mobile use are in the field, in court, and at home. The reported average use in these three locations across all respondents is shown in Figure 1 below. Overall, the respondents used their laptops a little less than 6.5 hours per week in locations outside of the office during the pilot period, with almost half of that use at home. Use at other locations outside the office amounted to a little over three hours per week.

Figure 1 - Average Hours Per Week of Use by Location - All Districts



The reported use in court of approximately one-half hour per week was somewhat lower than expected, given results from our previous research about the long waiting times in court. The pilot period was less than two months for many of the participants, however, and several reported no court appearances during that time. So these results may not be typical of laptop use over longer time periods or reflect the full potential for significant use in courts. The overall level of reported use may also be a result of limited wireless access available or private space to work in court. This may be due to limited wide-area service or lack of hardware, or both. Opportunities for use in court and while moving about in the field were further limited by conditions in many of the courts and the cold weather.

The overall averages also mask considerable variation among the districts. Some reported much higher levels of use outside the office. The Putnam County respondents reported over nine hours per week of use at home and three in court, while respondents in both St. Lawrence and Suffolk counties reported over nine hours per week of laptop use, on average, in the field. The range of

[1] The demonstration project included both laptop and tablet computers in some districts. Since this section deals with a mix of the two kinds of devices it is not possible consistently identify which results apply to one or the other device. Therefore we will use the term *laptop* to include tablet PC's.

variation in use across these three locations was substantial, from 19 hours per week in one district to less than two in two others. Some reasons for the difference may be due to the range of conditions across the districts as described in Chapter 2. The variability in connectivity and policies may have led to districts being able to use the technology in different locations.

A different pattern of variation can be seen in the reports on impact on work shown in Table 1 below. As with location of use, the survey of all participants at the end of the pilot period asked whether five types of work were better, worse, or about the same with their laptops. For all five kinds of work, the opinions ranged almost exclusively from "about the same" to "much better." The most positive impacts reported were in the areas of "access to information" and "timeliness of documentation," with over 50% of the respondents rating these results "somewhat better" or "much better." Ability to work in court improved for over 30% of the respondents, and communication with supervisors and client service was better for 20% and 28% respectively. Of the 226 participants who answered this question, there were only 22 instances of a reported worsening of ability to work with the laptops. The survey and interview comments included reports of technical difficulties with some devices and poor connectivity that may account for the negative reports on work impacts.

Table 1 - Reported Impacts on Work of Mobile Device Use – All Districts

Impacts on:	**Much worse**	**Somewhat worse**	**About the same**	**Somewhat better**	**Much better**
	(n)	**(n)**	**(n)**	**(n)**	**(n)**
Timeliness of documentation	2% (5)	2% (4)	40% (91)	40% (91)	15% (35)
Ability to do work in court	0% (1)	1% (2)	67% (141)	23% (49)	9% (18)
Ability to access case information	1% (2)	0% (1)	36% (80)	38% (86)	25% (55)
Communication with supervisors	0% (1)	0% (1)	78% (173)	14% (32)	6% (14)
Service to clients	1% (2)	1% (2)	70% (156)	21% (46)	7% (16)

Productivity

This assessment focused on productivity improvements in two main areas: timeliness of documentation and overall volume of documentation. For timeliness, we used three measures derived from data extracted from CONNECTIONS, NYS's central child welfare information system:

1. Timeliness of progress notes: These notes are to be entered in the system as soon as possible following the event or activity to be documented. Timeliness would therefore be reflected in how many days elapse between a particular event date and the date the progress note conveying that event was entered. We therefore examined the proportion of progress notes entered each day following the related event. This yielded a productivity improvement measure based on the proportion of notes entered closer to the event date.
2. Timeliness of safety assessments: These assessments are to be completed (i.e., approved by a supervisor) within seven days of the opening of an investigation. Our measure of

improvement in timeliness of safety assessments was therefore the number of assessments completed within seven days in the pre-pilot period compared to the pilot period.

3. Timeliness of case closing: The investigation of a case should be completed within 60 days from its opening. Our measure of improvement in timeliness of case closing was therefore the number of cases closed within 60 days during the pre-pilot period compared to the pilot period.

For volume of work, we used two measures:

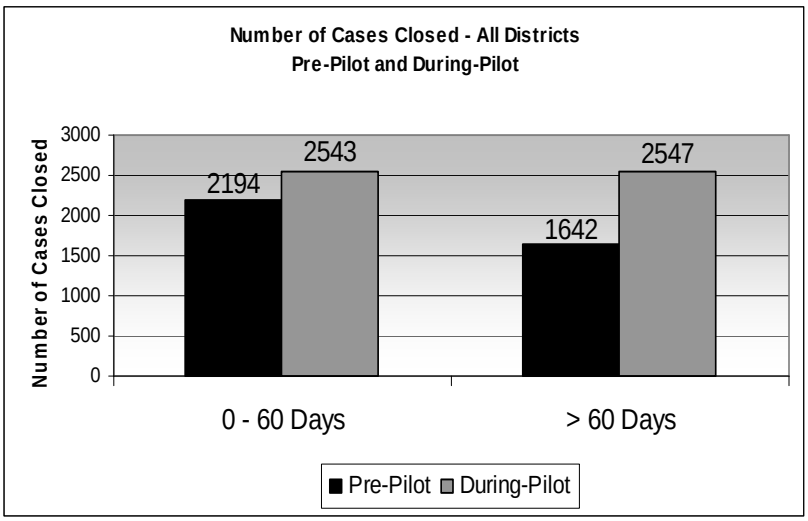
1. The number of progress notes per day entered in the system, prior to and during the pilot period. Using the number per day was necessary, rather than the total number of notes, since the pilot periods varied in length among the districts from over 70 days to a little over 20 days.
2. The number of cases closed overall, both within 60 days and later than 60 days.

In designing the assessment, we attempted to make the pre-pilot period as close a match as possible to the pilot period. This approach supports comparisons of productivity that reflect as much as possible the influence of using mobile technology. Therefore, the productivity data for the pre-pilot period was collected as much as possible for the same workers, doing the same kinds of work as in the pilot period, and for the same number of days for both periods. Since there was some turnover in the pilot participants in some districts, there is some variation in workers between the pre-pilot and pilot periods, but that variation is not large enough to affect the overall results.

Productivity could be affected by possible variation in the volume of open cases between the two data collection periods, which would be out of our control. Fortunately there was in fact very little change in overall intake or case volume from the pre-pilot to the pilot period, so the caseload over all 20 districts remained virtually unchanged (see Appendix E for changes in case load from pre-pilot to during pilot period). At the individual district level, however, there were some substantial changes from the pre-pilot to the pilot period. In two districts (Jefferson and St. Lawrence), there was a greater than 20% drop in open cases from the pre-pilot to the pilot period, and in two other districts (Rockland and Seneca) there was a greater than 10% increase in open cases during the pilot test period. For all districts, however, the total difference between the two periods was only 13 cases, out of a total of over 10,000 open in each period.

The results for timeliness and number of case closings seem to be somewhat paradoxical, appearing to show a substantial improvement in the volume of case closing, but a contradictory result vis-à-vis reduction in timeliness. These comparisons are shown together in Figure 2 below.

Figure 2 - Number of Cases Closed - All Districts, Pre-Pilot and During Pilot

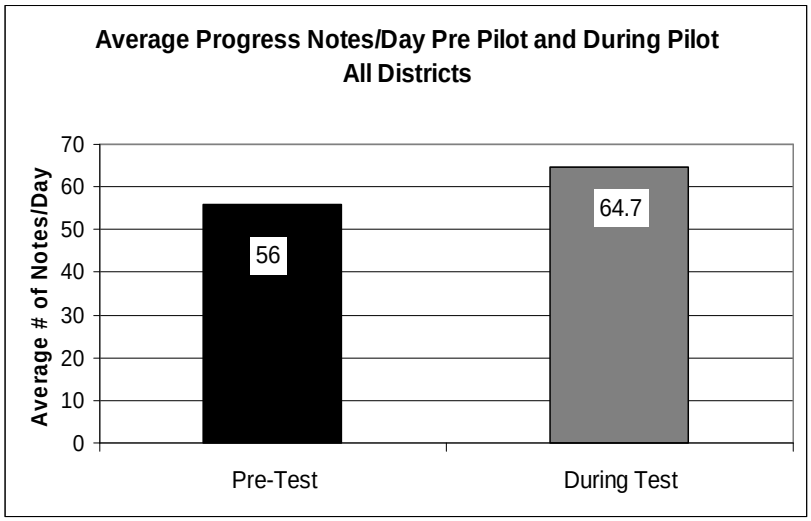


The number of cases closed within the 60 day period increased from 2,194 in the pre-pilot period to 2,543 in the pilot period: an improvement in timeliness. However the number of cases closed in longer than 60 days increased as well, suggesting decreased timeliness. This apparent contradiction can be accounted for by the increase in the overall number of cases closed from the pre-pilot period to the pilot period, from 3,836 to 5,090—a 32% increase. Since the overall number of open cases was the same in both time periods, the increase in closing of 60 or more day cases appears to reflect efforts to clean up a backlog of older ones. Since this happened with a simultaneous improvement in timeliness with the less than 60 day cases closed, these results can be interpreted to indicate improvements in both volume and timeliness of work for the pilot period.

The reason for the apparent backlog reduction is not obvious. We asked each of the districts at the beginning of the project to describe changes in policy or practices that accompanied the deployment of the laptops; none reported official instructions to “clean up” any case backlogs. Thus it is not clear if these results are a consequence of administrative direction or a more informal response to the availability of the laptops. This question deserves further attention.

The results for productivity in the number of progress notes are much more clear cut. There was a substantial increase in the overall number of progress notes per day for each tester during the pilot period. The increase, shown in Figure 3 below, is from an average during the pre-pilot period of approximately 56 progress notes per day, up to over 64 per day during the pilot.

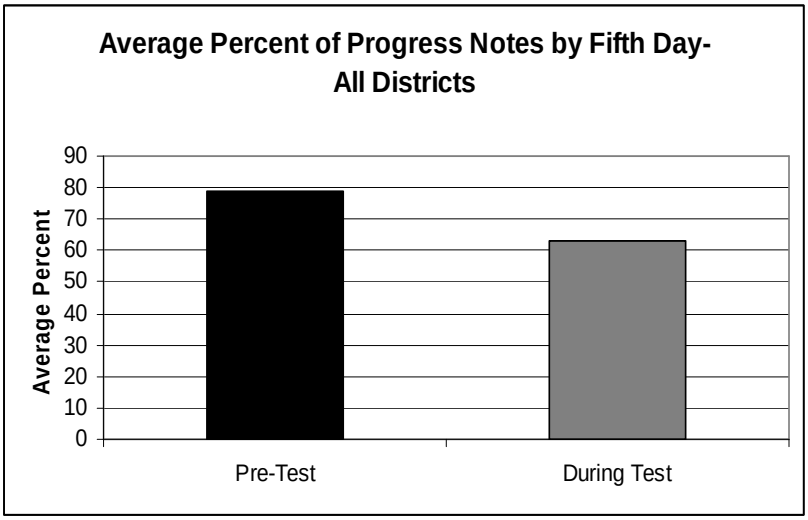
Figure 3 - Average Progress Notes/Day Pre Pilot and During Pilot - All Districts



This increase in rate of progress note entry indicates some efficiency gains during the test period. The increase is not related to the number of cases available for work, which was unchanged. Nor does the relatively large increase in progress note output appear to be related directly to an increase in work time. Respondents reported a slightly lower level of overtime during the pilot test period. The gain may be related to increased work done at home not compensated as overtime, but we have no data to test that possibility. The progress note increase is similar in direction to the overall increase in case closings. It seems likely, therefore that the progress note increase is linked to the increase in case closings, and both represent increases in productivity.

This increase in productivity was accompanied by what initially appeared to be lower performance in the timeliness of progress notes. In all the districts, the average elapsed time between an event and progress note entry increased, thus decreasing timeliness. One example of the timeliness results is shown in below. This pattern was consistent across all districts for the 1st through 7th days, so the analysis of progress note timeliness would then show results similar to those in Figure 4.

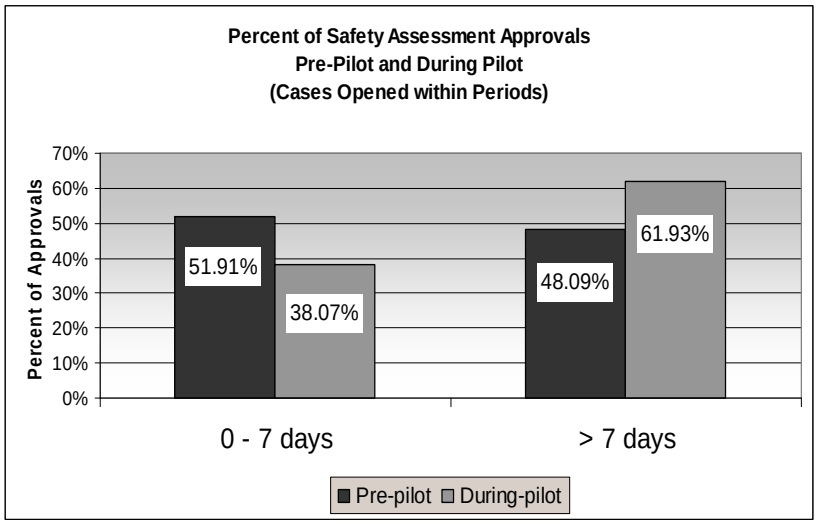
Figure 4 - Average Percent of Progress Notes/Day Pre and During Test - All Districts



Rather than a simple decrease in overall performance, however, this finding is most likely a direct result of the work on a backlog of closing older cases discussed in relation to Figure 2 above. If there is a backlog of older cases, it seems likely that there is also a backlog of progress note entry for those cases. If the workers are attempting to reduce that backlog by entering progress notes for events farther in the past, then the average delay for progress notes would increase as the "catching-up process" unfolds.

Improving the timeliness of safety assessments is another place where mobile technology may support improved performance. Therefore, the assessment includes examination of the timeliness of safety assessments during the pre-pilot period and the pilot test period. A safety assessment is considered timely if completed (i.e., approved by a supervisor) within seven days of the opening of the case. The analysis below compares the percentage of safety assessment completed within and beyond seven days for the pre-pilot and pilot period (Figure 5, below).

Figure 5 – Percent of Safety Assessment Approvals Pre and During Test - All Districts



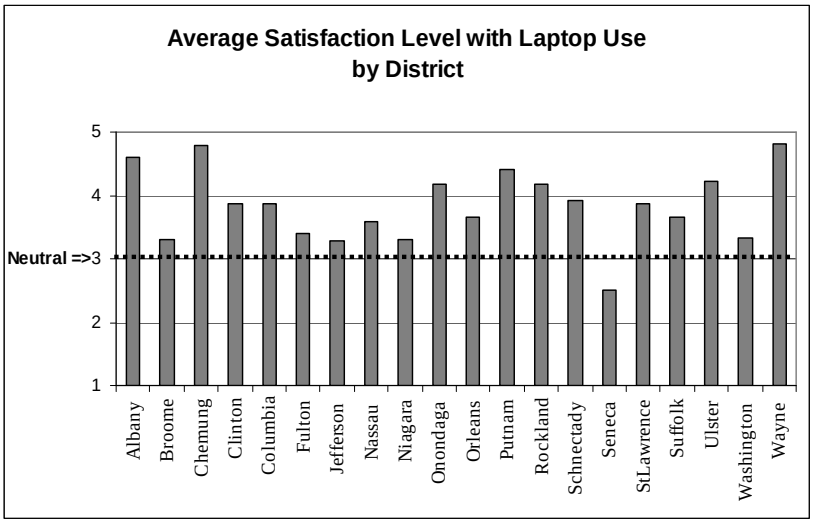
These results show a substantial overall decline in the timeliness of safety assessments. In the pre-pilot period, approximately 52% of the safety assessments were completed within the first seven days. That dropped to 38% during the pilot test period. The proportion of safety assessments approved in more than seven days increased correspondingly for the pilot period to over 60%. To see if this result was influenced by the choice of indicator, we examined different ways of counting safety assessment completions, both within and past the seven-day period. These included the results presented in Figure 5 above, which count only safety assessments on cases opened during each period. For other analyses, we also included cases opened prior to the period, provided the safety assessment was approved during the period. The results were similar.

These safety assessment results for timeliness are inconsistent with the productivity improvements for other measures, but do resemble the results for progress note timeliness. This suggests that the same "catching up" effect may be at work. That is, if during the test period the workers were concentrating on clearing up older cases, the timeliness of safety assessment may have been affected. It is also possible that adjusting to the new technology configurations slowed the normal work pace. As with the progress note findings, we do not have sufficiently detailed data about work practices to resolve this issue.

Satisfaction

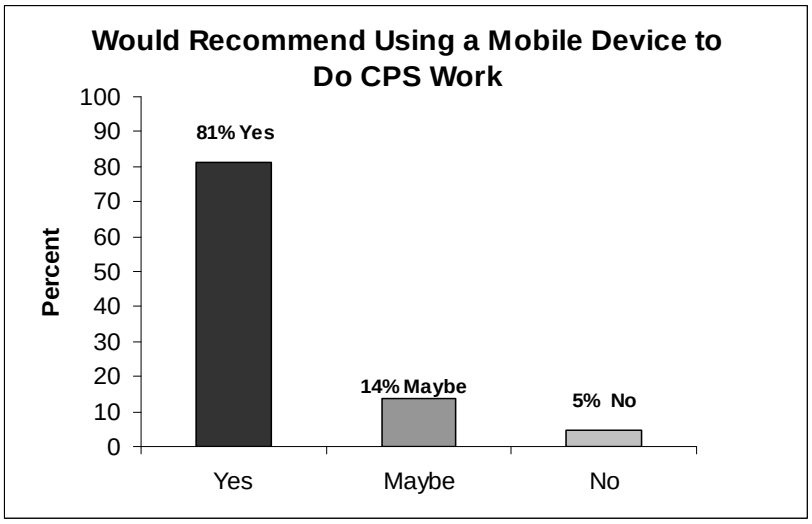
At the end of the pilot period, participants were surveyed and asked to rate their overall satisfaction with laptop use. The rating used a five-point scale from 5= "Very satisfied," to 3= "Neither Satisfied nor Dissatisfied," to 1="Very dissatisfied." The average satisfaction rating for each district is shown in Figure 6 below.

Figure 6 - Average Satisfaction Level with Laptop Use - by District



With the exception of Seneca County, all the satisfaction ratings averaged in the positive side of the range, with Albany, Chemung, and Wayne counties reporting very high overall satisfaction levels. The low satisfaction ratings for the Seneca County respondents is not reflected in their other survey results or comments, but may be related to a large workload increase. That district experienced the largest increase in caseload between the pre-pilot and pilot periods, up from 34 to 102 cases closed, and an over 70% increase in the rate of progress note entry. The satisfaction ratings for the other districts do not appear to be similarly related to changes in workload or productivity.

Figure 7 – Percent of Caseworkers that Would Recommend a Laptop to Do CPS Work



In the post-pilot survey participants were also asked if they would recommend using a mobile device (to do CPS work functions) to a colleague. Overall, in all the districts , 81% of the respondents stated “Yes” that they would recommend to their colleague using a mobile device to do CPS work, while 14% said maybe, and 5% said no, they would not.

Relationship of Productivity Gains to Pilot Test Conditions

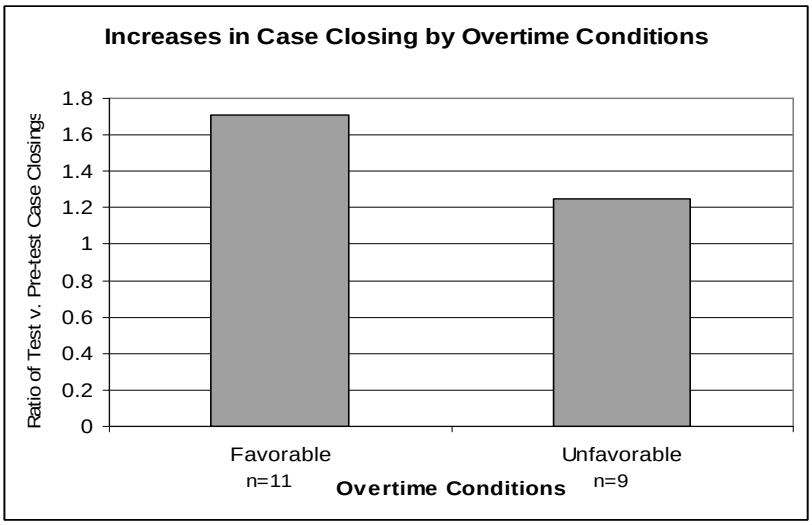
While there were overall productivity gains for the pilot test period, these gains were not consistent across all 20 districts. That lack of consistency prompted us to examine whether or not variations in the test conditions could account for different productivity gains. Because of the small number of districts and the many variations in test conditions, it was not possible to statistically isolate or measure the independent influence of any particular factor. However it is possible with this number of districts to explore whether there are groupings or clusters of districts that correspond to differences in one factor or another. Therefore we used a statistical clustering technique (K-Means analysis) to see if productivity results appeared to be related to two kinds of test conditions: the availability of overtime compensation for the workers outside normal hours, and the favorability of technology conditions (connectivity, access to laptops). That is, the analysis tests to see if districts could be grouped such that high or low measures of productivity were connected with favorable or unfavorable test conditions.

To perform the analysis, each district was rated as favorable or unfavorable for overtime conditions and technology conditions (see Appendix F for a description of coding for overtime and technology conditions). The K-Means analysis then forms clusters of districts to maximize the differences of the averages (means) across the clusters putting the districts that had higher average productivity gains with one test condition (favorable or unfavorable), and lower gains with the other. If districts with favorable conditions cluster with appreciably higher productivity gains that is evidence of a relationship.

The results below come from separate analyses of increases in case closing and progress note entry clustered separately with overtime and technology conditions. Of the four possible results, three showed a substantial relationship between test conditions and productivity gains in the expected direction, and one less so. Those results are shown in Figure 7 through Figure 10 below. It is important to bear in mind that these results are based on examining only one possible influence on productivity. Therefore, the results do not establish that improving overtime or technology conditions will cause improved productivity, but only that a relationship may exist that deserves further attention.

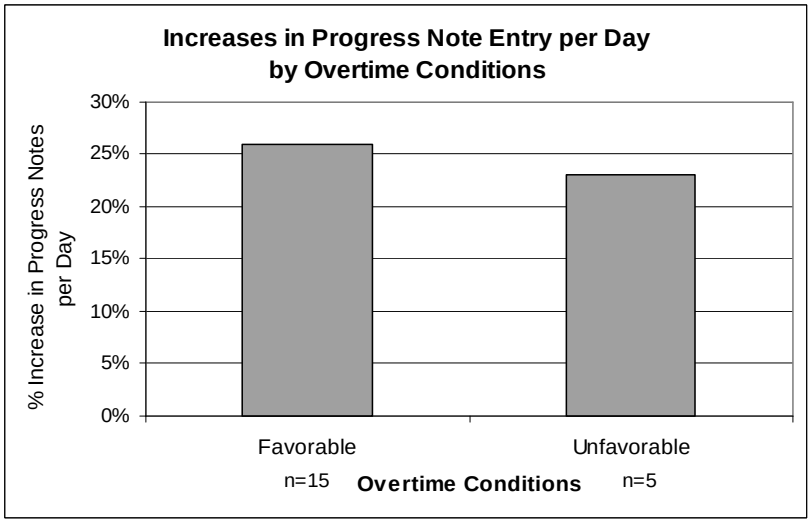
The analysis results in Figure 7 below show evidence of a relationship between higher case closings performance and more favorable overtime conditions. Case closings in districts clustered with favorable overtime conditions were approximately 25% greater than those in the less favorable overtime conditions. The districts are divided almost equally between the clusters as well, suggesting that the possible relationship is more general across the districts.

Figure 7 - Increases in Case Closing by Overtime Conditions



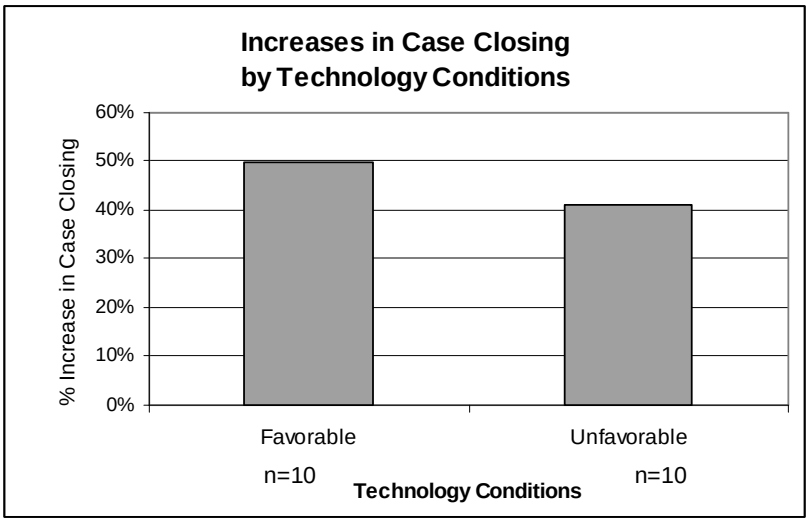
The evidence of a relationship between overtime conditions and progress note improvement does not appear as strong as for case closings. The analysis seen in Figure 8 below shows only a modest 3% advantage of the favorable overtime cluster versus the unfavorable. Also the distribution of districts between the clusters is quite uneven, suggesting that the possible relationship in this instance is less generally important.

Figure 8 - Increases in Progress Note Entry by Overtime Conditions



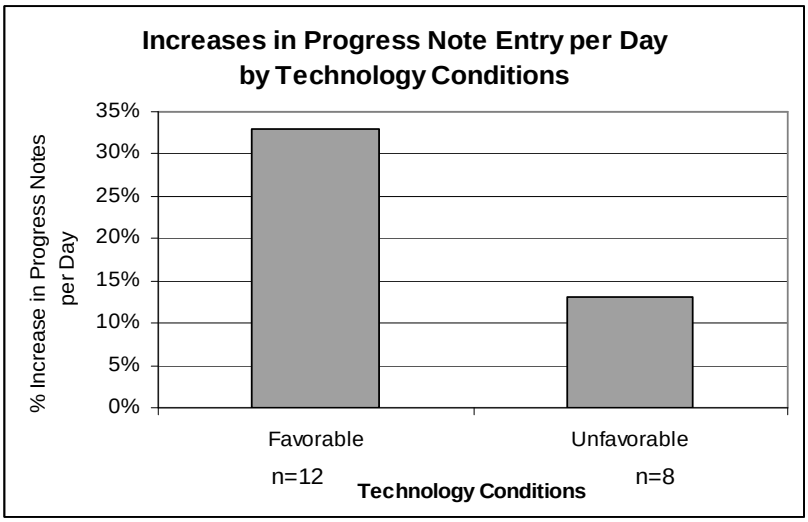
Differences in technology conditions appear to be more strongly related to productivity results than the overtime analyses above. For the increases in case closings shown in Figure 9 below, the favorable technology cluster performed about 10% better than the unfavorable one. For this comparison, the districts were evenly divided between the clusters, indicating a rather consistent pattern across the districts.

Figure 9 - Increases in Case Closing by Technology Conditions



A similar but even larger difference is shown in the analysis of progress note entry in relationship to technology conditions. The results in Figure 10 below show a 20% gap in performance between the favorable and unfavorable technology clusters. Though the distribution of districts between the clusters is not quite even, the size of the difference is strong evidence of a connection between the technology conditions and progress note entry.

Figure 10 - Increases in Progress Note Entry per Day by Technology Conditions



Taken together, the results over all analyses present a predominately positive picture of productivity gains during the pilot period. In terms of the overall volume of work, comparisons between the pre-pilot and pilot test periods show substantial increases. Timeliness of case closing improved, even with an increase in the overall number of cases closed over the two periods. Only the timeliness indicators for progress notes and safety assessments show decreases for the pilot test period. The progress note decrease appears to be accounted for by work on closing a higher proportion of older cases during the pilot period, not by an actual slowdown in the documentation process.

With any new technology implementation we would expect significant interactions with the normal work processes. That seems to be the most likely mechanism at work here. In the absence of a measurement effect, our best interpretation of this timeliness impact is essentially the same as for progress notes, i.e., work on a backlog of cases needing both progress notes and safety assessments. That kind of work pattern would shift the overall proportion of timely and late safety assessments for the pilot test period. This issue may be resolved with examination of more work process data than was available for this assessment.

Recommendations

As New York State continues to meet the needs of its CPS workforce, it is apparent that mobile devices are a necessity. Introducing these devices is inevitably a change in the way work is completed and throughout the *Demonstration Project* continuous feedback was essential. These recommendations follow input already given during the deployment process and are in addition to those made in previous deployment initiatives.

Discuss Working from Home Policy at State Level

Three things are learned about working from home: 1) caseworkers are using the mobile device to do work from home 2) it has an impact on their productivity, and 3) districts are not consistently developing policies to address it. With this said, leading discussions at the state level and engaging districts in coordinated thinking about these policies may help in moving all organizations closer to a comprehensive approach to caseworker mobility. Its not a matter of “if “ this will be an issue, it is now a matter of when.

Invest in a More Robust Statewide Deployment Approach

Deploying technology to an entire state requires a cadre of resources. This includes staff to negotiate, receive, image, deliver, train, and support the devices to a large geographic region. It also includes resources to develop fundamental informational pieces about things such as hardware and software, connectivity options, security procedures, and training and support. Whereas, child protective services in NYS is a state supervised and locally administered program, early and continuous coordination with districts is essential for a comprehensive and smooth deployment.

Further Investigate a Potential Connection Between Replacing Desktop PCs and Mobility and Productivity

Some of the interview comments and anecdotal information from this assessment hinted at a possible connection between productivity and replacement of desktop PCs. If a caseworker is given a mobile device as a complimentary piece of equipment as opposed to the primary device to do their job, do they use if differently? Do they bring it with them more or less often? Do they modify work patterns in one scenario more than another? Or is the initial technology adjustment period simply compounded with the deletion of desktops PCs and affect initial work habits? These questions, and others, are worth investigating. .

Perform Additional Assessments After Initial Period of Adjustment

Introduction of new technology into an established field of work takes an initial period of adjustment. Not only is the technology new, but it has unforeseen impacts on work practices and policies. In each of the three CPS mobile technology initiatives much was learned to inform subsequent phases. For the future, we recommend that more can be learned from those caseworkers who have used the device for over six months. After they have worked through their initial period of adjustment, their mobility and use, productivity, and satisfaction can be better assessed. In addition, it is important to assess how they have incorporated the technology into their work after they come through the normal learning curve. Focusing on this stage will yield different and possibly more meaningful results about long-term change.

APPENDIX A: Device Specifications

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

Laptop

Dell 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.

Encryption

PointSec encryption software was installed on each device before deployment

APPENDIX B: District Technology, Connectivity, and Participation During Pilot Period

Districts Participating in Assessment Study	Device		Number of Docking Stations	Broadband Wireless Cards	CPS Caseworkers in Study	CPS Supervisors in Study	CPS Manager or IT in Study
	Laptops	Tablets					
Albany County Department for Children, Youth, and Families	39	2	37	0	40	0	0
Broome County Department of Social Services	10	0	0	10	20	3	1
Chemung County Department of Social Services	13	2	10	5	23	1	0
Clinton County Department of Social Services	18	0	18	0	15	2	0
Columbia County Department of Social Services	11	0	11	11	11	0	0
Fulton County Department of Social Services	12	0	8	3	22	1	0
Jefferson County Department of Social Services	20	0	20	19	18	2	0
Nassau County Department of Social Services	52	3	52	0	53	0	1
Niagara County Department of Social Services	35	4	35	0	28	4	1
Onondaga County Department of Social Services	56	0	10	56	69	1	0

District	Device		Number of Docking Stations	Broadband Wireless Cards	CPS Caseworkers in Study	CPS Supervisors in Study	CPS Manager or IT in Study
	Laptops	Tablets					
Orleans County Department of Social Services	0	6	0	0	7	0	0
Putnam County Department of Social Services and Mental Health	9	0	9	9	8	1	0
Rockland County Department of Social Services	0	25	0	25	19	3	3
Schenectady County Department of Social Services	20	0	20	20	19	8	1
Seneca County Children and Family Services	0	8	0	8	7	0	0
St. Lawrence County Department of Social Services	16	0	16	0	16	0	0
Suffolk County Department of Social Services	30	0	30	30	25	0	0
Ulster County Department of Social Services	31	0	31	30	22	1	0
Washington County Department of Social Services	12	0	12	0 (During Pilot)	12	0	0
Wayne County Department of Social Services	16	0	16	16	14	0	2
Westchester County Department of Social Services	25	5	Did not deploy				
Erie County Department of Social Services	0	49	Did not deploy				
NYC Administration for Children Services	0	0	Telephonic Dictation -Did not deploy				

APPENDIX C – Data Collection Methodology, Tools, Counts and Response Rates

There were four streams of data collection throughout the project: 1) two online surveys (base and post); 2) data from CONNECTIONS (central child welfare information system); 3) district teleconferences; and 4) district questionnaires.

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).

Districts were asked to provide the names, email addresses, and titles of participating CPS caseworkers and supervisors. Data reported in the survey represents responses from the caseworkers only. 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 were collected from three new thematic categories: the impact of laptops on caseworkers' daily activities, mobility-related issues, and technical difficulties experienced during the pilot period. Data quality checks were performed and the data were recoded as needed.

Overall, there were 448 CPS caseworkers that participated in this study. Supervisors also participated in the study but their survey responses were not included in the results. This was done because the number of supervisors participating in the pilot were not representative across districts and the total number of supervisors responding represented a number too low to report.

The response rate for the baseline survey was 74% (n = 331), while the response rate for the post-pilot survey was 61% (n = 275). The total number of caseworkers that took both surveys was 234, resulting in a response rate of 52%. The table below shows the number of caseworkers and the response rates for each of the participating districts.

Table 2 – Response Rates by Districts

District	Total Number of Participants	Baseline Survey		Post-Pilot Survey		Both Surveys	
		# of Respondents	Response Rate	# of Respondents	Response Rate	# of Respondents	Response Rate
Albany	40	27	68%	22	55%	18	45%
Broome	20	13	65%	8	40%	6	30%
Chemung	23	23	100%	14	61%	14	61%
Clinton	15	15	100%	15	100%	15	100%
Columbia	11	10	91%	9	82%	8	73%
Fulton	22	17	77%	11	50%	9	41%
Jefferson	18	16	89%	13	72%	12	67%
Nassau	53	31	58%	24	45%	19	36%
Niagara	28	13	46%	13	46%	9	32%
Onondaga	69	48	70%	41	59%	32	46%
Orleans	7	5	71%	4	57%	4	57%
Putnam	8	6	75%	4	50%	3	38%
Rockland	19	14	74%	15	79%	11	58%
Schenectady	19	18	95%	15	79%	15	79%
Seneca	7	6	86%	4	57%	4	57%
St. Lawrence	16	12	75%	9	56%	7	44%
Suffolk	25	23	92%	21	84%	21	84%
Ulster	22	12	55%	14	64%	10	45%
Washington	12	9	75%	6	50%	5	42%
Wayne	14	13	93%	13	93%	12	86%

Teleconferences

During the week of December 10-14, 2007, CTG held separate teleconferences with project participants in ten Local Social Service Districts participating in the *Demonstration Project* 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	12/1107	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 were pulled by the date a progress note was entered by participants during two timeframes—the pre- and during-pilot periods. These timeframes were equal in duration. A total of 132,045 progress note entries and 14,308 unique investigation stages made up the dataset from 448 CPS caseworkers. The table below shows the start and end times for both timeframes, the duration of each timeframe, the total number of progress notes entries, and the total number of unique cases per participating district.

Table 4 – Overall CONNECTIONS Data Information per District

District	Pre-Pilot Period		Pilot Period		# of Days with Mobile Technology (Pilot Length)	# of Progress Notes Entries	# of Unique Cases
	Start	End	Start	End			
Albany	09/10/07	11/09/07	11/10/07	01/09/08	60	11,238	1,047
Broome	09/15/07	11/09/07	11/15/07	01/09/08	55	6,982	786
Chemung	09/20/07	11/14/07	11/15/07	01/09/08	55	7,643	600
Clinton	09/04/07	11/06/07	11/07/07	01/09/08	63	7,173	567
Columbia	08/11/07	10/25/07	10/26/07	01/09/08	75	6,830	461
Fulton	10/14/07	11/26/07	11/27/07	01/09/08	43	2,393	377
Jefferson	08/25/07	11/01/07	11/02/07	01/09/08	68	1,465	548
Nassau	09/22/07	11/15/07	11/16/07	01/09/08	54	14,100	2,313
Niagara	11/23/07	12/16/07	12/17/07	01/09/08	23	2,566	495
Onondaga	09/28/07	11/18/07	11/19/07	01/09/08	51	20,453	1,467
Orleans	10/06/07	11/22/07	11/23/07	01/09/08	47	2,718	236
Putnam	08/03/07	10/21/07	10/22/07	01/09/08	79	3,155	239
Rockland	11/01/07	12/05/07	12/06/07	01/09/08	34	4,039	378
Schenectady	08/11/07	10/25/07	10/26/07	01/09/08	75	7,371	1,033
Seneca	10/12/07	11/25/07	11/26/07	01/09/08	44	2,707	202
St. Lawrence	09/10/07	11/09/07	11/10/07	01/09/08	60	7,152	440
Suffolk	08/19/07	10/29/07	10/30/07	01/09/08	71	8,025	1,378
Ulster	09/28/07	11/18/07	11/19/07	01/09/08	51	7,252	880
Washington	09/20/07	11/14/07	11/15/07	01/09/08	55	4,582	463
Wayne	10/20/07	11/29/07	11/30/07	01/09/08	40	4,201	398

District Questionnaire

Each district was asked to complete a questionnaire about their district. All of the participating districts completed and submitted the questionnaire. The focus of the questionnaire was to learn about each district's goals, connectivity solutions, participant selection, technology deployment, changes in policies or work practices, and general information. The following are sample questions from the questionnaire:

- What were your district's objectives for participating in this pilot: What do you hope to achieve by deploying mobile technology?
- What connectivity solutions did you choose and with what provider?
- Were all devices deployed? If not, how many were not deployed and why?
- Did all participants receive their own device, or are devices shared among several participants? If shared, please describe how the devices were shared among the participants.
- How were CPS workers selected to participate in the pilot?
- Please describe the deployment training process and how each participant received the devices.
- Please describe the security procedures that were addressed during the training?
- What policies, if any, were modified during the pilot period, such as overtime and field visit scheduling? Describe the new policies and how they differ from the previous policies.
- What work practices, if any, were created, changed or abolished during the pilot period?
- What is the geographical area, population, and urban/rural makeup of your district?
- What is the total number of CPS workers in your district (not just those participating in the mobile technology project)?

Appendix D: Summary of District Teleconferences

Assessing Mobile Technologies in Child Protective Services
A Demonstration Project

Summary of Information Gathered in the District Teleconferences

INTRODUCTION

During the week of December 10-14, 2007, CTG held separate teleconferences with project participants in ten Local Social Service Districts participating in the *Demonstration Project* to learn more about how they were using the laptops and tablets deployed for CPS work (see Appendix C for district information). All districts participating in the teleconferences are part of the NYS OCFS *Mobile Technology Demonstration Project* and were chosen by CTG and NYS OCFS liaisons. Criteria for choosing the districts included:

- How long they had the technologies in use (those with more time with the devices were given higher priority)
- A selection of 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.

CATEGORIES OF INFORMATION

Deployment

The majority of the interviewed districts had deployed the mobile technologies by the second week in November, giving participants approximately one month of use prior to the interviews. Ulster County was the first to deploy their 30 laptops on October 17th, while Washington County was the last to deploy their 12 laptops on November 28th. Putnam County tried to acquire an additional three laptops for their remaining staff, but where unable to do so. Virtually all districts commented on the fact that setting up the laptops and tablet PCs took longer than they had originally anticipated. Delays resulted from the need for local IT administrators to install all necessary applications and test the wireless connections (if applicable) prior to deploying the devices to end-users. Distribution introduced additional delays. It was necessary for Niagara County to ship 35 laptops from the Niagara Falls office to their Lockport office after setup was complete.

Every interviewed district mentioned that each laptop was assigned to one user, rather than rotated among caseworkers and/or supervisors. Most of the CPS caseworkers and supervisors received a laptop. In the majority of the districts, caseworkers and supervisors that received a laptop also received a docking station, monitor, mouse, and keyboard to replace their existing desktop PCs.

Connectivity

Wireless connectivity arrangements varied considerably as shown in the table below. These connectivity solutions are as of their interview in December.

District	Connectivity Device	Wireless Access Provision
Albany	No external broadband cards	No cards will be given, only use of public spots (hot spots)
Chemung	External broadband cards	No information obtained in the teleconference
Clinton	No external broadband cards	Waiting for Verizon to establish contract
Nassau	No external broadband cards (yet)	Did not receive cards, only use free public spots
Niagara	No external broadband cards	No cards; maybe in 2008 budget
Onondaga	56 external broadband cards	Verizon cards given out
Orleans	No external broadband cards	Use of free public spots (hot spots)
Putnam	9 external broadband cards	Verizon cards given out
Ulster	30 external broadband cards	Given out as devices rolled out
Washington	External broadband cards ordered (not in yet)	Use of free public spots (hot spots)

Users that were able to connect to the Internet, e-mail, CONNECTIONS and network drives, did so via one or more of the following four methods:

- Third-party telecommunications vendors (e.g. Verizon and Sprint).
- Scattered hot spots (e.g. county hot spots, free and public Wi-Fi zones such as the ones in cafés or other public spaces).
- Private ISP accounts from home.
- Through wired and wireless networks provided in the courthouses.

While some districts provided users with wireless connectivity through third-party telecommunications vendors, others were either testing its feasibility or awaiting the arrival of wireless cards. The costs associated with commercial wireless access providers was the main reason some districts decided not to provide users with wireless connectivity in the field. In addition, procurement of external broadband cards was problematic in one district. The top four problems associated with the wireless connections, as reported by the interviewees were:

1. Slow connections.
2. Freeze-ups while connected to the central data base (CONNECTIONS).
3. Uneven availability of the wireless network access in the field.
4. Lack of or poorly communicated understanding of how to connect through the VPN client.

Use by Location

Caseworkers identified four main locations where the mobile technologies were used – field, court, home, and office. The following statements are summaries of what was heard about each location.

Home: interviewees reported the highest use of mobile technology from their homes. This high use was attributed to:

- The ability for caseworkers to focus on their work due to the lack of distractions compared to other locations.
- The ability to immediately respond to cases and communicate with supervisors, as opposed to waiting until the next business day.

- Personal preferences such as the ability to smoke while working, taking care of the family, work in the comfort of one's own home…etc.

Field: The most common location used by the caseworkers were schools, cafés and food courts. The main reason given by interviewees for not taking the mobile technology into the field was because they did not have roaming wireless connectivity, but for those that were able to use it in the field, these locations were used most.

Virtually all caseworkers mentioned that they were unwilling to bring the mobile technology into clients' homes. They said using the device in a home would be distracting, could appear to be disrespectful, or interfere with establishing rapport. The majority of caseworkers said that carrying the mobile technology with them while in the field was contingent on:

- The amount of time waiting in court, hospitals, etc….
- The number of visits with professionals such as doctors and nurses in hospitals, and teachers in schools.

Court: Some interviewees reported that they do take the mobile technology with them when they need to appear in court. Those that do take them to court use the laptops and Tablet PCs in dedicated rooms. Privacy did not seem to be an issue, as caseworkers adapted to the environment (sitting with their back towards the wall, using private rooms…etc.). The main reasons users did not take their mobile technology to court were:

- Courthouses are overcrowded, noisy full of distractions.
- Lack of wireless connectivity.
- High risks of loss or damage of the mobile technology.

Office: Due to the removal of desktop PCs, caseworkers had to use the laptops in the office, but many were given screens and keyboards for use in the office.

Functions and Uses

The majority of the interviewees stated that the main use of the mobile technology was related to the interaction with CONNECTIONS. Caseworkers and Supervisors used the mobile technologies to:

- Enter notes into CONNECTIONS
- Read new cases
- Look up case history and all connected cases, giving them extra background information central to the case (especially when on-call)

Some caseworkers reported that the mobile technology facilitated better communication with their supervisors. Also, having the mobile technology allowed them to enter information as soon as possible as opposed to waiting until the next business day. Some of the other tasks performed using the mobile technology included:

- The use of a word processor (e.g. Microsoft Word) to document cases
- Accessing the WMS Child Support system
- Searching sex offender registries
- Accessing incarcerated lists

- The use of online Web mapping services for direction lookup

Overall Issues and Concerns

Interviewees' responses to major issues and/or concerns fall into the following categories:

- *Connectivity:* issues specifically related to the lack of connectivity previously mentioned.
- *Technical difficulties:* issues related to connecting to CONNECTIONS and network drives, and difficulties associated with password changes were mentioned.
- *Learning curve:* virtually all interviewees commented on the fact that having a laptop or tablet PC requires a bit of time to get used to.
- *Training:* a majority of the interviewed districts complained that they did not receive official training on how to use the laptop or tablet PC, connect using various methods, access files, and unlock the devices. The lack of technical support in the form of help desks was also raised.

Policy Implications

During the district interviews, participants were asked about four policy areas that could affect laptop use overtime pay, working from home, scheduling, and use of the laptops in home or other client situations. Comments about those policy areas are summarized below.

Overtime and Flextime Policies

- Virtually all districts reported that there hasn't been a change in the overtime/flextime payment policies but some said they were looking into it. Some districts also stated that their policies were very ambiguous.
- Caseworkers were encouraged to apply for flextime or other compensation, rather than overtime pay.
- A few districts grant overtime pay to caseworkers as long as it is pre-approved. There is no limit on the amount of overtime pay, as long as it is not abused. They believe the policy will remain unchanged.

Scheduling Field Visits and Reporting to the Office

- One district requires caseworkers to report to the office in the morning prior to attending their scheduled appointments. This policy continued even with laptop use.
- One district does not allow employees in the office during non-working hours.
- One district has a policy regarding "protected days" (to catch-up on progress notes…etc.), while another county has a policy setting the amount of time caseworkers spend in the field per week.

Use in Homes or Other Client Locations

- Two districts mentioned that their supervisors have set policies not allowing caseworkers to take mobile technologies into the clients' homes, and require them to use paper and pens to document their notes.

Working from Home

- Policies in about half of the interviewed districts prohibit caseworkers from working from home during business hours. In one district, caseworkers are not allowed to work

from home except when on-call. Another district is thinking of experimenting with using the laptops from home once a week.

- Caseworkers from one district reported that pay for overtime work at home was not allowed. Despite not receiving compensation, however, caseworkers choose to do so to reduce stress levels and catch-up on their tasks. Another district allows caseworkers to submit overtime for work at home on the laptop as flex-time and repeated that this has been working really well.

Benefits from Laptop Use

Interviewed caseworkers and supervisors identified four major benefits of using mobile technology:

- The ability to access information while in the field at anytime, provided that wireless connectivity is available.
- Improved communications between caseworkers and supervisors; especially on weekends, holidays, and while on-call.
- The ability to access information from home regardless of when a call is received.
- Increased flexibility of caseworkers' and supervisors' schedules. A majority of the interviewees stated that they are able to manage their time more effectively, especially when they have multiple appointments. The also appreciate the flexibility of working from home.
- A reduction in caseworkers' and supervisors' overall stress. The ability to enter notes on time, in the field, and at times that are convenient reduces overall stress levels.

APPENDIX E: Changes in Case Load From Pre-Pilot to During Pilot Periods by District

District	Pre-Pilot Cases Open	During Pilot Cases Open	Per Cent Change
Albany	800	821	2.6%
Broome	595	607	2.0%
Chemung	471	466	-1.1%
Clinton	399	426	6.8%
Columbia	321	350	9.0%
Fulton	270	273	1.1%
Jefferson	415	322	-22.4%
Nassau	1644	1568	-4.6%
Niagara	417	446	7.0%
Onondaga	1048	1118	6.7%
Orleans	177	163	-7.9%
Putnam	173	162	-6.4%
Rockland	270	300	11.1%
Schenectady	764	812	6.3%
Seneca	147	168	14.3%
St. Lawrence	369	288	-22.0%
Suffolk	947	922	-2.6%
Ulster	645	651	0.9%
Washington	316	328	3.8%
Wayne	297	281	-5.4%

APPENDIX F: Description of Coding for Overtime and Technology Conditions

The districts were rated on overtime and technology conditions by three members of the research team using a three point scale. The raters were the team members who had the greatest familiarity with the full range of data: survey results, interviews, focus groups, and central database extracts. Each rater examined the data on overtime and technology from the district's official statement plus comments by survey respondents and interviewees. They then rated each district using 1=low favorability, 2=moderate favorability, and 3= high favorability.

The criteria for overtime rating were clearest for the high or low rating, with 3 for districts that allowed overtime compensation for at least some extra work, and 1 for districts that prohibited overtime work or clearly refused compensation. Districts that were unclear or had a mixture of reports with respect to these criteria were rated 2.

The criteria for technology conditions were similar. A high rating of 3 was given to districts with wireless connectivity and laptops for all testers. A low rating of 1 was assigned to districts that did not provide wireless connectivity or that did not provide exclusive use of laptops for testers. The 2 rating was given to the districts with a mixture of or uncertain technology arrangements.

The three testers rated the districts independently and then discussed the results to resolve differences.

Appendix G : 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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DISTRICT PROFILES

- Albany County Department for Children, Youth and Families Programs & Services Children and Family Services
- Broome County Department of Social Services
- Chemung County Department of Social Services
- Clinton County Department of Social Services
- Columbia County Department of Social Services
- Fulton County Department of Social Services
- Jefferson County Department of Social Services
- Nassau County Department of Social Services
- Niagara County Department of Social Services
- Onondaga County Department of Social Services
- Orleans County Department of Social Services
- Putnam County Department of Social Services & Mental Health
- Rockland County Department of Social Services
- Schenectady County Department of Social Services, Children and Family Services
- Seneca County Children and Family Services
- St. Lawrence County Department of Social Services, Protective Services
- Suffolk County Department of Social Services, Child Protective Services Bureau
- Ulster County Department of Social Services, Children and Family Services
- Washington County Department of Social Services, Child Protective Services Unit
- Wayne County Department of Social Services

Center for Technology in Government

Assessing Mobile Technologies in Child Protective Services

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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 were 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 Albany County Department for Children, Youth, and Families (DCYF). Findings are based on data collected through online surveys, teleconferences, district questionnaires, and analysis of CONNECTIONS data (see Appendix C of the *Demonstration Project's Summary Report* for data collection tools and timeline). The field test lasted 60 days from 11/10/07-1/9/08.

District Deployment

Albany County DCYF has approximately 125 CPS staff responsible for child protective services. Albany County is a split urban and rural community, which includes NYS's capital. The Albany County DCYF participated in the demonstration project to learn if mobile technologies can increase CPS caseworker performance and the opportunities available to complete documentation while out of the office.

The Albany County DCYF deployed 39 Dell Latitude D620 laptops and two HP Compaq tc4400 Tablets to 40 CPS caseworkers on 11/10/07 (see Appendix A of *the Demonstration Project's Summary Report* for device specifications). Caseworkers were selected on a first come, first served basis to participate in the field test. All caseworkers received their own device and of that group, 37 received docking stations with keyboards and monitors.

No external broadband cards were provided or procured for any of the devices during the pilot period. 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.

Finally, no policies were changed to support the introduction of mobile technologies before or during the pilot period. In both periods, caseworkers were allowed, with prior approval, overtime pay for work done at home after regular work hours.

Characteristics of Respondents

A total of 40 CPS caseworkers participated in this study: 27 took the baseline survey (response rate 68%); 22 took the post-pilot survey (response rate 55%), and 18 took both the baseline and post-pilot surveys (response rate 45%).

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 Albany County DCYF respondents[1] were relatively new to CPS field work, with an average of 4.8 years of CPS experience; 59% reported CPS experience of three years or less. The percentage of respondents reporting overtime of five hours or less in a week slightly decreased from 94% in the pre-pilot period to 89% in the pilot period. Additionally, the average overtime hours slightly increased from 3.2 hours in the pre-pilot period to 3.8 hours in the pilot period. Seventy-four percent of respondents reported a typical court waiting time of two hours or less and 82% reported spending on average four 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 influenced 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

In the Albany County DCYF respondents reported using the laptop during normal work hours, after work hours, on-call, and when working overtime. Albany County DCYF removed CPS desktops

[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.

and installed docking stations. 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. Other work included court-related documents, safety assessments, reading and reviewing case histories, opening new cases, doing person searches, checking client histories, email, and accessing the Welfare Management System (WMS). Approximately 91% of the respondents reported using the laptop to access various forms of information from government Web sites at least once a day. Similarly, all (100%) of the respondents accessed email at least once a day or more, while 96% of respondents reported using their laptop at least once a day or more to access map directions.

The extent to which caseworkers could 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 frequency during the pilot period. Fifty-six percent of respondents reported returning to the office once a week or less to access case information during the pilot period, compared to only 35% in the pre-pilot period. The respondents were in the field approximately the same number of days per week (average 2.75 days) during the pre- and pilot periods.

Albany County DSS did not have district-provided external broadband cards during the pilot period. While out of the office, respondents reported using 'hot spots' and court house provided wireless connections. While at home, most used their personal Internet Service Providers (ISPs). While many respondents reported encountering few problems, several reported obstacles to mobile use such as the inability to establish a connection, slow speed, or unreliable connections while in the field. A few noted similar connection problems while at home. Most respondents did not perceive privacy as problematic at the court house, but some did have privacy concerns in the field. Several respondents noted small blocks of time available to do work were an issue at court and in the field. One respondent stated, "The only problem I have experienced with the use of the laptop is the inability to log-on in various places. Relying on 'hot spots' for usage takes away from the ability to use [it]." The device characteristics such as the built-in mouse were an issue; several respondents described how they taped an index card over the mouse pad area to prevent the cursor from jumping around the screen.

Participants were asked about the ease of logging-on to the device. Overall, 72% said it was "Easy" to "Extremely easy," 23% rated it as "Neither difficult nor Easy," and another 5% rated the log-on process as "Difficult." One respondent commented on the need for training on "short cuts and log-on tips for hot spots."

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 the office, respondents used the laptop most frequently at home (73%), for an average of over three hours per week. Fewer reported using the laptop in the field and at court (32%) for an average of about 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	32% (7)	1.14 Hours
Court	32% (7)	0.86 Hours
Home	73% (16)	3.36 Hours
Do not use at all	0% (0)	--

** Based on survey respondents who took the post survey n=22. Total number of testers n=40.*

Respondents expressed the importance of being connected and emphasized that having constant connectivity would enhance the benefits of using a laptop. One respondent stated, "I think the laptop would be even more useful if we had wireless Internet cards so that we could use them to access information while in the field when access points are not available. I do not bring my laptop in the field with me at all because there are not many places I would be able to access CONNECTIONS and WMS."

The amount of time caseworkers spend in court suggests that it is an unexploited location for mobile work in many districts. Respondents in the Albany County DCYF spent on average 2.5 days a month at court and approximately 74% reported waiting in court two hours or less 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. Also, respondents suggested the wait times in court were pretty short and this impacts the ability to get work done while waiting. Respondents suggested they did not use the laptop in the court house because there are already two desktop computers available and a private room to use. Others stated that bringing the laptop did not add additional capability or benefit, the walk to the court house was a significant distance (about one mile and they would have to carry the laptop), and the risk of loss or damage was too great.

Caseworkers could work overtime from home if they got prior approval, however, there is a policy in place that caseworkers are not allowed to work from home during business hours. Several respondents stated that working from home was now more efficient because they did not have to deal with the constant interruptions found in the office, and it increased their flexibility. One respondent expressed that it was beneficial because he did not have to stay at the office until seven o'clock in the evening each night, and instead could go home, eat dinner, and then spend one or two hours finishing notes.

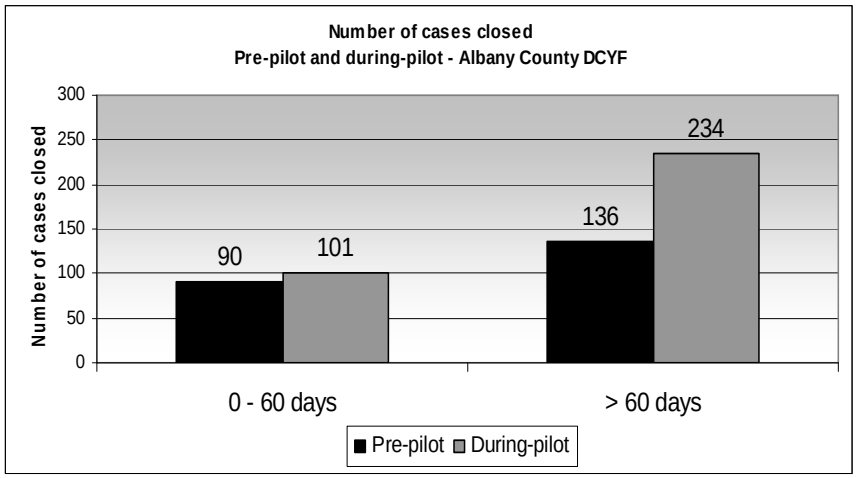
Productivity and Efficiency

This analysis uses central database data and survey responses to examine two core questions about possible technology impacts within the Albany County DCYF: (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 during the pilot period, up from 90

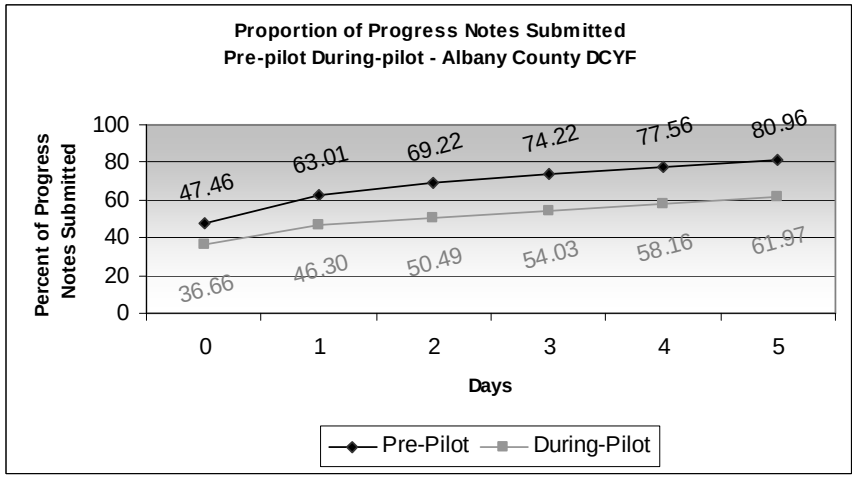
in the pre-pilot period to 136 during the pilot period. The number of cases closed in over 60 days increased from 136 in the pre-pilot period to 234 during the pilot period. This is a marked increase in productivity; the total number of cases closed increased substantially from 226 in the pre-pilot period to 335 during the pilot period – a 48% increase. It is important to note that in this county the total number of cases available to be worked on[2] slightly increased from 800 in the pre-pilot period to 821 during the pilot period – a 2.6% increase.

Figure 1 – Proportion of Albany County DCYF Cases Closed Pre-Pilot and During-Pilot



An 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 fifth day following the event. But contrary to expectations, the proportion of progress notes entered in each time period in the pilot period is consistently below that of the pre-pilot period. During the pre-pilot period almost 70% of notes were entered by the second day, compared to just over 50% for the period of laptop use. By this measure, timeliness decreased somewhat during the pilot period, but is still high overall.

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



[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.

There may be multiple reasons for this decrease in the timeliness of note entry, including: the replacement of the desktop PCs by the laptops with docking stations and learning to use the new equipment configuration may have slowed the normal work processes. The laptops were not equipped with wireless access cards, which limited their utility in the field. 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 closings cases during the pilot period that could have had this effect. Some additional adjustments to work processes may be necessary to take full advantage of the laptops. Adjusting use and deployment to these and related issues can be part of the learning process in implementing 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."

Most respondents reported the use of laptops improved their work in terms of timeliness and accessing information, with none reporting a negative impact (Table 2 below).

Table 2 - Perceived Change in Timeliness and Work Impacts – Albany County DCYF

	Much worse (n)	Somewhat worse (n)	About the same (n)	Somewhat better (n)	Much better (n)
Timeliness of documentation	0%(0)	0%(0)	27%(6)	64%(14)	9%(2)
Ability to do work in court	0%(0)	0%(0)	68%(15)	23%(5)	9%(2)
Ability to access case information	0%(0)	0%(0)	23%(5)	55%(12)	23%(5)
Communication with supervisors	0%(0)	0%(0)	82%(18)	9%(2)	9%(2)
Service to clients	0%(0)	0%(0)	64%(14)	27%(6)	9%(2)

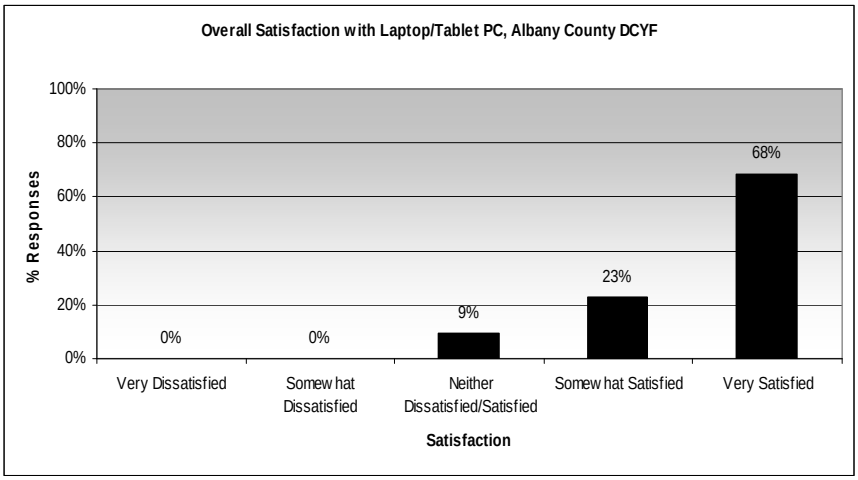
Overall, 73% of respondents reported timeliness of documentation was "Somewhat better" or "Much better" using the laptop. And 77% of respondents reported the ability to access case information as being "Somewhat better" or "Much better" using the laptop. Respondents also reported a somewhat smaller but positive impact on communicating with supervisors and service to clients (18% and 36% reporting an improvement respectively). Ability to work in court improved for 32% of the respondents.

No respondents reported a negative impact on timeliness, which is somewhat inconsistent with the timeliness of documentation results obtained from the central database. It is possible that the reduction in timeliness seen in those results was too small to be noticed by the caseworkers.

Satisfaction

The overall level of satisfaction with the laptops was exceptionally high. Figure 3 below shows 91% of respondents expressed being "Somewhat satisfied" or "Very satisfied." None of the respondents expressed being "Dissatisfied" with the laptops, while only 9% indicated that they were "Neither Dissatisfied/Satisfied."

Figure 3 - Overall User Satisfaction with the Laptops



** Based on survey respondents who took the post survey n = 22. Total number of testers n = 40.*

Laptop use generally was seen as contributing to lower job-related stress; 72% of respondents said that it reduced stress, while roughly 27% said it did not. Those who reported a reduction in stress attributed this to their ability to catch up on work, just knowing the laptop was available, and having the flexibility of working on documentation outside of the office. One respondent said, "It [the laptop] has made it very convenient for me to do work from home, specifically entering case notes, which has allowed me to keep more up-to-date on my work." However, several others expressed a different sentiment stating, "It [the laptop] does not decrease the volume of work we have or amount of cases we have. It makes it easier to bring work home but that doesn't change our case loads or the demands of the paperwork and mandates."

Overall, 96% of respondents would recommend the use of the laptops to colleagues. The reasons mentioned included increased flexibility in respondents' ability to do work, ability to use time more efficiently, opportunities to do work outside of the office when it is convenient for them, increased access to information, and more timely documentation.

Center for Technology in Government

Assessing Mobile Technologies in Child Protective Services

Broome 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 were 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 Broome County DSS. Findings are based on data collected through online surveys, district questionnaires, and analysis of CONNECTIONS data (see Appendix C of the *Demonstration Project's Summary Report* for data collection tools and timeline). The field test lasted 55 days from 11/15/07- 1/9/08.

District Deployment

Broome County DSS has approximately 23 CPS staff responsible for child protective services. Broome County is a mostly rural area with one metropolitan center in the Southern Tier of NYS and has a population of over 200,000 residents. The stated goals of the Broome County DSS for participating in the demonstration project were to use mobile technologies to increase CPS caseworker performance, enhance caseworker communication, case access, and workers' ability to investigate child abuse allegations.

The Broome DSS deployed 10 Dell Latitude D620 laptops to 20 caseworkers, three supervisors, and one manager between the dates of 11/8/07 and 11/15/07 (see Appendix A of the *Demonstration Project's Summary Report* for device specifications). All ten laptops were deployed with external Verizon broadband cards. The laptops primarily rotated among emergency coverage staff each week, in addition, each CPS unit received at least one laptop that was available to sign-out on a first come, first served basis. Each person received individual training and was provided a copy of the OCFS produced guidebook on how to connect to CONNECTIONS and security precautions were discussed with each person. 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.

Finally, no policies changed to support the introduction of mobile technologies before or during the pilot period. Some work practices were modified; for example, emergency coverage staff were instructed to use their laptop to receive new cases (by pulling the record up on the screen) instead of transcribing voice reports from the State Central Registry (SCR) as they had done in the past.

Characteristics of Respondents

A total of 20 CPS caseworkers participated in this study: 13 took the baseline survey (response rate 65%); 8 took the post-pilot survey (response rate 40%); and 6 took both the baseline and post-pilot surveys (response rate 30%).

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 Broome County DSS respondents[1] were moderately experienced in CPS field work, with an average of 5.8 years of experience; 54% reported CPS experience of three years or less. The percentage of respondents reporting overtime of five hours or less in a week dramatically decreased from 83% in the pre-pilot period to 40% in the pilot period. Additionally, the average overtime hours increased from five hours in the pre-pilot period to six hours during the pilot period. The range of overtime hours worked per week changed from 4 - 6 hours in the pre-pilot period to 2 - 8 hours during the pilot period. All of the respondents reported a typical court waiting time of less than one hour and 85% reported spending on average five 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.

[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

Broome County DSS respondents reported using the laptop during normal work hours, after work hours, and when working on-call. Ten laptops were rotated among various units and emergency caseworkers were given exclusive use of a laptop during their time in emergency status (which lasts about one week). Open-ended survey comments revealed that the laptops were rarely taken into the field and that several respondents have not used the laptop in the field because they do not like it or it was already signed-out. Based on comments from those who did use the laptop, it was used primarily in case investigation and interventions and for documentation and reporting activities. Case documentation was the most frequent use, including inputting and updating notes. Other work included reading and reviewing case histories, opening new cases, checking client histories, word processing, and email. Approximately five respondents reported using the laptop to access various forms of information from government Web sites at least once a day, access email at least once a day or more, and access map directions once a day or more.

Several respondents commented on some of the subtle changes in mobility and communication patterns. One respondent stated, "I use the laptop primarily when I am doing emergency coverage. It speeds up my work, frees me from having to talk to the register [the State Central Registry] and hand write reports and allows me to check histories and enter notes directly into the system."

The extent to which caseworkers could 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 frequency during the pilot period. Five respondents reported returning to the office to access information five times or more a week during the pre-pilot period, compared to three respondents returing five time or more during the pilot period. The respondents were in the field approximately the same number of days per week (average about four days) during the pre- and pilot periods.

Broome County DSS had district-provided external broadband cards for ten laptops during the pilot period. Five respondents reported minor obstacles to mobile use in the field and while at home. Problems included the inability to establish a connection and unreliable and slow connections. Lastly, device characteristics such as the built-in mouse were an issue suggesting that the cursor jumped around the screen and that it was frustrating.

Participants were asked about the ease of logging-on to the device. Overall, 29% said it was "Easy," 71% rated it as "Neither difficult nor Easy," and none of the respondents rated the log-on process as "Difficult" or "Extremely difficult."

Location

Table 1 below details the percentage of survey respondents using the laptop at different locations, as well as the average length of time the laptop was used. Five respondents reported using the laptop at home for an average of three hours per week. One respondent reported using the laptop in the field and while at court.

Table 1 - Location and Hours of Laptop Use per Week

	Use of Laptop* (n)	Average length of use per week*
Field	13% (1)	0.33 Hours
Court	13% (1)	0.33 Hours
Home	63% (5)	3.00 Hours
Do not use at all	13% (1)	--

** Based on survey respondents who took the post survey n=8. Total number of testers n=20.*

The amount of time caseworkers spend in court suggests that it is an unexploited location for mobile work in many districts. However, respondents in Broome County DSS spend on average four days a month at court, but all (five respondents) reported waiting in court less than one hour during a court visit. Caseworkers may not be using the laptop in the court house or the field because of other competing interests that may limit the amount and type of work they can do. Several respondents mentioned that they do not use the laptop during the day because it is often signed-out by other participants.

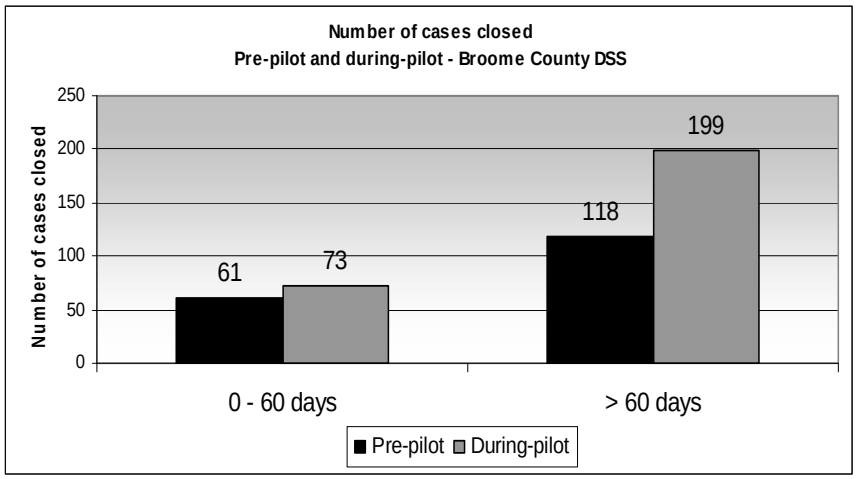
Productivity and Efficiency

This analysis uses central database data and survey responses to examine two core questions about possible technology impacts within the Broome 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 during the test period, up from 61 in the pre-pilot period to 73 during the pilot period. The number of cases closed in over 60 days increased from 118 in the pre-pilot period to 199 during the pilot period. This is a marked increase in productivity; the total number of cases closed increased substantially from 179 in the pre-pilot period to 272 during the pilot period – a 52% increase. It is important to note that in this county the total number of cases available to be worked on[2] slightly increased from 595 in the pre-pilot period to 607 during the pilot period – a 2.0% increase.

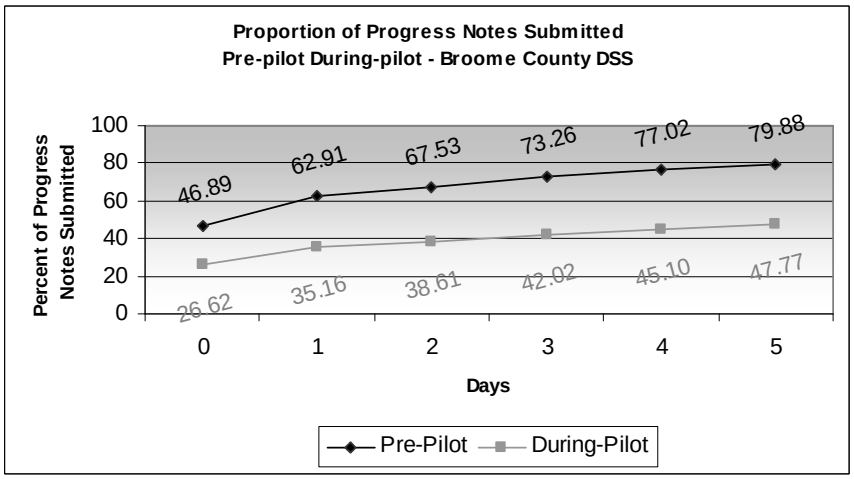
[2] The number of cases available to be worked on is the total of investigation stages that were open at any time during each of the pre-or pilot periods.

Figure 1 - Number of Broome 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 second day following the event. In addition, upwards of 60% of all notes for the pilot period were entered by the fifth day after an event. But contrary to expectations, the proportion of progress notes entered in each time period in the pilot period is consistently below that of the pre-pilot period, which saw over 80% of all notes entered by the fifth day. By this measure, timeliness decreased somewhat during the pilot period.

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 including that 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 closings cases during the pilot period that could have had this effect. Some additional adjustments to deployment and work processes may be necessary to take full advantage of the laptops. One respondent reported, "The keyboard on the laptop is smaller than a normal keyboard and I am very prone to typing errors when using it. If working from home, I prefer to dictate or use my desktop as I spend less time proofreading and correcting mistakes. Also, although my unit has two laptops, the same two workers have them

constantly. This is not a huge issue as I prefer not to use them, but has created problems for others in the unit." 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."

Most respondents reported the use of laptops improved their work in terms of timeliness and accessing information, with none reporting a negative impact (Table 2 below).

Table 2 - Perceived Change Timeliness and Work Impacts – Broome 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)	60%(3)	20%(1)	20%(1)
Ability to do work in court	0%(0)	0%(0)	80%(4)	20%(1)	0%(0)
Ability to access case information	0%(0)	0%(0)	80%(4)	20%(1)	0%(0)
Communication with supervisors	0%(0)	0%(0)	100%(5)	0%(0)	0%(0)
Service to clients	0%(0)	0%(0)	80%(4)	20%(1)	0%(0)

Overall, two respondents reported timeliness of documentation was "Somewhat better" or "Much better" using the laptop. And one respondent reported the ability to access case information as being "Somewhat better" or "Much better" using the laptop. Respondents reported no improvement in communicating with supervisors and only one reported positive impacts in providing service to clients. Ability to work in court improved for one respondent.

For some respondents, the value of the portability was significant. One reported:

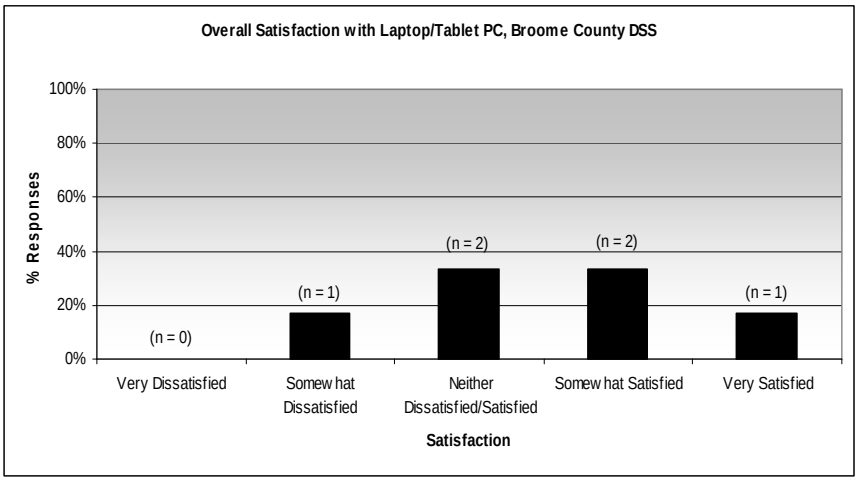
> I use the laptop primarily when I am doing emergency coverage. It speeds my work, frees me up from having to talk to the register and hand write reports and allows me to check histories and enter notes directly into the system. It allows me to work from home at night, so I can get more accomplished in a more comfortable environment.

Some respondents reported that the low reliability and speed of the wireless connections were a problem when using the laptops in the field, which could account for these modest levels of reported improvement in productivity. They also reported that laptops were not always available when desired because they were signed out to other caseworkers. None, however, reported a negative impact on timeliness, which 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 those results 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 three of the six respondents expressed being "Somewhat satisfied" or "Very satisfied." One respondent reported being "Somewhat dissatisfied" with the laptops, while two respondents indicated that they were "Neither Dissatisfied/Satisfied."

Figure 3 - Overall User Satisfaction with the Laptops



** Based on survey respondents who took the post survey n = 8. Total number of testers n = 20*

Individual, organizational or managerial factors may be influencing these overall satisfaction levels. One respondent reported, "The laptop is a great tool and a great start…however it is VERY slow and there is inconsistent access to the H drive. I have found that it is faster for me to use my personal laptop using a Word doc. and then pasting it into CONNECTIONS at the office."

Laptop use generally was not seen as contributing to lower job-related stress; three of the five respondents said that it did not reduce stress, while the other two said it did. Those who reported a reduction in stress attributed this to their ability to catch up on their work and having the flexibility of working on documentation outside of the office. One respondent said, "I am able to complete my work at home. Before having the laptop I was doing notes at home and having the secretaries put them into CONNECTIONS. Now I am able to complete them myself, and do the actual CONNECTIONS work at home after hours, on the weekends, and time-off." The most frequently mentioned reason respondents noted for not reducing stress was that the laptops were generally unavailable for use given the existing sign-out process. A few respondents expressed this similar sentiment, "I do not have a laptop assigned to me, I would probably like to have a laptop personally assigned to me. The current sign-out system with one laptop per worker unit is insufficient."

All six respondents would recommend the use of laptops to colleagues. The reasons mentioned included ability to use time more efficiently, increased flexibility in respondents' ability to do work, increased timeliness of documentation, and increased access to information. One caseworker pointed out that, "Even though I have said the use of the laptop does not necessarily assist me with my job. I do believe it is a beneficial tool to have, especially for those that do emergency coverage. Plus, it is one step in assisting caseworkers with getting their job done."

Center for Technology in Government

Assessing Mobile Technologies in Child Protective Services

Chemung 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 were 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 ServiceDistricts* 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 Chemung County DSS. Findings are based on data collected through online surveys, teleconferences, district questionnaires, and analysis of CONNECTIONS data (see Appendix C of the *Demonstration Project's Summary Report* for data collection tools and timeline). The field test lasted 55 days from 11/15/07 – 1/9/08.

District Deployment

Chemung County is in Central New York and borders Pennsylvania and has a population of over 84,000 residents. The Chemung County DSS participated in the demonstration project to learn if mobile technologies can help staff with documentation, including progress notes, safety assessments, and investigation conclusions.

The Chemung County DSS deployed 13 Dell Latitude D620 laptops and two HP Compaq tc4400 Tablets to 23 caseworkers and two supervisors on 11/15/07 (see Appendix A of *the Demonstration Project's Summary Report* for device specifications). Twelve caseworkers received their own laptop and two laptops were reserved for on-call staff; one laptop was shared between two supervisors. Twelve of the 13 laptops came with docking stations including keyboards and monitors. Five district-provided external broadband cards were shared on a first come, first served basis among the laptop and tablet users. 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. Caseworkers participating in the field test were selected from a pool of volunteers.
Finally, no policies were changed to support the introduction of mobile technologies before or during the pilot period. In both periods, caseworkers were given compensatory time for overtime hours worked while at home. Caseworkers who worked overtime outside of the office were asked to sign a confidentiality agreement asking that they not divulge client sensitive information.

Characteristics of Respondents

A total of 23 caseworkers participated in this study: 23 took the baseline survey (response rate 100%); 14 took the post-pilot survey (response rate 61%); and 14 took both the baseline and post-pilot surveys (response rate 61%).

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 Chemung County DSS respondents[1] were relatively new to CPS field work, with an average of 4.2 years of experience among the survey respondents; 57% reported CPS experience of three years or less. Respondents were working slightly more overtime hours during the pilot period. Ninety-three percent of respondents reported working five hours or less of overtime in the pre-pilot period, but this proportion decreased to 89% during the pilot. Therefore, the average overtime hours increased slightly from two hours in the pre-pilot period to 2.7 hours during the pilot period. In the pre-pilot period, almost 36% of the participants did not work overtime at all, during the pilot this proportion decreased to 22%. Eighty-six percent of respondents reported a typical court waiting time of forty-five minutes or less and 65% reported on average spending three 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.

[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

Chemung County DSS respondents reported using the laptop during normal work hours, after work hours, on-call, and when working overtime. Ten 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. Case documentation was the most frequent use, including inputting and updating notes, and completing safety assessments. Other work included reading and reviewing case histories, opening new cases, doing person searches, checking client histories, email, and accessing documents and forms. Approximately 67% of the respondents reported using the laptop to access various forms of information from government Web sites while in the field at least once a day. Similarly, 78% of respondents accessed email at least once a day or more, while 67% of respondents reported using their laptop at least once a day or more to access map directions. One respondent stated they use the laptop for "everything my job requires, typing progress notes, legal documents, letters to court and looking up people named on reports. In my office we use the Internet to check clients on myspace.com (a very helpful tool) and we do research regarding 'explanations of injury' and fact checking. We also use the sex offender registry and the Department of Corrections Web site."

The extent to which caseworkers could 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 frequency during the pilot period. Twenty-nine percent reported having to return to the office to access information about once a week or less in the pre-pilot period and that proportion increased to 44% during the test. 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 subtle changes in mobility and communication patterns, in particular the benefits for on-call workers. For example, one respondent described a situation where they used the laptop to enter progress notes on Saturday, notified the supervisor, and then asked the supervisor to approve it on Sunday – this worked so well that the caseworker did not have to work on the case on Monday. Another stated that if he had an appointment at 2 pm and it got canceled, but then had another scheduled for 3 pm, he could sit in his car and do some work without having to return to the office.

Chemung County DSS had five district-provided external broadband cards during the pilot period and rotated them on an "as needed basis," however the court house did not have wireless capability. Some did use their home Internet Service Providers (ISPs) while at home. The respondents reported the inability to establish a connection in all locations as an obstacle to mobile use. Several respondents noted that small blocks of time available to do work at court and in the field interfered with their use of the laptop. Several respondents expressed that the laptops tend to be slower than their desktops when used outside of the office, the cursor jumps around, and it takes longer to update the screen when in CONNECTIONS. Other device characteristics, such as battery life, were issues for some. One respondent stated, "It is difficult to use the laptop in the field because of privacy. The battery does not last long. For instance, my battery died while filing out this survey."

Participants were asked about the ease of logging-on to the device. Overall, 89% said it was "Easy" to "Extremely easy," 11% rated it as "Neither difficult nor Easy," and none of the respondents rated the log-on process as "Difficult" or "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. Eight respondents reported using the laptop most frequently at home, for an average of over four hours per week. One respondent reported using it in the field for less than a half hour a week.

Table 1 - Location and Hours of Laptop Use per Week

	Use of Laptop (n)	Average length of use per week
Field	7% (1)	0.13 Hours
Court	0% (0)	0.00 Hours
Home	57% (8)	4.22 Hours
Do not use at all	0% (0)	--

** Based on survey respondents who took the post survey n = 14. Total number of testers n = 23.*

Respondents expressed the importance of being connected and emphasized that having constant connectivity would enhance the benefits of using a laptop. One respondent stated, "I do not have a laptop for use all day, only once per month for on-call work. I feel that having a laptop at all times for daily use would benefit my productivity. I spend a lot of time traveling to facilities and would be able to type notes between visits or during meetings." Another stated, "Although I do not have a laptop assigned to me, being able to sign-out a laptop and use it at home to complete case notes etc. is very helpful."

The amount of time caseworkers spend in court suggests that it is an unexploited location for mobile work in most districts. Respondents in the Chemung County DSS spent on average three days a month at court and wait approximately one hour or less during a court visit. Therefore, caseworkers may not be using the laptop in the court house or the field because, as mentioned, the court house is not wired and the laptops are used on a sign-out basis. The number of opportunities to use the laptop may be limited for some.

Caseworkers could work overtime from home if they got prior approval and there has been no problem with approvals (Chemung County DSS is currently experiencing high turnover). Several respondents stated that working from home was now more efficient because they did not have to deal with the constant interruptions found in the office and it increased their flexibility.

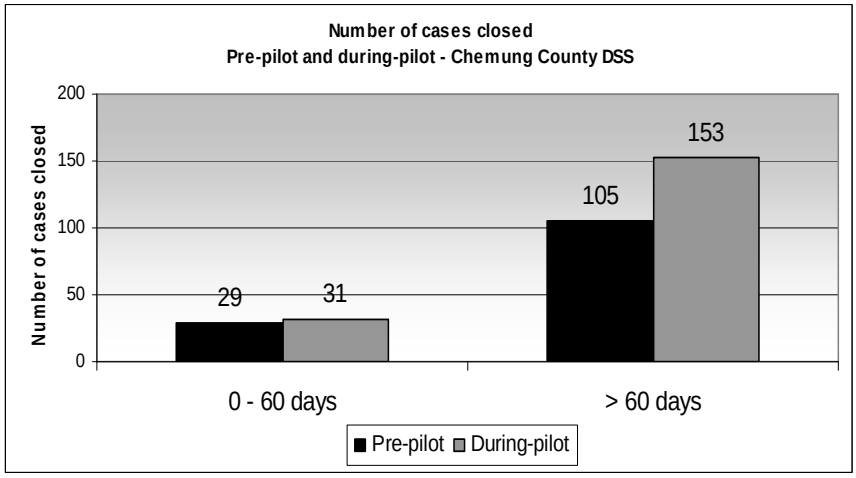
Productivity and Efficiency

This analysis uses central database data and survey responses to examine two core questions about possible technology impacts within the Chemung 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 very slightly during the pilot period, up from 29 in the pre-pilot period to 31 during the test period. The number of cases closed in over 60 days increased from 105 in the pre-pilot period to 153 during the pilot period. This is a marked increase in productivity; the total number of cases closed increased substantially from 134 in the pre-test to 184 during the test period – a 37% increase. It is important to note that in this county the total number of cases available to be worked on[2] slightly decreased from 471 in the pre-pilot period to 466 during the pilot period – a 1.1% decrease.

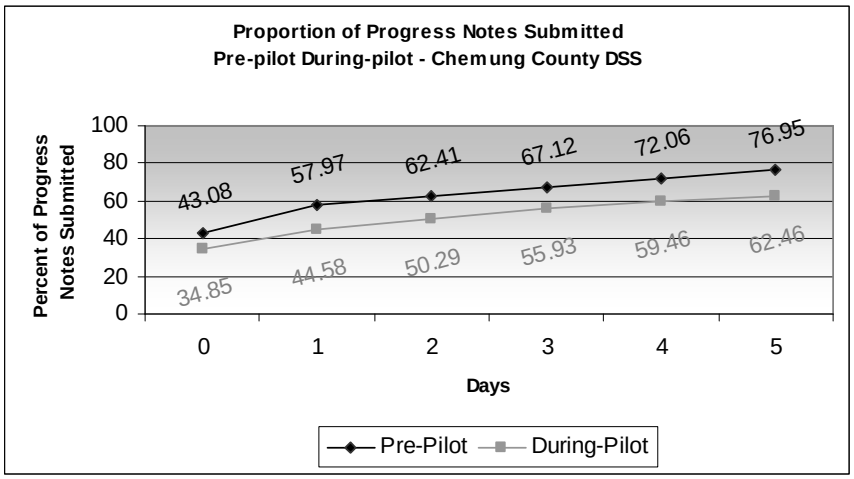
Figure 1 - Number of Chemung County DSS Cases Closed Pre-Pilot and During Pilot



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 fifth day following the event. But contrary to expectations, the proportion of progress notes entered in each time period during the pilot period is consistently below that of the pre-pilot period. By the fifth day, over 75% of all notes were entered for the pre-pilot period, compared to 62% during the pilot. By this measure, timeliness decreased somewhat during the pilot period.

[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. A total of 15 devices were deployed (13 laptops and two tablet PCs). Of these, seven were desktop replacements and three were used for on-call work and by a supervisor. The change in equipment and related work processes may account for a decreased workflow during the pilot period.

Some additional adjustments to deployment and work processes may be necessary to take full advantage of the laptops. One respondent reported:

> My office is off site from the main building, as we are a CAC. We have experienced problems with the routing system. Currently I cannot log on to CONNECTIONS while I am using the docking station. This has been ongoing for about two weeks. We have experienced numerous problems of this nature since receiving the laptops

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.”

Most respondents reported the use of laptops improved their work in terms of timeliness and accessing information, with none reporting a negative impact (Table 2 below).

Table 2 - Perceived Change Timeliness and Work Impacts – Chemung 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)	44%(4)	33%(3)	22%(2)
Ability to do work in court	0%(0)	0%(0)	100%(9)	0%(0)	0%(0)
Ability to access case information	0%(0)	0%(0)	11%(1)	67%(6)	22%(2)
Communication with supervisors	0%(0)	0%(0)	44%(4)	44%(4)	11%(1)
Service to clients	0%(0)	0%(0)	67%(6)	22%(2)	11%(1)

Overall, 55% of respondents reported timeliness of documentation was “Somewhat better” or “Much better” using the laptop. And 89% of respondents reported the ability to access case information as being “Somewhat better” or “Much better” using the laptop. Over one-half of the survey respondents reported improvement in communicating with supervisors and 33% reported positive impacts in providing service to clients. Ability to work in court did not improve for any of these respondents. The problems in court were described by one respondent:

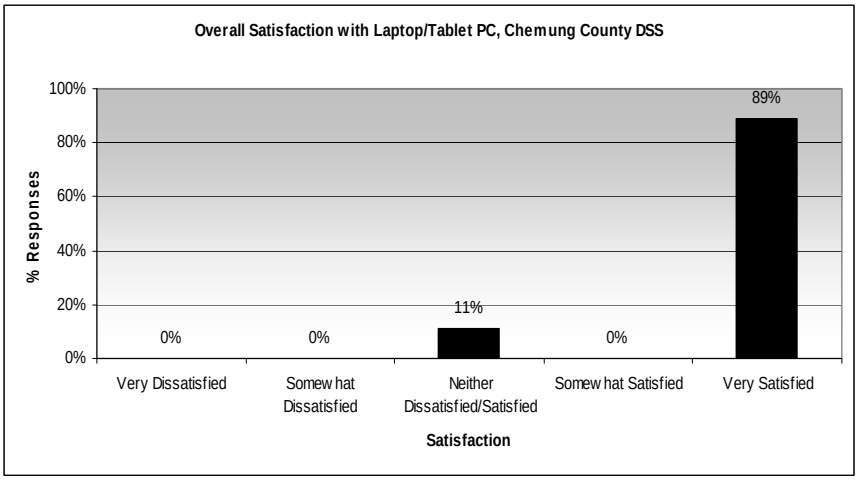
> Our court set up does not allow a private waiting area for caseworkers. Therefore typing has to be done in a room full of people waiting for their court appearance. I have been able to use my laptop on limited occasions, only if it was at a time I knew I would be waiting for a length of time before I was called.

Some caseworkers reported problems with slow speed or erratic behavior of the system while connected to CONNECTIONS and another had trouble connecting at home using their personal ISP. These kinds of problems could account for these modest levels of reported improvement in productivity. None, however, reported a negative impact on timeliness, which 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 high. Figure 3 below shows that 89% of respondents expressed being “Very satisfied.” None of the respondents reported being “Somewhat dissatisfied” or “Very dissatisfied” with the laptops, while only 11% indicated that they were “Neither Dissatisfied/Satisfied.”

Figure 3 - Overall User Satisfaction with the Laptops



** Based on survey respondents who took the post survey n = 14. Total number of testers n = 23.*

Laptop use generally was seen as contributing to lower job-related stress; 67% of respondents said that it did reduce stress, while one-third said it did not. Those who reported a reduction in stress attributed this to their ability to catch up on their work, being able to meet deadlines, just knowing the laptop was available, and cutting down on travel time to and from the office on weekends. One respondent said, "The laptop at least gives me the feeling that I can type notes when at home to reduce stress …. The laptop has helped out greatly with on-call work and has overall reduced my caseload because of the overtime from home." Several other respondents did not see the laptop reducing their job-related stress. One respondent stated, "My stress is related to the amount of work that I must conduct regarding these cases, which the laptop has no bearing over the regulations I must follow."

Overall, 100% of respondents would recommend the use of laptops to colleagues. The reasons mentioned included the ability to use time more efficiently, increased flexibility in respondents' ability to do CPS work, the ability to do work outside of the office, and increased access to information. One caseworker pointed out, "I would recommend the laptop to colleagues because it allows for more availability of information during on-call shifts, as well as ease in documentation after hours."

Center for Technology in Government

Assessing Mobile Technologies in Child Protective Services

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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?

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This profile presents findings for the Clinton County DSS. Findings are based on data collected through online surveys, teleconferences, district questionnaires, and analysis of CONNECTIONS data (see Appendix C of the *Demonstration Project's Summary Report* for data collection tools and timeline). The field test lasted 63 days from 11/7/07 - 1/9/08.

District Deployment

Clinton County DSS has 18 CPS staff responsible for child protective services. Clinton County is a rural area in the Northern most region of New York State and has approximately 80,000 residents. The Clinton County DSS participated in the demostration project to learn if mobile technologies can help staff save time by maximizing field time and by providing caseworkers with more opportunities to complete documentation. The county encompasses a large geographical area, over 1,100 square miles, and caseworkers spend a significant potion of their time traveling between home visits.

The Clinton County DSS deployed 16 Dell Latitude D620 laptops to 15 CPS caseworkers and one supervisor on 11/07/07 (see Appendix A of *the Demonstration Project's Summary Report* for device specifications). All 16 caseworkers received their own device and docking stations with keyboards and monitors. Two additional laptops were delivered on 1/11/08 and were originally set to be paired with satellite boxes, but the satellite procurement through NYS was delayed and then later dropped (due to vendor issues). No external broadband cards were provided or procured for any of the devices during the pilot period. The procurement and contract approval process for broadband cards took longer than expected. Even after approval of the contract, several additional

steps such as setting up the Verizon account and fulfilling the order were not completed by the end of the pilot period. Therefore, the only 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.

Finally, no policies were changed to support the introduction of mobile technologies before or during the pilot period. In both periods, caseworkers were allowed, with prior approval, overtime pay for work done at home after regular work hours.

Characteristics of Respondents

A total of 15 CPS caseworkers participated in this study: 15 took the baseline survey (response rate 100%); 15 took the post-pilot survey (response rate 100%); and 15 took both the baseline and post-pilot surveys (response rate 100%).

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 Clinton County DSS respondents[1] were very experienced in CPS field work, with an average of 9.3 years of experience; 73% reported CPS experience of six years or more. Respondents were working slightly more overtime hours during the pilot period. The percentage of respondents reporting overtime of seven hours or less in a week increased from 53% in the pre-pilot period to 64% in the pilot period. As a result, the average overtime hours slightly increased from 7.9 hours in the pre-pilot period to 8.1 hours in the pilot period. In both periods, all participants reported working at least four hours overtime a week. Eighty-six percent of the respondents reported a typical court waiting time of three hours or less and 57% 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) 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

Clinton County DSS respondents reported using the laptop during normal work hours, after work hours, on-call, and when working overtime. Clinton 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. Other work included reading and reviewing case histories, opening new cases, doing person searches, checking client histories, email, and accessing the Welfare Management System (WMS). Approximately 80% of the respondents reported using the laptop to access various forms of information from government Web sites at least once a day. Similarly, 93% of the respondents accessed email at least once a day or more, while 64% of respondents reported using their laptop at least once a day or more to access map directions.

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. It was thought that mobile access would decrease the amount of times caseworkers need to return to the office from the field, however, respondents reported no change in the frequency of returning to the office to access case information during the pilot period. Seventy-one percent of respondents reported returning to the office two or more times a week to access case information in the pre- and pilot periods. The respondents were in the field approximately the same number of days per week (average about 4 days) during the pre- and pilot periods.

Clinton County DSS did not have district-provided external broadband cards during the pilot period and the court house does not have wireless capability (however, it was noted the local district is working on providing wireless). Some did use their home Internet Service Providers (ISPs) while at home. No connectivity problems were reported while in the field or court because they did not connect with the laptop in those locations. However, those who were able to connect from home reported obstacles to mobile use such as inability to establish a connection, slow speed, or unreliable connections. Respondents not able to connect described their frustration, one respondent stated, “All worked fine when my dial-up was working, but the state took this option away. So, since I only have dial-up at home, and the broadband cards are not available yet, I am limited.”

Participants were also asked about ease of logging-on to the device. Overall, 64% said it was “Easy” to “Extremely easy,” another 36% rated it as “Neither difficult nor Easy,” and none of the respondents rated the log-on process as “Difficult” or “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, respondents reported using the laptop most frequently at home (40%), for an average of just over four hours per week. Respondents did not use the laptop while in the field or at the court house.

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	40% (6)	4.07 Hours
Do not use at all	7% (1)	--

** Based on survey respondents who took the post survey n=15. Total number of testers n=15.*

Respondents expressed the importance of being connected and emphasized that having constant connectivity would enhance the benefits of using a laptop. One respondent stated, "Without the broadband cards, the laptop at this point in time is no different than a desktop computer" while another suggested, "When we get broadband I believe that it will make a huge difference to enter notes as things occur in the field."

The amount of time caseworkers spend in court suggests that it is an unexploited location for mobile work in most districts. Respondents in the Clinton County DSS spend on average three days a month at court and wait on average about 2.5 hours during a court visit. However, caseworkers may not be using the laptop in the court house because of other competing interests, as well as the lack of connectivity, that may limit the amount and type of work they can do. One respondent suggested there was currently no place for caseworkers to work in the court house stating, "[There is] no confidentiality at court. We are required to sit in the lobby which is often full of clients and others. Also, we need to prep for and stay focused on the case at hand. It is hard to balance the laptop on knees and type notes."

Caseworkers could work overtime from home if they got prior approval. Several respondents stated that working from home was now more efficient because they did not have to deal with the constant interruptions found in the office and it increased their flexibility. One respondent expressed the benefits stating, "There is little opportunity to complete paperwork during regular business hours due to the volume of reports our county receives in comparison to the amount of staff our county has. The ability to work from home after hours and on weekends allows some of this backlog of paperwork to be caught up."

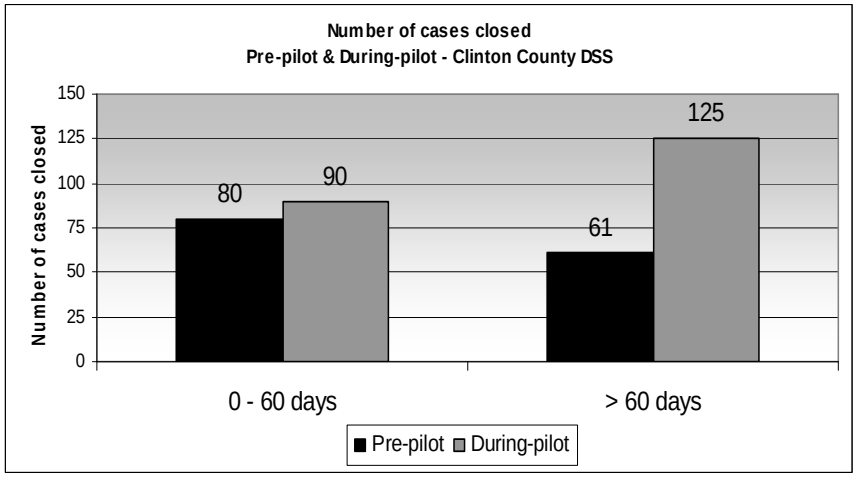
Productivity and Efficiency

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

Case closings are 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 slightly during the test period, up from 80 in the pre-pilot period to 90 during the pilot period. The number of cases closed in more than 60 days increased from 90 in the pre-pilot period to 125 during the pilot period. This is a marked increase in productivity; the total number of cases closed increased substantially from 141 in the pre-pilot to 215 during the pilot period—a 52% increase. It is important to note that in this

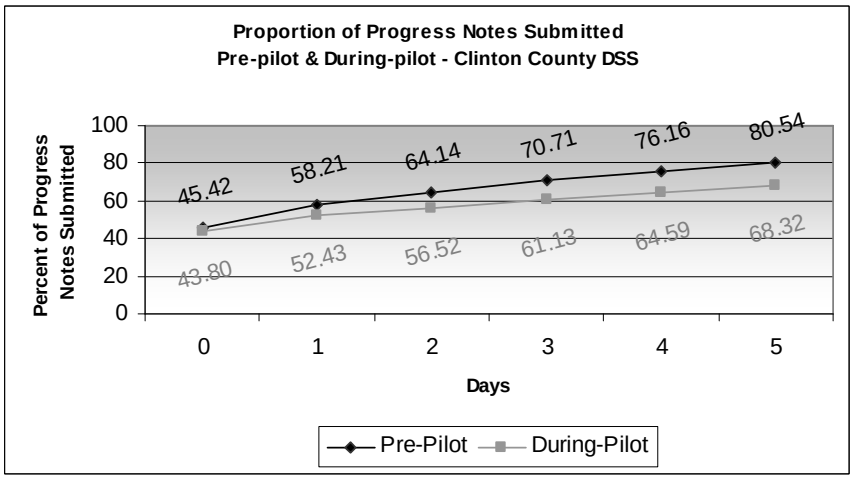
county the total number of cases available to be worked on[2] increased from 399 in the pre-pilot period to 426 during the pilot period – a 6.7% increase.

Figure 1 - Number of Clinton 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 second 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 80% of all notes were entered for the pre-pilot period, compared to 68% for the pilot. By this measure, timeliness decreased somewhat during the pilot period.

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

[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.

effect. A total of 18 devices were deployed, with docking stations as desktop replacements. Wireless access cards were not deployed during the test period, which limited the use of the laptops in the field. The change in equipment and related work processes may account for a decreased workflow during the pilot period.

Some additional adjustments to deployment and work processes may be necessary to take full advantage of the laptops. Adjusting to these issues can be part of the learning process in adapting to the new technologies. One respondent commented on several issues: "[The] impracticality of sitting in a car on rural roads in winter trying to balance the computer on a lap or seat to enter notes. And there is not often time in between visits to sit in car to enter notes."

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."

Only 21% of respondents reported that the use of laptops improved their work in terms of timeliness and only 28% for accessing information. None reported a negative impact (Table 2 below).

Table 2 - Perceived Change Timeliness and Work Impacts – Clinton 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)	79%(11)	14%(2)	7%(1)
Ability to do work in court	0%(0)	0%(0)	100%(11)	0%(0)	0%(0)
Ability to access case information	0%(0)	0%(0)	71%(10)	21%(3)	7%(1)
Communication with supervisors	0%(0)	0%(0)	92%(12)	0%(0)	8%(1)
Service to clients	0%(0)	0%(0)	92%(12)	8%(1)	0%(0)

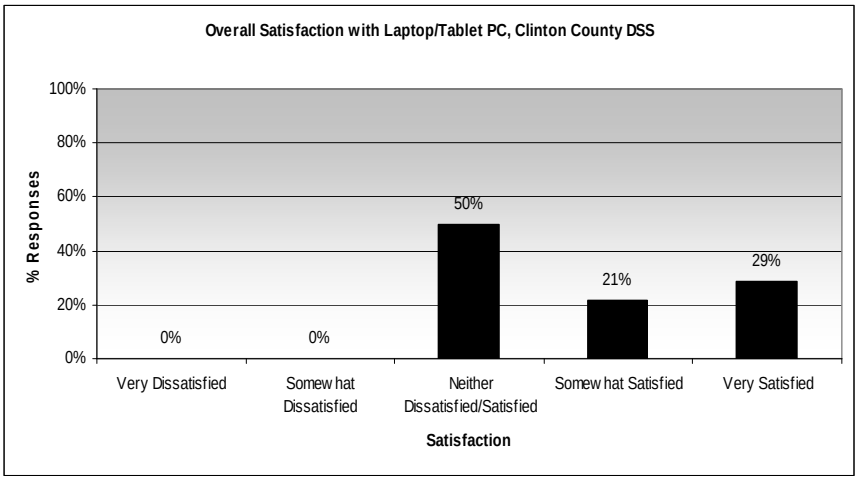
One respondent reported improvement in communicating with supervisors and one (8%) reported positive impacts in providing service to clients. Ability to work in court did not improve for any of these respondents.

Issues with working in the court house or while in the field may influence respondents' perceived impacts. Some caseworkers reported problems with slow speed or erratic behavior of the system while connected to the central database and others had trouble connecting at home using their personal ISP. These kinds of problems could account for these modest levels of reported improvement in productivity. That none reported a negative impact on timeliness is somewhat inconsistent with the timeliness of documentation results obtained from the central database. 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 50% of all respondents expressed being "Somewhat satisfied" or "Very satisfied." However, 50% indicated that they were "Neither dissatisfied/Satisfied." None of the question respondents expressed being "Somewhat dissatisfied" or "Very dissatisfied."

Figure 3 - Overall User Satisfaction with the Laptops



** Based on survey respondents who took the post survey n = 15. Total number of testers n = 15.*

Difficulties associated with no wireless cards, the learning curve and technical specifications of the new laptops (such as the sensitivity of the touch pad), the lack of privacy while working in the field, and the absence of a dedicated working space in courts were reported and may account for a split in satisfaction.

Laptop use generally was not seen as contributing to lower job-related stress; 57% of respondents said that it did not reduce stress, while 43% said it did. Those who reported a reduction in stress attributed this to their ability to catch up on their work, just knowing the laptop is available, and having the flexibility of working on documentation outside of the office. Several respondents did not feel as though laptops were contributing to lower job-related stress and attributed this to the lack of wireless connectivity. One respondent stated, "Without the broadband cards from Verizon, which they are holding up, the laptop at this point in time is no different than a desktop computer. Another caseworker mentioned, "It does not reduce the workload. There is no where in our Court available for us to use a laptop. In the field, I do field work. Attempting data entry in my car would be more inefficient than returning to the office to do it. My home is where my real life is. Working at home would increase stress."

Overall, 64% of respondents would recommend the use of laptops to colleagues, although 29% said they were unsure. This is compared to 7% who would not recommend the use of laptops to colleagues. The reasons attributed to why they would recommend the laptop included increased flexibility in ability to do work and the ability to do work outside of the office on one's own timetable. Several other respondents expressed this similar sentiment: "I think the laptops are a very good tool if you have all the pieces that make them work." As for respondents unsure or those that would not recommend the laptop, they attributed this to the lack of wireless connectivity.

Center for Technology in Government

Assessing Mobile Technologies in Child Protective Services

Columbia 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 were 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.
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This profile presents findings for the Columbia County DSS. Findings are based on data collected through online surveys, district questionnaires, and analysis of CONNECTIONS data (see Appendix C of the *Demonstration Project's Summary Report* for data collection tools and timeline). The field test lasted 75 days from 10/26/07-1/9/08.

District Deployment

Columbia County DSS has 12 CPS staff responsible for child protective services. Columbia County is mostly rural and has approximately 63,000 residents. The Columbia County DSS participated in the demonstration project to learn if mobile technologies can maximize field time, reduce the number of significantly overdue reports, and increase the accuracy of recorded notes.

The Columbia County DSS deployed 11 Dell Latitude D620 laptops to 11 caseworkers on 10/26/07 (see Appendix A of *the Demonstration Project's Summary Report* for device specifications). All caseworkers received their own device and docking stations with keyboards and monitors. Ten caseworkers were given their own device and one laptop was shared among two caseworkers working different shifts. All 11 laptops were supplied with external Verizon broadband cards approximately one week after caseworkers received the device. 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. Each person received individual training on how to use the laptop, as well as security precautions (as prescribed by

OCFS). Caseworkers were instructed to make sure the laptops were docked at least once a week to upload software and security updates.

Finally, no policies were changed to support the introduction of mobile technologies before or during the pilot period. Some work practices were modified during the pilot period; for example, caseworkers were required to bring the laptops with them while in the field and at the court house. Caseworkers were allowed to bring the laptops home, but this was not a formal requirement.

Characteristics of Respondents

A total of 11 CPS caseworkers participated in this study: 10 took the baseline survey (response rate 91%); 9 took the post-pilot survey (response rate 82%); and 8 took both the baseline and post-pilot surveys (response rate 73%).

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 Columbia County DSS respondents[1] were relatively new to CPS field work, with an average of 2.7 years of experience; 78% reported CPS experience of three years or less. Respondents were working slightly less overtime hours during the pilot period. While the percentage of respondents reporting overtime of four hours or less in a week did not change for both the pre-pilot and pilot periods (75% for both periods), the average overtime hours shifted down from 4.6 hours in the pre-pilot period to 3.2 hours in the pilot period. All of the respondents reported a typical court waiting time of three hours or less and 60% 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) 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

Columbia County DSS respondents reported using the laptop during normal work hours, after work hours, and when working overtime. Columbia 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, closing cases, writing petitions, word processing, email, and accessing information on the local L-drive. Overall, 50% of the respondents reported using the laptop to access various forms of information from government Web sites at least once a day. Similarly, 88% of respondents accessed email once a day or more, while 86% of respondents reported using their laptop at least once a day or more to access map directions.
The extent to which caseworkers could access information while out of the office has a big influence on what kinds of mobile work are possible. However, respondents reported returning to the office to access case information more frequently during the pilot period. Fifty percent of respondents reported returning to the office four or more times a week to access case information during the pilot period, compared to only 13% before the test. The respondents were in the field approximately the same number of days per week (average 2.5 days) during the pre- and pilot periods.

Columbia County DSS had district-provided external broadband cards during the pilot period. Respondents reported several obstacles to mobile use including the inability to establish a connection and slow speed or unreliable connections, mostly at home and while in the field. At the court house, the lack of privacy was the most problematic. Using docking stations presented some initial challenges and adjustments. One respondent reported, “After docking and undocking the laptop it takes a while to reboot. It is difficult typing notes on the laptop because of the placement of the mouse screen. My wrists must hit the screen and move the cursor and words end up misplaced in sentences and paragraphs. I am not really sure how that happens but it is annoying.” Several others also noted the difficulty in getting the laptop “up and running.”

Participants were also asked about ease of logging-on to the device. Overall, 37% said it was “Easy,” 63% rated it as “Neither difficult nor Easy,” and none of the survey respondents rated the log-on process as “Difficult” or “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, respondents reported using the laptop most frequently at home (67%), for an average of just under four hours per week. Thirty-three percent used it at the court house for less than one hour per week, compared to 22% who used it in the field for about 1.5 hours per week. One respondent stated, “I'm able to complete work at home that I had been unable to finish during work hours.”

Table 1 - Location and Hours of Laptop Use per Week

	Use of Laptop (n)	Average length of use per week
Field	22% (2)	1.50 Hours
Court	33% (3)	0.38 Hours
Home	67% (6)	3.75 Hours
Do not use at all	11% (1)	--

** Based on survey respondents who took the post survey n=9. Total number of testers n=11.*

The amount of time caseworkers spend in court suggests that it is an unexploited location for mobile work in most districts. Respondents in the Columbia County DSS spend on average of 2.5 days a month at court and wait on average 1.5 hours during a court visit. However, caseworkers may not be using the laptop in the court house or the field because of other competing interests that may limit the amount and type of work they can do. Open-ended survey responses did not account for this low level of use in court, although survey responses indicated that privacy may be an issue.

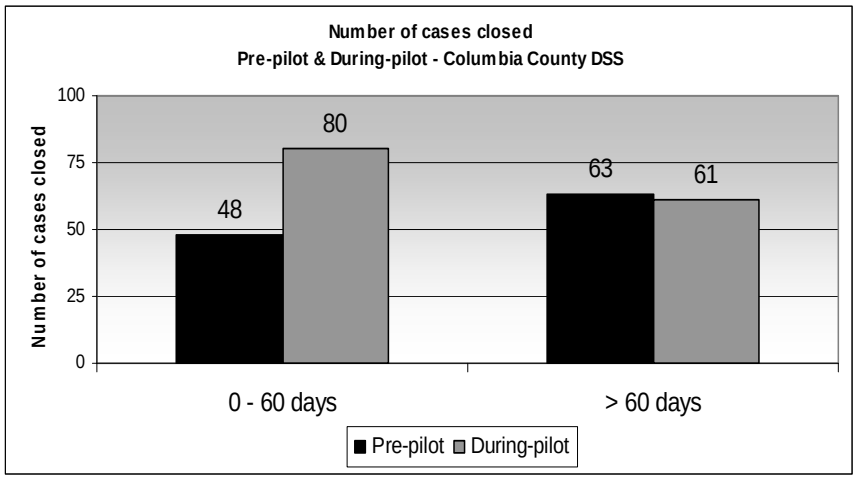
Productivity and Efficiency

This analysis uses central database data and survey responses to examine two core questions about possible technology impacts within the Columbia 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 48 in the pre-pilot period to 80 during the pilot period. The number of cases closed in over 60 days decreased slightly from 63 in the pre-pilot period to 61 during the pilot period. This is a marked increase in productivity; the total number of cases closed increased from 111 in the pre-pilot period to 141 during the test period – a 25% increase. It is important to not that in this county the total number of cases available to be worked on[2] increased from 321 in the pre-pilot period to 350 during the pilot period – a 9.0% increase.

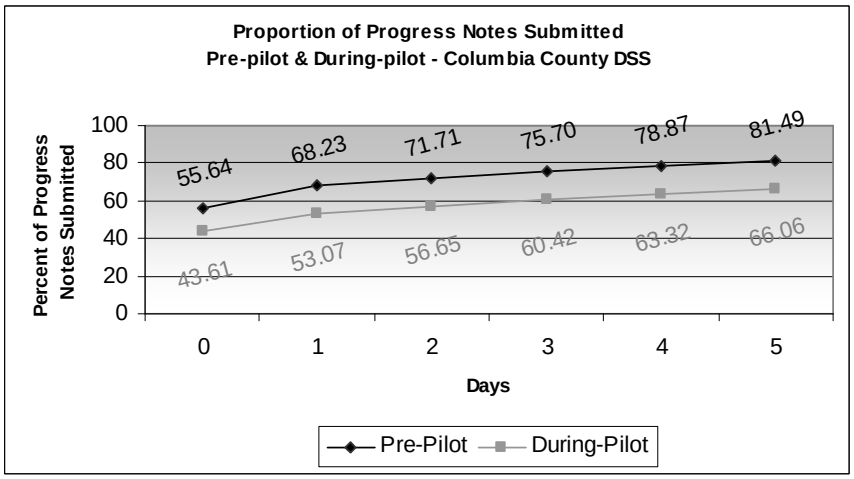
[2] The number of cases available to be worked on is the total of investigation stages that were open at any time during each of the pre-or pilot periods.

Figure 1 - Number of Columbia 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 second 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 80% of all notes were entered for the pre-pilot period, compared to 66% for the pilot. By this measure, timeliness decreased somewhat during the test period, but is still 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. A total of 11 devices were deployed, with docking stations as desktop replacements, along with wireless cards and network access. The change in equipment and related work processes may account for a decreased workflow for progress notes during the pilot period.

Some additional adjustments to deployment and work processes may be necessary to take full advantage of the laptops. The most frequent performance problems commented on by respondents were slow booting and connection when in the field and getting accustomed to cursor control on the laptops. 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% for accessing information. None reported a negative impact (Table 2 below). In addition, 13 % of the respondents 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 reported using the laptops in court, but survey data do not account for this reported low level of use in court.

Table 2 - Perceived Change Timeliness and Work Impacts – Columbia 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)

Some caseworkers reported problems with slow speed or erratic behavior of the system while connected to the central database. These kinds of problems could account for the low levels of reported improvement. That none of the respondents reported a negative impact on timeliness is somewhat inconsistent with the timeliness of documentation results obtained from the central database. It is possible that the reduction in timeliness seen in progress note entry was too small to be noticed by the caseworkers.

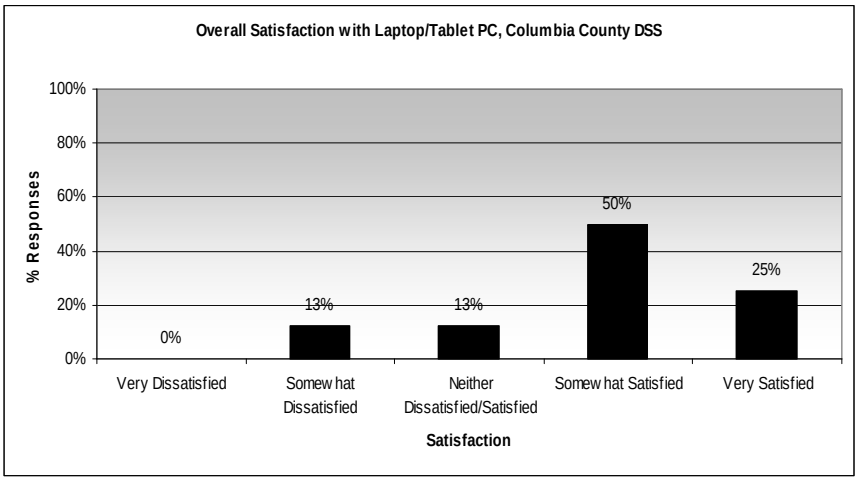
For many of these respondents, however, the value of the portability was significant. One caseworker reported, " Due to the constantly changing schedule of the CPS worker, along with the amount of work and high caseload, it's helpful to have the opportunity to complete work any chance you can get. The laptops are what allow this to happen."

Satisfaction

The overall level of satisfaction with the laptops was high. Figure 3 below shows that 75% of all respondents expressed being "Somewhat satisfied" or "Very satisfied," compared to 13% being

"Somewhat dissatisfied." An additional 13% of the question respondents indicated that they were "Neither dissatisfied/Satisfied."

Figure 3 - Overall User Satisfaction with the Laptops



** Based on survey respondents who took the post survey n = 9. Total number of testers n = 11.*

Laptop use was generally seen as contributing to lower job-related stress; three-quarters of respondents said that it did, while 25% said it did not. Those who reported a reduction in stress said that their ability to catch up on their work, just knowing the laptop is available, and having the flexibility of working on documentation outside of the office were reasons for stress reduction. One caseworker said, "I'm able to complete work at home that I had been unable to finish during work hours. Several others expressed this sentiment: "I like that I have the ability to do work while in the field." These types of comments are somewhat inconsistent with the reported low level of use while in the field and may point toward learning curve frustrations as a reason for low use while in the field (at this point in time).

Overall, 88% of respondents would recommend the use of laptops to colleagues, while 13% were unsure. The reasons mentioned for this positive recommendation included increased flexibility in ability to do work, the ability to use time more efficiently, the ability to do work outside of the office and increased access to information. One caseworker mentioned, "[The] laptop is extremely useful for entering notes at home, and in the field, as well as for finding names, addresses, phone numbers, and other vital information while in the field."

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Demonstration Project

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The *Demonstration Project in 23 Local Social ServiceDistricts* 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 (see Appendix C of the *Demonstration Project's Summary Report* for data collection tools and timeline). 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 A of *the Demonstration Project's Summary Report* 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.

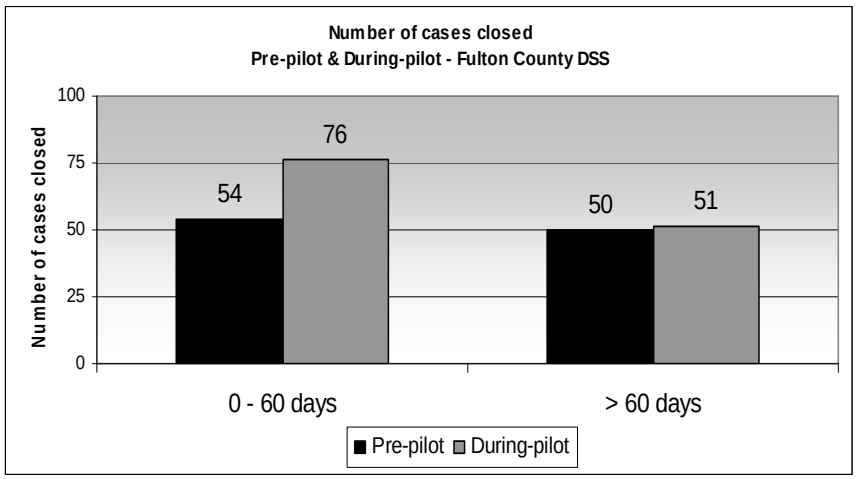
Caseworkers could work from home, but any work done after hours while at home was on a voluntary basis Overtime must be completed in the office. These policies may account for lower levels of use while at home.

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.

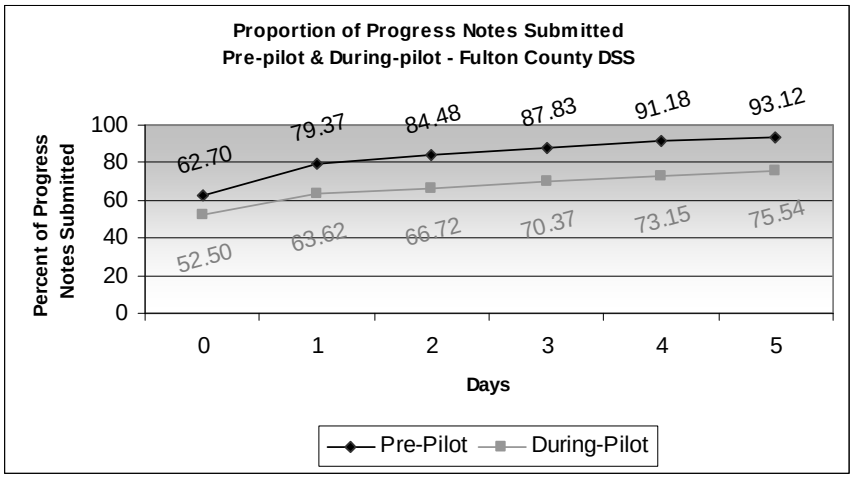
Figure 1 - Number of Fulton County DSS Cases Closed Pre-Pilot and During Pilot



[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)

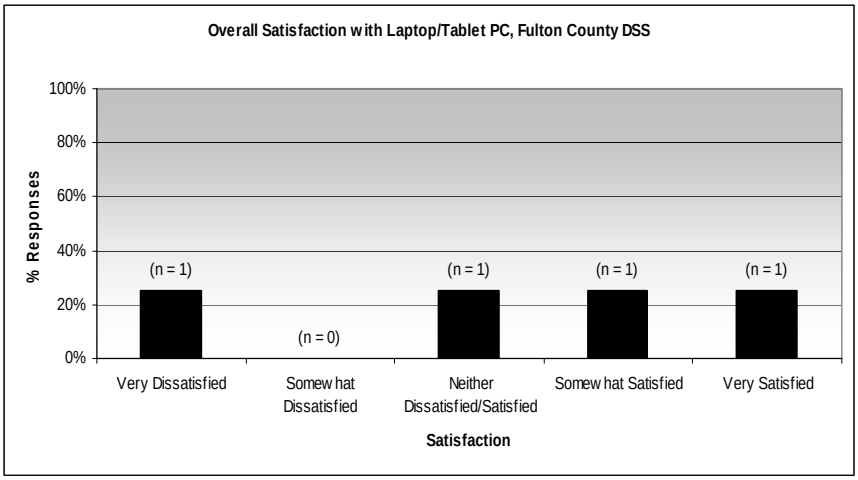
In addition, one respondent reported improvement in communicating with supervisors and two (25%) reported positive impacts in providing service to clients. Ability to work in court also improved for 38% of these respondents. Only three respondents (38%) reported using the laptops in court, but survey 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."

Center for Technology in Government

Assessing Mobile Technologies in Child Protective Services

Jefferson 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 Jefferson County DSS. Findings are based on data collected through online surveys, district questionnaires, and analysis of CONNECTIONS data (see Appendix C of the *Demonstration Project's Summary Report* for data collection tools and timeline). The field test lasted 68 days from 11/02/07 – 01/09/08.

District Deployment

Jefferson County DSS has 21 CPS staff responsible for child protective services. Jefferson County, a mostly rural county in Northern New York that houses Fort Drum military base, has approximately 117,000 residents. The county encompasses a large geographical areas, almost 1,300 square miles, making it the ninth largest county in the State. Jefferson County DSS participated in the demonstration project to learn if mobile technologies will allow caseworkers to use their time in court and in the field more effectively and eventually reduce overtime hours.

The Jefferson County DSS deployed 20 Dell Latitude D620 laptops to 18 caseworkers and two supervisors (see Appendix A of *the Demonstration Project's Summary Report* for device specifications). All caseworkers received their own device and docking stations with keyboards and monitors. Two laptops were deployed on 10/23/07 to two caseworkers and the remaining laptops were deployed on 11/2/07. All 20 laptops were deployed with district-provided external Verizon broadband cards. 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. Each participant received individual training and written security procedures.

Finally, one policy changed as a result of the introduction of mobile technologies. During the pilot period, it was decided that participants were not allowed to work overtime or receive compensation for work completed with the laptop after regular work hours while at home.

Characteristics of Respondents

A total of 18 CPS caseworkers participated in this study: 16 took the baseline survey (response rate 89%); 13 took the post-pilot survey (response rate 72%); and 12 took both the baseline and post-pilot surveys (response rate 67%).

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 Jefferson County DSS respondents[1] were moderately experienced in CPS field work with an average of 5.8 years of experience; 56% reported CPS experience of three years or less. Respondents were working slightly more overtime hours during the pilot period. Ninety-one percent of respondents reported working five hours or less in a week in the pre-pilot period and the proportion decreased to 64% in the pilot period. Therefore, the average overtime hours increased from 3.1 hours in the pre-pilot period to 4.3 hours in the pilot period. Seventy-seven percent of respondents reported a typical court waiting time of one and a half hours or less and 73% reported on average spending one 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

Jefferson County DSS respondents reported using the laptop during normal work hours, after work hours, and when working overtime. Jefferson 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

[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.

court-related activities. Case documentation was the most frequent use, including inputting and updating notes, completing safety assessments, and email. Overall, 82% of the respondents reported using the laptop to access various forms of information from government Web sites at least once a day. Similarly, approximately 91% of respondents accessed email once a day or more, while 55% of respondents reported using their laptop at least once a day or more to access map directions.
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. It was thought that mobile access would decrease the number of times caseworkers needed to return to the office from the field, however, respondents reported returning to the office to access case information more frequently during the pilot period. Eighty-three percent reported returning to the office once a week or less to access case information in the pre-pilot period, which went down to 55 percent in the pilot period. The respondents were in the field on average less frequently during the pilot than in the pre-pilot period (2.27 and 3.12 average field days, respectively).

Jefferson County DSS had district-provided external broadband cards during the pilot period. Some respondents did use personal Internet Service Providers (ISPs) while at home. Survey respondents reported obstacles to mobile use, including the inability to establish a connection, slow speed or unreliable connections, in all locations. One respondent stated, "[It's] frustrating... I'm sure it's the guy behind the keyboard but the laptop certainly intensifies the learning curve delays due to the technical stuff needed to effectively use the equipment." The performance problem most frequently mentioned in open-ended comments was the slow speed of the connection. One respondent pointed out the need for additional training to overcome connection problems using their home ISP.

Participants were also asked about ease of logging-on to the device. Overall, 36% said it was "Easy," 36% rated it as "Neither difficult nor Easy," and another 27% of respondents rated the log-on process as "Difficult" to "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, respondents reported using the laptop most frequently at home (62%), for an average of just over five hours per week, compared to other locations (15% in the court house and field for between one-half hour and 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	15% (2)	0.09 Hours
Court	15% (2)	1.73 Hours
Home	62% (8)	5.27 Hours
Do not use at all	8% (1)	--

** Based on survey respondents who took the post survey n=13. Total number of testers n=18.*

The amount of time caseworkers spend in court suggests that it is an unexploited location for mobile work in most districts. However, respondents in Jefferson County DSS only spend on average 1.5 days a month at court and wait on average 1.5 hours during a court visit. Therefore, caseworkers may not be using the laptop in the court house or the field because of other competing interests that may limit the amount and type of work they can do. Many stated in open-ended survey

comments that they do not connect with the laptop while in the court house, and have a lot of difficulty at home. As mentioned before, connectivity problems have influenced their desire to use the laptop in the field. One respondent said, “In my opinion, the major drawback to using the laptops for field work is the delay in getting up and running. We need something smaller, lighter, and with near instant-on capabilities. Also, I can effectively use a quickpad in the field while standing up. I can’t do that with a laptop.” Another suggested, “I do like being able to work on the CONNECTIONS system from home every once in a while. I was typing notes at home on the quickpad before the laptops came along, so I don't see any advantage to bringing the cumbersome laptop home just to type progress notes.”

Caseworkers cannot work from home for overtime reasons, but many find value in working extra hours from home voluntarily. One caseworker described this experience: “We were excited about the laptops, but they did not really make a big difference when taking it home to work on. Besides, they [management] could not decide if we were to get paid for the work done at home.” However, several respondents stated that working from home was somewhat more efficient because it increased their flexibility and the time they have to do different tasks. One respondent stated, “I live quite a distance from work and do not want to drive in on the weekends to catch-up on work. It's been great to be able to bring my laptop home and catch-up on work. It prevents me from getting behind on my cases.”

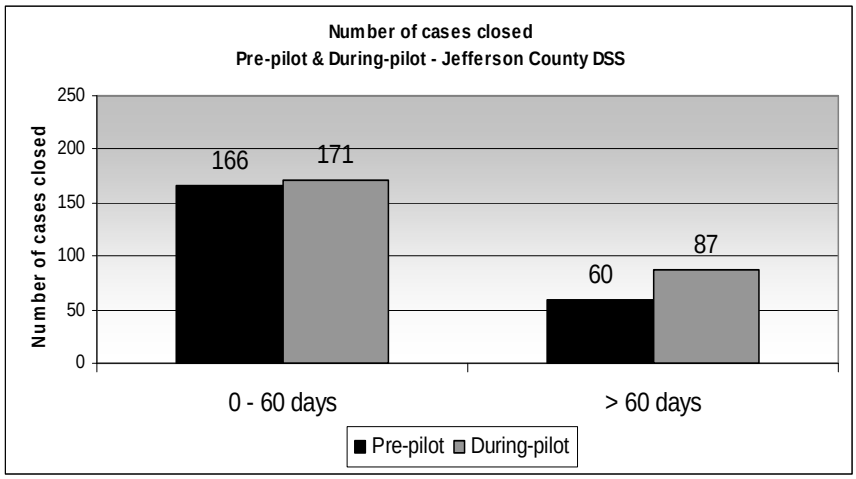
Productivity and Efficiency

This analysis uses central database data and survey responses to examine two core questions about possible technology impacts within the Jefferson 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 slightly during the test period, up from 166 in the pre-pilot period to171 during the pilot period. The number of cases closed in over 60 days increased somewhat from 60 in the pre-pilot period to 87 during the pilot period. This is a marked increase in productivity; the total number of cases closed increased from 226 in the pre-pilot period to 258 during the pilot period—a 14% increase. It is important to note that in this county the total number of cases available to be worked on[2] decreased from 415 in the pre-pilot period to 322 during the pilot period – a 22.4% decrease.

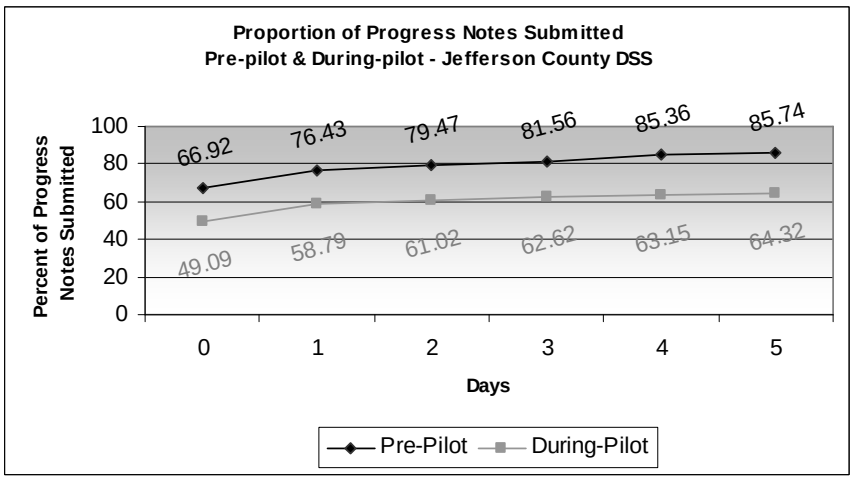
[2] The number of cases available to be worked on is the total of investigation stages that were open at any time during each of the pre-or pilot periods.

Figure 1 - Number of Jefferson 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 second 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 85% of all notes were entered for the pre-pilot period, compared to 64% for the pilot. By this measure, timeliness decreased 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 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 Jefferson County DSS, a total of 20 laptops were deployed with docking stations, as replacements for desktops, plus 19 wireless access cards were given out. Many respondents reported that because of slow connection speeds the laptops were used most of the time in the office connected to their docking stations. One caseworker noted, “CONNECTIONS is hard to connect to when at home. Microsoft Word has not responded and locked up while typing notes at home and made the process frustrating and took over 2 hours when it should have only taken about 30 minutes.”

The change in equipment and related work processes may account for a decreased workflow of progress notes during the test 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. 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."

Many respondents perceived the use of the laptop to be about the same with respect to the ability to do work in court, communication with supervisors, and service to clients. Over one-third of the respondents reported that using the laptops improved their work in terms of timeliness and for accessing information. None reported a negative impact (Table 2 below).

Table 2 - Perceived Change Timeliness and Work Impacts – Jefferson 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)	64% (7)	27% (3)	9% (1)
Ability to do work in court	0% (0)	0% (0)	82% (9)	9% (1)	9% (1)
Ability to access case information	0% (0)	0% (0)	64% (7)	27% (3)	9% (1)
Communication with supervisors	0% (0)	0% (0)	82% (9)	9% (1)	9% (1)
Service to clients	0% (0)	0% (0)	91% (10)	9% (1)	0% (0)

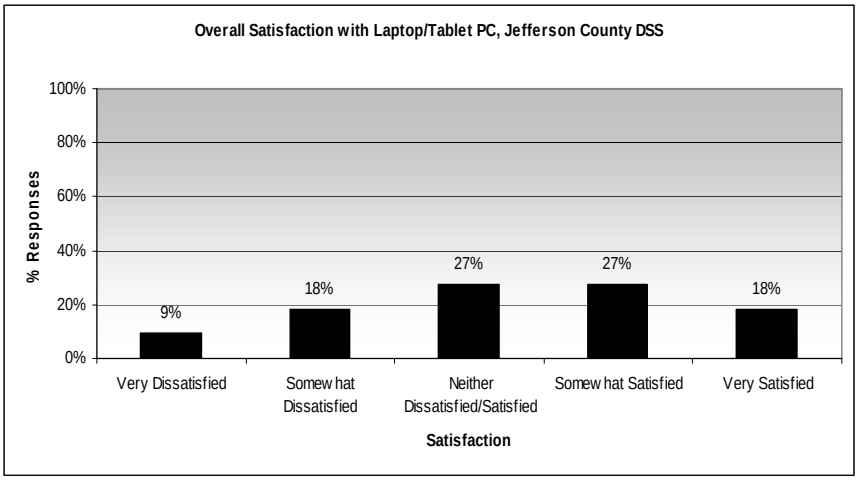
In addition, two of the survey respondents (18 %) reported improvement in communicating with supervisors and one (9%) reported positive impacts in providing service to clients. Ability to work in court also improved for two respondents (18%).

That none of the respondents reported a negative impact on timeliness is somewhat inconsistent with the timeliness of documentation results obtained from the central database. 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 45% of all respondents expressed being "Somewhat satisfied" or "Very satisfied," compared to 27% being "Somewhat dissatisfied" or "Very dissatisfied." An additional 27% indicated that they were "Neither satisfied/Dissatisfied."

Figure 3 - Overall User Satisfaction with the Laptops



** Based on survey respondents who took the post survey n = 13. Total number of testers n = 18. May not add to 100% due to rounding.*

It could also be the case that having a laptop produced higher expectations for use at court, in the field, and at home, and these expectations that were not wholly met. One respondent reported, "I am not at all thrilled with needing to work at home in the first place. In the little extra time I do have available to get something done there, I certainly don't feel like wasting the majority of it simply trying to establish a connection and then, dealing with the remarkable delay thereafter." However, others saw these problems as early glitches stating, "Once the kinks are worked out, this will be great. Everything new needs to have fine tuning."

Laptop use generally was not seen as contributing to lower job-related stress; 58% of respondents said that it did not reduce stress levels, while 41% said it did. Those who reported a reduction in stress attributed this to increased flexibility and the ability to work on documentation outside of the office, the ability to catch up on their work, and just knowing the laptop was available. Several respondents did not feel as though the laptops reduced stress and attributed this to connectivity issues and work-life balance issues. One respondent said, "Although my laptop has the potential to reduce my stress level, issues with computer connections from home have led to increased frustration and affected my decision to use the laptop in the field." Another stated, "all it [the laptop] does is imply that I should be doing this job at all hours of the day."

Overall, 46% of respondents would recommend the use of laptops to colleagues. One respondent stated, "I would recommend using the laptop for CPS work to colleagues because it allows workers to access information either in the field or at home." Eighteen percent reported that they would not recommend use of the laptop to colleagues and another 36% of respondents were unsure whether or not they would recommend the use of the laptops. One respondent noted, "It depends on what they [the colleague] is looking for – I mean if they have time in the field or at home – then it would be fine. But for me, in this area, it just doesn't work. Keeping it on my desk works just fine."

Center for Technology in Government

Assessing Mobile Technologies in Child Protective Services

Nassau 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 Nassau County DSS. Findings are based on data collected through online surveys, teleconferences, district questionnaires, and analysis of CONNECTIONS data (see Appendix C of the *Demonstration Project's Summary Report* for data collection tools and timeline). The field test lasted 54 days from 11/16/07- 1/9/08.

District Deployment

Nassau County DSS has 79 full time CPS staff and 39 part-time staff (on evenings and weekends) responsible for child protective services. Nassau County is a mix of suburban and urban areas, encompassing approximately 287 square miles of Long Island, and has approximately 1.3 million residents. The Nassau County DSS participated in the demonstration project to learn if mobile technologies can help staff use time more efficiently and effectively by accessing and entering data while in the field. Currently they use a dial-up connection that is slow.

The Nassau County DSS deployed 52 Dell Latitude D620 laptops and 3 HP Compaq tc4400 Tablets to 54 CPS caseworkers and one manager on 11/16/07 (see Appendix A of *the Demonstration Project's Summary Report* for device specifications). All full-time caseworkers received their own device and docking stations with keyboards and monitors. No external broadband cards were provided for any of the devices during the pilot period. The cards were ordered, but not received during the pilot period. Therefore, the only 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. Each person attended a one-hour group training session on how to use the laptop, security precautions, and help desk instructions; each person also received a copy of the OCFS-generated wireless network instruction manual.

Finally, no policies were changed to support the introduction of mobile technologies before or during the pilot period. The guidelines or policies for overtime while using the laptop at home after regular work hours were not communicated during the pilot period.

Characteristics of Respondents

A total of 53 CPS caseworkers participated in this study: 31 took the baseline survey (response rate 58%); 24 took the post-pilot survey (response rate 45%); and 19 took both the baseline and post-pilot surveys (response rate 36%).

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 Nassau County DSS respondents[1] were relatively new to CPS field work, with an average of 3.8 years of experience; 55% reported CPS experience of three years or less. Respondents were working roughly the same amount of overtime hours during the pilot period as in the pre-pilot period. The percentage of respondents reporting overtime of five hours or less in a week increased from 79% in the pre-pilot period to 90% in the pilot period. However, the average overtime hours only slightly increased from 3.8 hours in the pre-pilot period to 4.1 hours in the pilot period. About 60% of respondents reported a typical court waiting time of four hours or less and 76% reported spending on average one 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.

[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

Nassau County DSS respondents reported using the laptop during normal work hours and after work hours. Nassau 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. Other work included reading and reviewing case histories, doing person searches, checking client histories, and email. Sixty-four percent of respondents reported using the laptop to access various forms of information from government Web sites at least once a day. Similarly, almost all (96%) of the respondents accessed email at least once a day or more, while 78% of respondents reported using their laptop at least once a day or more to access map directions.

The extent to which caseworkers could 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 frequency during the pilot period. Seventy-two percent reported returning to the office once a week or less to access case information during the test period, compared to 44% in the pre-pilot period. The respondents were in the field approximately the same number of days per week (average 3 days) during the pre- and pilot periods.

A few participants commented on some of the often overlooked changes in mobility and communication patterns. For example, one respondent described the following situation, "If there is a court report due the following morning and I am in the field the day before on that case, I can always put in the notes and write the report instead of skipping the report all together and then having an adjourned date." Another wrote, "When I am away from the office I am able to respond to e-mail and do additional work at home, which gives me more time during the next work day to do other important tasks."

Nassau County DSS did not have district-provided external broadband cards during the pilot period and did not have connection at the court house. Participants were instructed to use locations such as the library, and to avoid public wireless hotspots "like Starbucks" because of confidentiality and data issues. Some did use their home Internet Service Providers (ISPs) while at home.

The performance problem most frequently mentioned in open-ended comments was the slow speed of the connection while in the field and at home. Using the docking stations presented some initial challenges and adjustment; several respondents reported obstacles to mobile use such as the inability to establish a connection and unreliable connections while in the field. Many also noted these connection problems at home. One respondent described the difficulty attributed to relying on 'hot spots,' stating "It was really hard to get an Internet connection even if I had one prior at the same location with the same connection type." Small blocks of time were an issue for some trying to use it in the field. One caseworker stated, "It helps when you have some more time to dedicate to typing, but often I do not have such gaps in between visits. Several others see the potential use if connected. One respondent stated, "If we had a wireless card we could type our notes while in the field right into CONNECTIONS. But at the moment, I have to type it in Word while in the field." One respondent pointed out the need for additional training to overcome connection problems while using a home ISP.

Participants were also asked about ease of logging-on to the device. Overall, 37% said it was "Easy," 50% rated it as "Neither difficult nor Easy," and 13% of respondents rated the log-on process as "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, respondents reported using the laptop most frequently at home (50%), for an average of over three and half hours per week. Some reported using the laptop in the field (25%) for an average of two hours per week and one person used it at court.

Table 1 - Location and Hours of Laptop Use per Week

	Use of Laptop (n)	Average length of use per week
Field	25% (6)	2.33 Hours
Court	4% (1)	0.45 Hours
Home	50% (12)	3.61 Hours
Do not use at all	0% (0)	--

** Based on survey respondents who took the post survey n=24. Total number of testers n=53.*

The amount of time caseworkers spend in court suggests that it is an unexploited location for mobile work in many districts. Respondents in Nassau County DSS spend on average one day a month at court and wait on average just under four 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 – for example, there is currently no connectivity available. Teleconference respondents stated that the court house is also generally crowded and that they prefer not to use their laptops there. They mentioned there is a liaison room, but CPS staff cannot use the liaison office or the computers in the office.

There is currently no policy in place concerning caseworkers' ability to work from home using the laptop – although several reported using the laptop at home. On respondent said that she uses it all the time at home "even though we are not supposed to," while another said she would not take it home at all because that is "time with family."

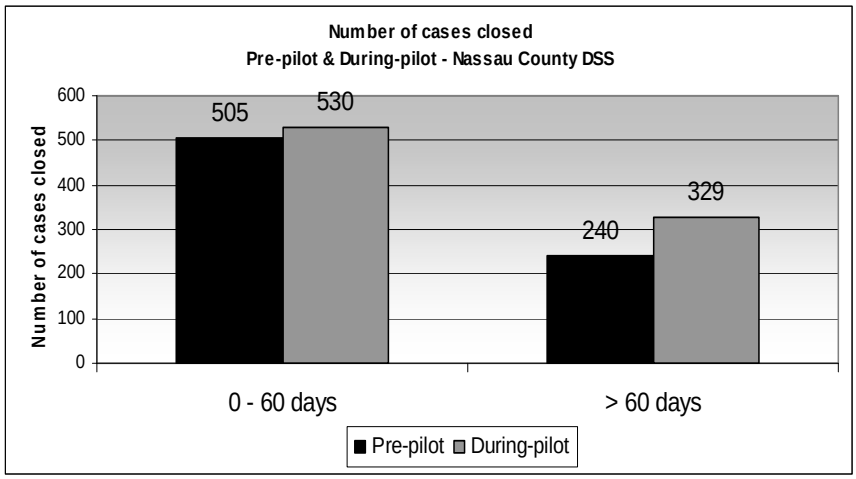
Productivity and Efficiency

This analysis uses central database data and survey responses to examine two core questions about possible technology impacts within the Nassau 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 slightly during the test period, up from 505 in the pre-pilot period to 530 during the pilot period. The number of cases closed in over 60 days increased somewhat from 240 in the pre-pilot period to 329 in the pilot period. This is a

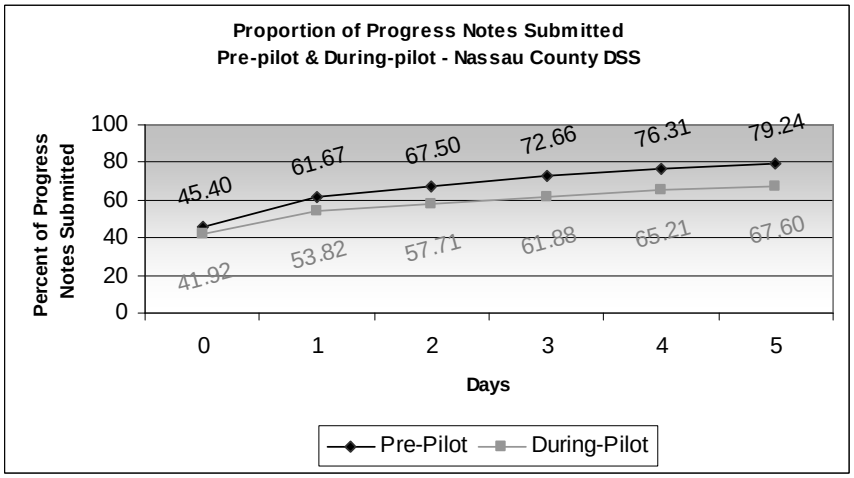
marked increase in productivity; the total number of cases closed increased from 745 in the pre-pilot period to 859 during the pilot period—a 15 % increase. It is important to note that in this county the total number of cases available to be worked on[2] decreased from 1,644 in the pre-pilot period to 1,568 during the pilot period – a 4.6% decrease.

Figure 1 - Number of Nassau 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 second 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, close to 80 % of all notes were entered for the pre-pilot period, compared to 67% for the pilot. By this measure, timeliness decreased during the pilot period, but is high overall.

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



[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.

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 the Nassau County DSS, a total of 52 laptops with docking stations were deployed as desktop replacements, along with three tablet PCs. Wireless internet access cards were not deployed during the test period. Several survey respondents who used the laptops at various wireless access points reported difficulties logging-on and maintaining a connection. Others were not able to use the laptops in the field because they lacked a wireless access card. Several respondents reported that they were instructed not to use the laptops in public places, with 'hot spots,' for network security reasons.

These changes in equipment and related work processes may account for a decreased workflow of progress notes during the test period. 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 and difficulty of network access. Typical problems identified by respondents included: "Very slow connecting; sometimes difficult to log-on to VPN; problems with CONNECTIONS; and finding a location to connect computer." 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."

Over one-third of the caseworkers reported that the use of laptops improved their work in terms of timeliness of documentation and 50% for accessing information. Two respondents reported a negative impact on timeliness and working in court. One other reported a negative impact in communication with supervisors and general service to clients (Table 2 below).

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

	Much worse (n)	Somewhat worse (n)	About the same (n)	Somewhat better (n)	Much better (n)
Timeliness of documentation	10%(2)	0%(0)	52%(11)	24%(5)	14%(3)
Ability to do work in court	6%(1)	6%(1)	78%(14)	0%(0)	11%(2)
Ability to access case information	0%(0)	0%(0)	50%(10)	30%(6)	20%(4)
Communication with supervisors	5%(1)	0%(0)	70%(14)	20%(4)	5%(1)
Service to clients	5%(1)	0%(0)	71%(15)	10%(2)	14%(3)

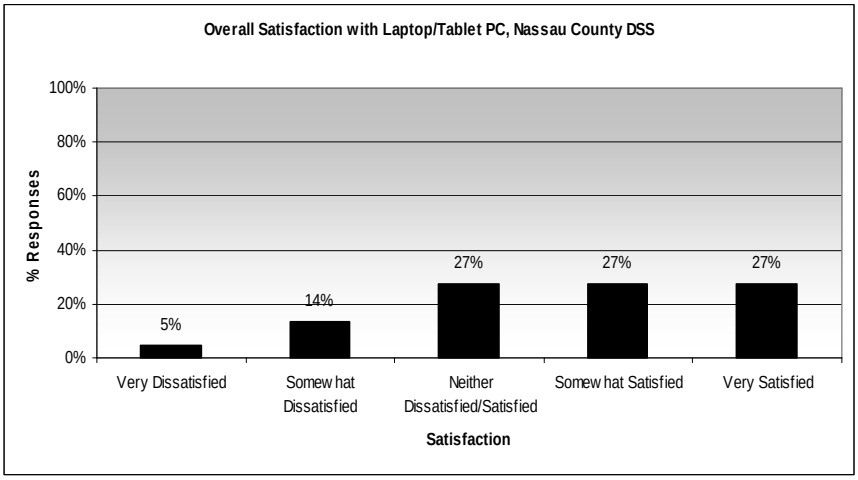
On the positive side, about one-fourth of the respondents (18 %) reported improvement in communicating with supervisors and service to clients, and two (11%) reported positive impacts in ability to work in court. However, most respondents were not able to connect or preferred not to use the laptops in court.

That few reported a negative impact on timeliness and other work activities is somewhat inconsistent with the timeliness of documentation results obtained from the central database. 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 54% of respondents expressed being "Somewhat satisfied" or "Very satisfied," compared to 19% being "Somewhat dissatisfied" or "Very dissatisfied." Additionally, 27% indicated that they were "Neither dissatisfied/Satisfied."

Figure 3 - Overall User Satisfaction with the Laptops



** Based on survey respondents who took the post survey n = 24. Total number of testers n = 53.*

The lack of a district-provided wireless connection was the most substantial difficulty reported by participants in teleconferences and survey responses. It could be that having a laptop produced higher expectations for use at court and in the field and these expectations were not wholly met. One respondent reported, "It will be better once we get the air card to use. At home I use dial up, but out in the field I have not been able to get onto CONNECTIONS."

Laptop use generally was not seen as contributing to lower job-related stress; roughly 55% of question respondents said that it did not reduce stress, while 46% said it did. Those who reported it did not lower job-related stress attributed this to the lack of wireless connectivity and being responsible for the device. One respondent stated, "It adds to the stress level. I am responsible for this laptop if I take it in the field. It is heavy and cannot be carried around easily. If it is left in my car and the car is broken into, the laptop is my responsibility. Wireless connections do not abound and I do not feel comfortable using my home network to access state applications. Court connections do not work. It is an inconvenience." Those who reported a reduction in stress attributed this to their ability to catch up on their work, having the flexibility of working on documentation outside of the office, and increased access to information in CONNECTIONS.

Overall, 64% of respondents would recommend the use of laptops to colleagues, compared to 14% who reported they would not. The reasons mentioned for this positive recommendation included increased flexibility in the ability to do work while out of the office, the ability to use time more efficiently, increased access to information, and a reduction in interruptions when used at home. Many stated that their recommendations were contingent upon receiving wireless connectivity. One respondent pointed out, “When we have the wireless card we will be able to have access anywhere and that will make work much easier.”

Center for Technology in Government

Assessing Mobile Technologies in Child Protective Services

Niagara 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 Niagara County DSS. Findings are based on data collected through online surveys, teleconferences, district questionnaires, and analysis of CONNECTIONS data (see Appendix C of the *Demonstration Project's Summary Report* for data collection tools and timeline). The field test lasted 23 days from 12/17/07 -1/9/08.

District Deployment

Niagara County DSS has 34 CPS staff responsible for child protective services. Niagara County is a suburban and urban area with three major cities, 12 towns, and four villages. Approximately half of the 210,000 residents are situated in the city centers. The Niagara County DSS participated in the demonstration project to learn if mobile technologies can make better use of caseworkers' time while in the field in order to help reduce the number of open cases and overdue safety assessments.

The Niagara County DSS deployed 35 Dell Latitude D620 laptops and four HP Compaq tc4400 tablets to 28 caseworkers, four supervisors, and one manager (see Appendix A of *the Demonstration Project's Summary Report* for device specifications). Devices were deployed in three installments (11/21/07, 12/13/07, 12/20/07). Each caseworker and supervisor were given their own device with docking stations including keyboards and monitors. No external broadband connection cards were procured or provided for any of the devices during the pilot period and while their three court houses are fully wireless, participants were unable to connect in the court house (Niagara County DSS technical staff were looking into this problem). Therefore, the only 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.

Finally, no policies were changed to support the introduction of mobile technologies before or during the pilot period. In both periods, participants were not allowed to work from home unless they were on-call.

Characteristics of Respondents

A total of 28 caseworkers participated in this study: 13 took the baseline survey (response rate 46%); 13 took the post-pilot survey (response rate 46%); and nine took both the baseline and post-pilot surveys (response rate 32%).

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 Niagara County DSS respondents[1] were experienced in CPS field work, with an average of 9.2 years of experience; 58% reported CPS experience of five years or more. Respondents were working slightly more overtime hours during the pilot period. The percentage of respondents reporting overtime of one hour or less in a week decreased from 89% in the pre-pilot period to 57% in the pilot period. As a result, the average overtime hours slightly increased from 0.8 hours in the pre-pilot period to 1.1 hours in the pilot period. Eighty-four percent of respondents reported a typical court waiting time of three hours or less and 83% 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) 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

Niagara County DSS respondents reported using the laptop during normal work hours, after work hours, and on-call. Niagara 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, reading and reviewing case histories, doing person searches, checking client histories, email, and word processing. Approximately 64% of the respondents reported using the laptop to access various forms of information from government Web sites at least once a day. Seventy-three percent of respondents accessed email at least once a day or more, while 73% of respondents reported using their laptop at least once a day or more to access map directions.
The extent to which caseworkers could access information while out of the office has a big influence on what kinds of mobile work are possible. Very few of the Niagara County DSS participants responded to the questions regarding changes in accessing information. However, for those that did, laptop use did not change (at this point in time) the frequency of respondents returning to the office during the work day to access information. Four respondents reported returning to the office four or more times a week to access case information in the pre-pilot and during the pilot period.

Several respondents noted that work practices remained the same. For example, one respondent describe their situation, "We still have to share cell phones and often have to return to the office to ask questions or prepare notes." Several respondents did recognize the potential value of the portable PCs, one commented, "While in the field and unable to access office computer (CONNECTIONS) the laptop ideally will be invaluable to casework (especially for fieldwork while on pager)." The respondents were in the field approximately the same number of days per week (average 3 days) during the pre- and during-pilot periods.

Niagara County DSS did not have district-provided wireless cards during the pilot period. Some did use their home Internet Service Providers (ISPs) while at home. Teleconference respondents noted that their area does not have a lot of 'hot spots' and that they are generally in tourist areas and not in the areas where they work. The three court houses are fully wireless, but there was difficulty establishing a connection to CONNECTIONS (as mentioned, the problem is being looked into). Those respondents who were able to connect reported encountering some obstacles to mobile use such as the inability to establish a connection, slow speed, or unreliable connections in all locations. One respondent wrote, "We have not been able to access CONNECTIONS in the field, we do not have aircards. In addition, there are issues accessing connections where WiFi is available. It must be an issue with the settings." Several noted that the time it takes to boot-up the computer is also very slow.

Participants were also asked about ease of logging-on to the device. Overall, 40% of survey respondents rated the log-on process as "Difficult" to "Extremely Difficult," 30% rated it as "Easy," and another 30% said it was "Neither difficult nor Easy." A few respondents commented on the need for training on log-on tips for 'hot spots' and how to overcome connection problems while using personal (home) ISPs.

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, two respondents reported using the laptop at home for an average of less than one hour per week. One person tried to use it in the field for on less than one hour a week.

Table 1 - Location and Hours of Laptop Use per Week

	Use of Laptop (n)	Average length of use per week
Field	7% (1)	0.38 Hours
Court	0% (0)	0.29 Hours
Home	15% (2)	1.13 Hours
Do not use at all	15% (2)	--

** Based on survey respondents who took the post survey n=13. Total number of testers n=28.*

Respondents expressed the importance of being connected and emphasized that having constant connectivity would enhance the benefits of using a laptop. One respondent stated, "The laptops are just as easy to work with as a desktop PC. Once wireless internet access is more available it will provide the option of doing casework when out of the office." Another suggested, "The future hope of being able to access work sites at home, on the road, and at court is exciting. This initial period when we cannot yet connect out of the office allows me to become familiar with the equipment."

The amount of time caseworkers spend in court suggests that it is an unexploited location for mobile work in many districts. Respondents in Niagara County DSS spend on average two days a month at court and wait about two hours 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. Also, as mentioned earlier, participants reported difficulty connecting while at court and this could be limiting the opportunities to use it. Several described the court houses as crowded saying, "We can not establish a connection at court. We are required to stay in the hallway outside of the court room. Often times there are not enough seats and we must stand with our clients."

Caseworkers cannot work from home unless they are on-call. Teleconference respondents stated that on-call workers generally work from the office. Many noted that they have not had a sufficient amount of time to learn how to use the laptop and this may be impacting the amount of use. One respondent said, "Having only had the laptop less than a month, I still need to make some changes in the way I do CONNECTIONS work on a laptop. Also, I need to become more comfortable in taking the laptop in the field with me."

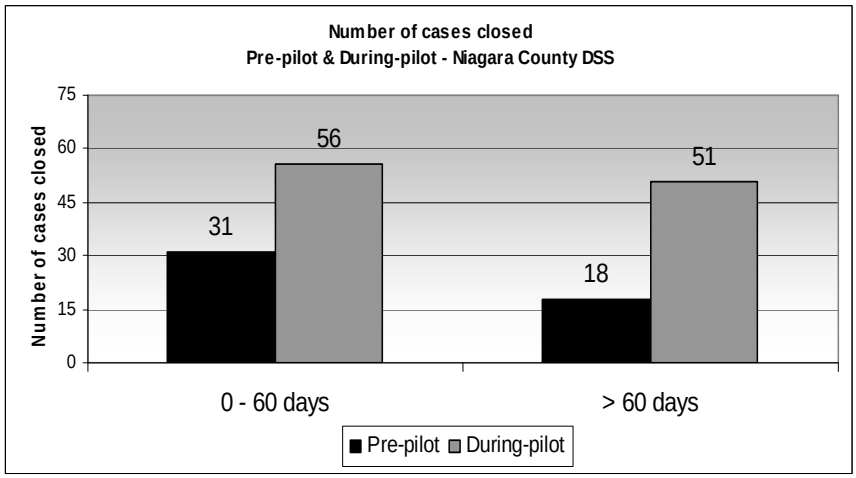
Productivity and Efficiency

This analysis uses central database data and survey responses to examine two core questions about possible technology impacts within the Niagara 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,

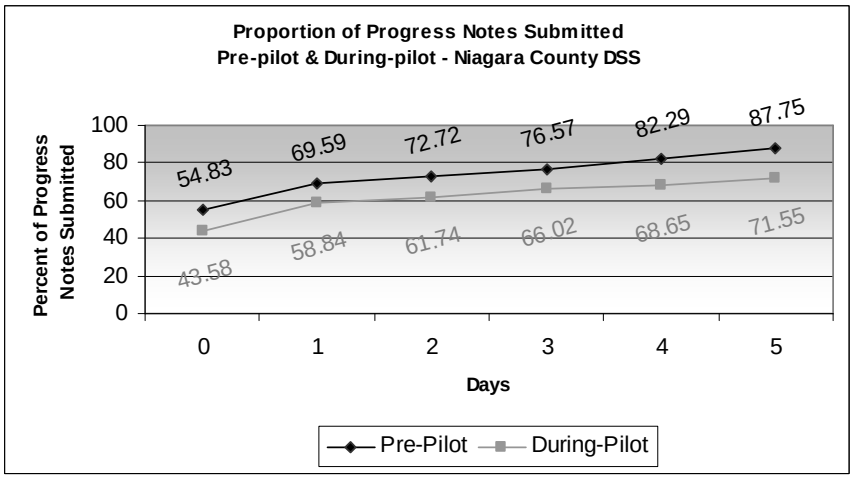
up from 31 in the pre-test period to 56 during the test period. The number of cases closed in over 60 days increased markedly from 18 in the pre-pilot period to 51 in the pilot period. This is a marked increase in productivity; the total number of cases closed increased from 49 in the pre-pilot period to 107 during the pilot period – over a 100% increase. It is important to note that in this county the total number of cases available to be worked on[2] increased from 417 in the pre-pilot period to 446 during the pilot period – a 7.0% increase.

Figure 1 - Number of Niagara 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 second day following the event. But contrary to expectations, the proportion of progress notes entered in each time period for the pilot is marginally, but consistently below that of the pre-pilot period. By the fifth day, close to 90% of all notes were entered for the pre-pilot period, compared to just over 70% for the pilot. By this measure, timeliness decreased slightly during the pilot period, but is high overall.

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



[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.

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 Niagara County DSS, a total of 35 laptops with docking stations were deployed as desktop replacements, along with four tablet PCs. Some also reported lack of suitable space in court to do confidential work. In this county, workers were not allowed overtime for work on the laptops at home unless they were on-call. The most frequent performance problems commented on by respondents were inability to access the network outside the office due to the lack of a wireless card. They also mentioned slow connection speed. A mix of issues interfered with effective use for at least one respondent, who reported:

> 1) fear of losing, having stolen, breaking the laptop results in not taking the laptop in the field with me; 2) having the time to connect/ and type notes while in the field. It's cold here now, so sitting in my car typing notes in the laptop isn't my first choice. In other locations that have Wifi, I feel that it would be viewed as abusing county time; and 3) privacy issues.

These changes in equipment and related work processes can account for a decreased workflow of progress notes during the test period. 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 the Niagara County DSS participants responded to the questions regarding work impacts of laptop use. The great majority of these reported no impact. Only one or two respondents reported positive impacts in the work areas shown in Table 2 below. Two reported improvements in ability to work in court. Others reported some positive impact in communication with supervisors and general service to clients. Two respondents reported a negative impact on timeliness of documentation.

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

	Much worse (n)	Somewhat worse (n)	About the same (n)	Somewhat better (n)	Much better (n)
Timeliness of documentation	0%(0)	20%(2)	70%(7)	10%(1)	0%(0)
Ability to do work in court	0%(0)	0%(0)	80%(8)	20%(2)	0%(0)
Ability to access case information	0%(0)	0%(0)	80%(8)	10%(1)	10%(1)
Communication with supervisors	0%(0)	0%(0)	90%(9)	10%(1)	0%(0)
Service to clients	0%(0)	0%(0)	80%(8)	10%(1)	10%(1)

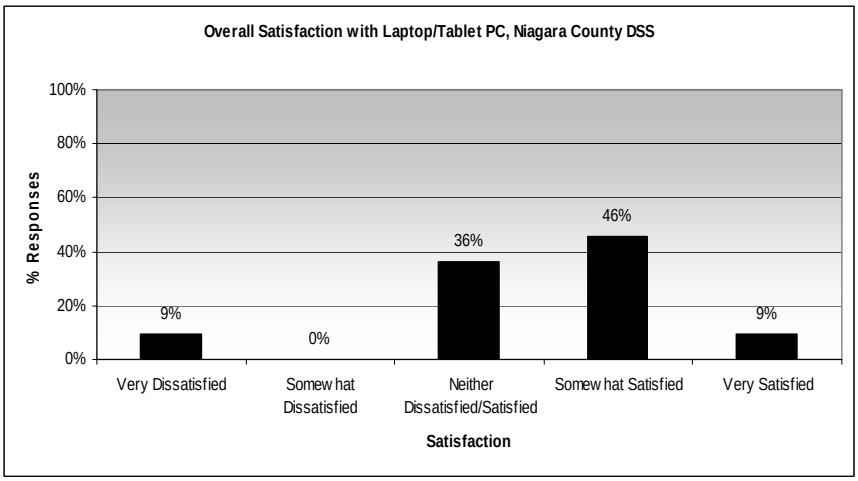
That few reported a negative impact on timeliness and other work activities is somewhat inconsistent with the timeliness of documentation results obtained from the central database. It is

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 55% of respondents expressed being "Somewhat satisfied" or "Very satisfied," compared to 9% being "Very dissatisfied." Additionally, 36% indicated that they were "Neither dissatisfied/Satisfied."

Figure 3 - Overall User Satisfaction with the Laptops



** Based on survey respondents who took the post survey n =13. Total number of testers n = 28.*

The lack of a district-provided wireless connection was the most substantial difficulty reported by respondents in teleconferences and survey responses. Additionally, issues related to the lack of formal training and technical difficulties, such as lengthy boot-up times and trouble finding locations to establish a connection may be contributing to the overall levels of satisfaction.

Laptop use generally was not seen as contributing to lower job-related stress; roughly 73% of respondents said that it did not reduce stress, while 27% said it did. Those respondents who did not feel the laptops contributed to stress reduction attributed this to the newness of the technology and the lack of wireless connectivity outside of the office. Those who reported a reduction in stress attributed this to having the flexibility of working on documentation outside of the office.

Overall, 46% of respondents would recommend the use of laptops to colleagues; however an equal percentage were unsure. Additionally, 9% of respondents indicated that they would not recommend the use of laptops.

Center for Technology in Government

Assessing Mobile Technologies in Child Protective Services

Onondaga 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 Onondaga County DSS. Findings are based on data collected through online surveys, teleconferences, district questionnaires, and analysis of CONNECTIONS data (see Appendix C of the *Demonstration Project's Summary Report* for data collection tools and timeline). The field test lasted 51 days from 11/19/07-1/9/08.

District Deployment

Onondaga County DSS has 47 CPS staff responsible for child protective services. Onondaga County is located in Central New York and has approximately 450,000 residents. The Onondaga County DSS participated in the demonstration project to learn if mobile technologies can create an environment where caseworkers can stay in the field while completing documentation and better utilize existing wait times (for example in court, hospitals, or schools).

The Onondaga County DSS deployed 56 Dell Latitude D620 laptops to 69 caseworkers and one supervisor on 11/19/07 (see Appendix A of *the Demonstration Project's Summary Report* for device specifications). Forty caseworkers received their own device and the remaining six laptops were shared on a rotating basis among night service staff. Ten supervisors received their own device and docking stations with keyboards and monitors. All 56 laptops were deployed with district-provided external broadband cards. 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.

Caseworkers were selected for this pilot test based on their level of seniority. All staff using laptops received small group training which lasted approximately one hour and fifteen minutes and covered the following: (1) orientation to the project, (2) orientation to the equipment, (3) local guidelines, (4) initialization of individual IDs, setup of broadband and VPN access. Each person received a small training packet at the end of the session for later reference.

Finally, no policies were changed to support the introduction of mobile technologies before or during the pilot period. In both periods, caseworkers were allowed, with pre-approval, compensatory time (up to four hours a week) for work done at home after normal work hours.

Characteristics of Respondents

A total of 69 CPS caseworkers participated in this study: 48 took the baseline survey (response rate 70%); 41 took the post-pilot survey (response rate 59%); and 32 took both the baseline and post-pilot surveys (response rate of 46%).

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 Onondaga County DSS respondents[1] were moderately experienced in CPS field work, with an average of 6.6 years of experience; 62% reported CPS experience of four years or more. Respondents worked about the same number of overtime hours in the pre-pilot and pilot period. The percentage of respondents reporting overtime of three hours or less in a week slightly increased from 84% in the pre-pilot period to 88% in the pilot period. Similarly, the average overtime hours slightly increased from 1.7 hours in the pre-pilot period to 1.9 hours in the pilot period. Eighty-five percent of respondents reported a typical court waiting time of two hours or less and 77% 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) 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

Onondaga County DSS respondents reported using the laptop during normal work hours, after work hours, during commute times, and when working overtime. 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. Other work included reading and reviewing case histories, opening new cases, closing cases, clearances, safety assessments, checking client histories, court petitions, using the Welfare Management System (WMS), and email. Approximately 58% of respondents reported using the laptop to access various forms of information from government Web sites at least once a day. Similarly, 74% of survey respondents accessed email once a day or more, while 64% of respondents reported using their laptop at least once a day or more to access map directions.

The extent to which caseworkers could 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. Fifty-two percent reported returning to the office once a week or less to access case information during the pilot period, compared to only 13% in the pre-pilot period. Respondents were in the field approximately the same number of days per week (average of 3 days) during the pre- and pilot periods. One caseworker stated, “It gives you more flexibility in when you enter your notes and you don't have to call anyone else or go back to the office if you need to look up information you may need in the field.”

Onondaga County DSS had district-provided external broadband cards during the pilot period. While many respondents reported encountering relatively few overall problems, several reported obstacles to mobile use including the inability to establish a connection, slow speed or unreliable connections while in the field and at home. During the teleconference, respondents noted that there did not seem to be any major coverage ‘dead zones’ in their area, and that they generally have excellent connectivity in the court house. The most often noted issues were slow connections, and being kicked-off. Most respondents expressed that privacy was not problematic at the court house or while in the field, although, again, some did experience privacy problems. While caseworkers are able to use a room reserved for lawyers, some still found themselves hiding their laptop screens from onlookers. Several respondents noted the small blocks of time available to use the laptop in the field or court house were an issue. One respondent stated, “[The] blocks of time are too small because connecting takes a while and although the note could have been typed in that time, it was not enough time to connect and type.”

Participants were also asked about ease of logging-on to the device. Overall, 39% said it was “Easy,” 50% rated it as “Neither difficult nor Easy,” and another 11% of survey respondents rated the log-on process as “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, respondents reported using the laptop most frequently at home (63%), for an average of three hours per week, and 24 % reported using it in the field for less than one hour per week, and 17% used it at the court house for less than one-half hour per week.

Table 1 - Location and Hours of Laptop Use per Week

	Use of Laptop (n)	Average length of use per week
Field	24% (10)	0.70 Hours
Court	17% (7)	0.19 Hours
Home	63% (26)	3.07 Hours
Do not use at all	0% (0)	--

** Based on survey respondents who took the post survey n = 41. Total number of testers n = 69.*

The amount of time caseworkers spend in court suggests that it is an unexploited location for mobile work in many districts. However, respondents in Onondaga County DSS spend on average just under two days a month at court and wait on average 1.5 hours during a court visit.

Caseworkers may not be using the laptop in the court house or in the field because of other competing interests that may limit the amount and type of work they can do. Many respondents stated in open-ended survey comments that they just do not connect the laptop while in the court house, while others expressed that the changes in work habits were impacting use. Another did not see how the laptop fit with field work stating, "I have not felt the need to keep the laptop with me as of yet. I usually just use it at home at night. That way I can focus on the visits during the day and documentation at night." Another stated, "I do not want to be lugging the computer, along with everything else I need, around in the hopes I might use it. I will put it back in my car when it warms up so that I can use it more in the field." Others are anticipating a change in work behavior stating, "I can enter case notes into CONNECTIONS at home, if I choose to do so, especially after Friday visits, or after visits at the end of the day. I anticipate using the laptop more in the field in the future, especially when the weather is better and I go from house to house more."

Caseworkers could work from home if they get prior approval and are allowed up to four hours a week of compensatory time. One caseworker described the situation as, "It's easier to work at home and catch-up on documentation even though we can't get the overtime compensation (since we are only allotted 4 hours a week and they must be pre-approved). [The] administration doesn't realize to do the job effectively and keep up on deadlines, more time is needed." Several respondents stated that working from home was now more efficient because there were less interruptions, it increased flexibility, and gave respondents more time to do different tasks.

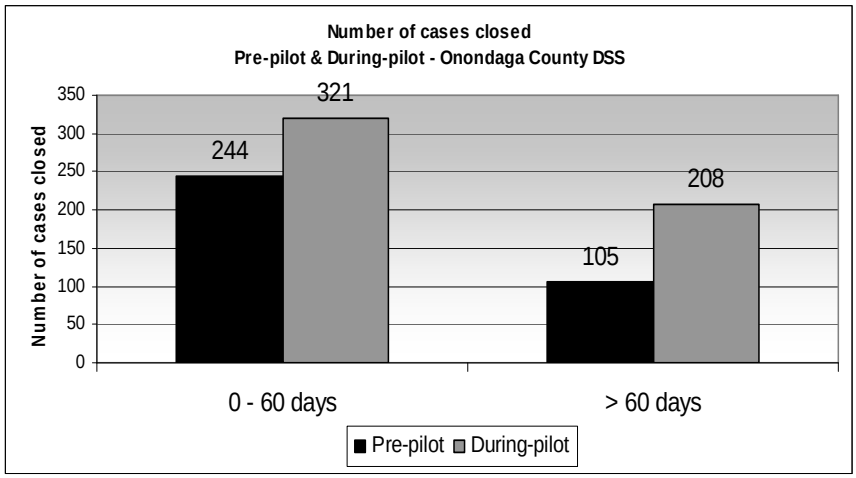
Productivity and Efficiency

This analysis uses central database data and survey responses to examine two core questions about possible technology impacts within the Onondaga 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 244 in the pre-test period to 321 during the test. The number of cases closed (over 60 days) increased markedly from 105 in the pre-pilot period to 208 in the pilot period. This is a marked increase in productivity; the total number of cases closed increased from 349 in the pre-pilot period

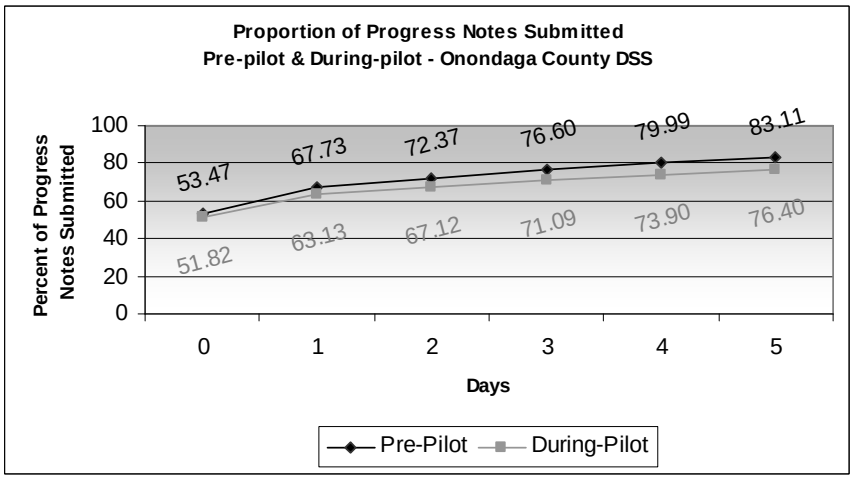
to 529 during the pilot period – over a 50% increase. It is important to note that in this county the total number of cases available to be worked on[2] increased from 1048 in the pre-pilot period to 1118 in the pilot period – a 6.7% increase.

Figure 1 - Number of Onondaga 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 is marginally, but consistently below that of the pre-pilot period. By the fifth day, over 83% of all notes were entered for the pre-pilot period, compared to just over 75% for the pilot period. By this measure, timeliness decreased slightly during the pilot, but is high overall.

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



[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.

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 case closing during the pilot period that could have had this effect. In Onondaga County DSS, a total of 56 laptops and wireless access cards, ten of which included docking stations as desktop replacements, were deployed. These changes in equipment and related work processes may account for a decreased workflow of progress notes during the test period. Several survey respondents reported password difficulties in logging-on, maintaining a connection, and slow responses in the field. One respondent remarked on the limited places to use the laptops in the field stating, "I would not use the laptop in the field, as it is not safe to use in a client's home, and the time is not long enough. I may use it in the car during the warmer months between visits." Others were not able to use the laptops in court due to the lack of suitable spaces to do confidential work. As one said, "It does not seem appropriate to bring confidential information to court as there are no real private places to type."

Onondaga County DSS respondents were not allowed overtime pay for work on the laptops at home, but could receive compensatory time if pre-approved. Two respondents reported they were able to use the laptops during commuting time to look up information, addresses, or type notes into the central system. 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."

Almost 90% reported improvements in timeliness of documentation and 92% in ability to access case information. There were smaller proportions of respondents reporting improvements in ability to work in court (25%), communicating with supervisors (23%) and providing service to clients (31%). None reported a negative impact.

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

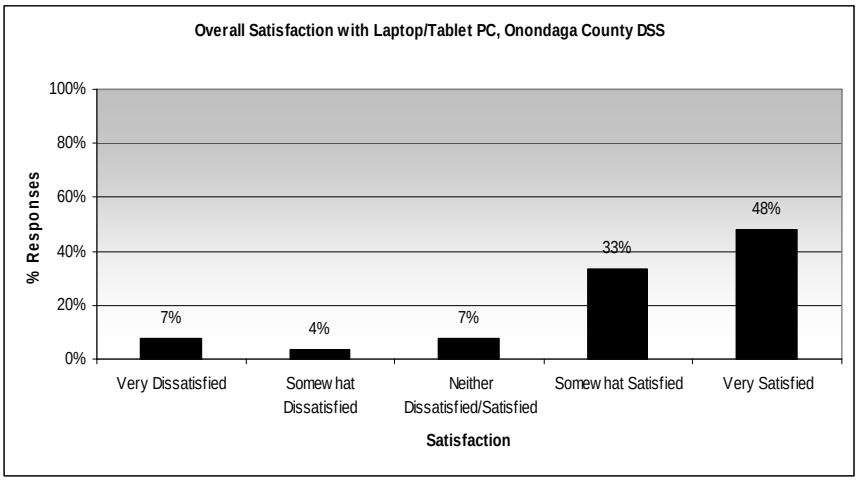
	Much worse (n)	Somewhat worse (n)	About the same (n)	Somewhat better (n)	Much better (n)
Timeliness of documentation	0%(0)	0%(0)	11% (3)	52% (14)	37% (10)
Ability to do work in court	0%(0)	0%(0)	75% (18)	17% (4)	8% (2)
Ability to access case information	0%(0)	0%(0)	7% (2)	44% (12)	48% (13)
Communication with supervisors	0%(0)	0%(0)	77% (20)	23% (6)	0% (0)
Service to clients	0%(0)	0%(0)	69% (18)	27% (7)	4% (1)

The lack of reported negative impacts on timeliness is somewhat inconsistent with the timeliness of documentation results obtained from the central database. It is possible that the reduction in timeliness seen in progress note entry was too small to be noticed by the caseworkers and overshadowed by the increase in rate of case closing.

Satisfaction

The overall level of satisfaction with the laptops was high. Figure 3 below shows that 81% of respondents expressed being "Somewhat satisfied" or "Very satisfied," compared to 11% being "Somewhat dissatisfied" or "Very dissatisfied." Additionally, 7% indicated that they were "Neither dissatisfied/Satisfied."

Figure 3 - Overall User Satisfaction with the Laptops



** Based on survey respondents who took the post survey n = 41. Total number of testers n = 69.*

Despite these overall high levels of satisfaction, in teleconferences and survey responses, participants reported technical difficulties, inconsistent access to CONNECTIONS, lengthy boot-up times, and issues related to login passwords that may have influenced perceptions.

Laptop use generally was seen as contributing to lower job-related stress; roughly 89% of respondents said that it did reduce stress levels, while 11% 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 is available, and having the flexibility of working on documentation outside of the office in a timely manner. One respondent said, "It [the laptop] allows me to catch up on progress notes and related work while at home, at my own speed, instead of having to be pressured to come into the office. It also will be effective while on night service." Several respondents did not feel as though laptops contributed to lower job-related stress and attributed this to the nature of the work and work-life balance. One respondent said, "It [the laptop] does not cut down on the amount of work I have to do and it is now making me a worker who is supposed to be available 24 hours a day – as I can 'readily' access my work. It does reduce some stress in the sense that if I have childcare or other issues I can readily work at home and receive my new reports without using 'time-off'."

Overall, all of the respondents would recommend the use of laptops to colleagues. The reasons mentioned recommending the laptop included increased flexibility in the ability to do work, the ability to work outside of the office on one's own timetable, increased access to information, and increased timeliness of documentation. One caseworker pointed out, "The laptop allows you to do work from almost anywhere, so if you have time between appointments you do not need to return to the office to enter notes or check history." Another caseworker highly recommended its use regardless of compensatory time, "…I suggest all co-workers take advantage of using the laptop as

it can reduce the stress of the job even if you can't get the actual compensation for its usage outside of work hours over the pre-approved 4 hours.”

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 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 Orleans County DSS. Findings are based on data collected through online surveys, teleconferences, district questionnaires, and analysis of CONNECTIONS data (see Appendix C of the *Demonstration Project's Summary Report* for data collection tools and timeline). 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 A of *the Demonstration Project's Summary Report* 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 respondents[1] 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

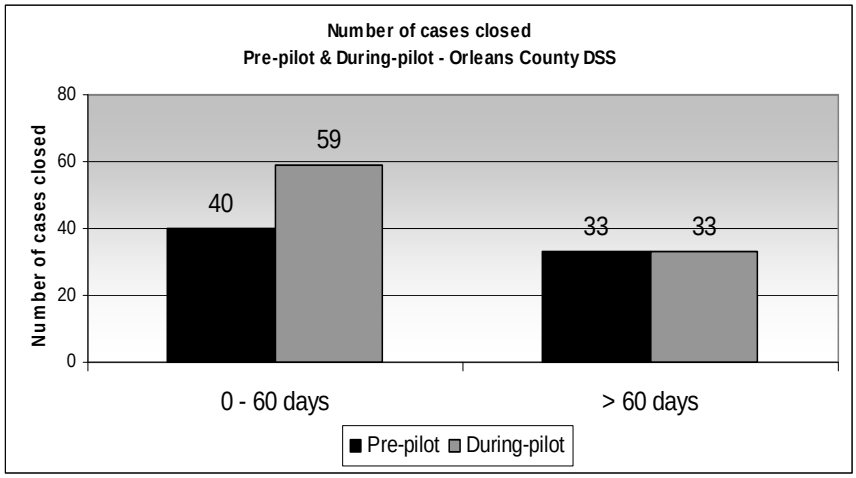
information when they need it." Several teleconference respondents stated that working from home was now more efficient because you did not have to deal with the constant interruptions found in the office and it increased their flexibility.

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 on[2] decreased from 177 in the pre-pilot period to 163 in the pilot period – a 7.9% decrease.

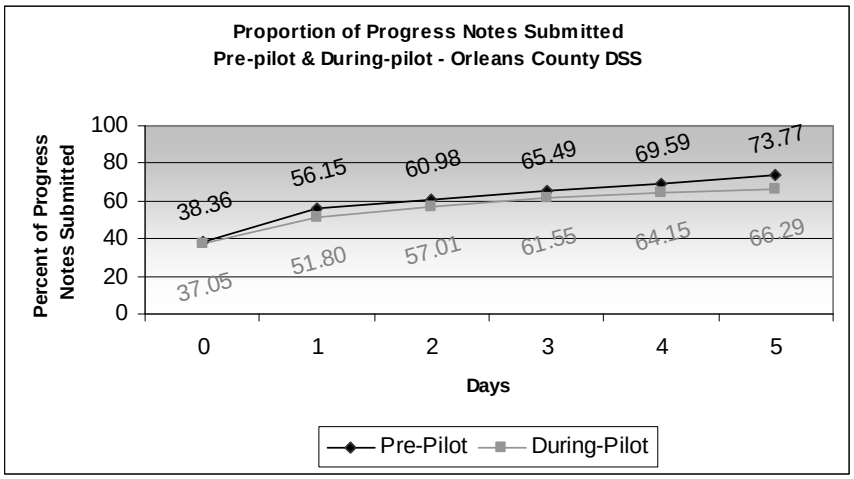
Figure 1 - Number of Orleans County DSS Cases Closed Pre-Pilot and During Pilot



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 quesitons 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

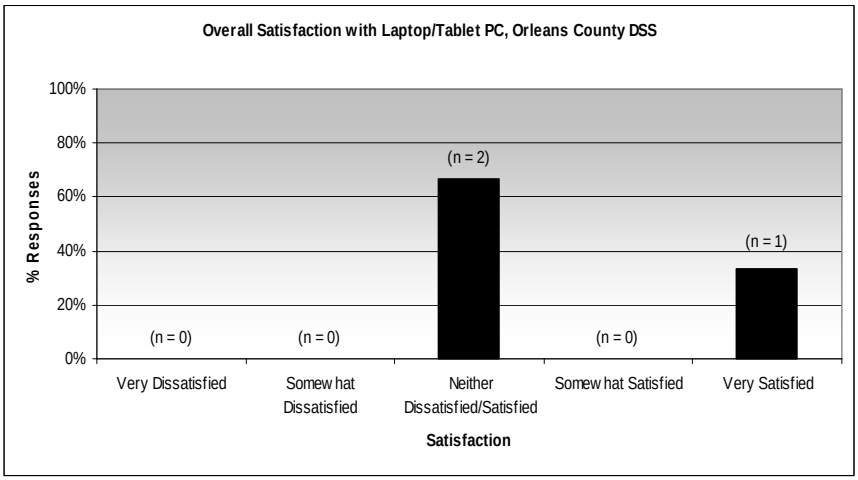
	Much worse (n)	Somewhat worse (n)	About the same (n)	Somewhat better (n)	Much better (n)
Timeliness of documentation	0%(0)	0%(0)	100%(2)	0%(0)	0%(0)
Ability to do work in court	0%(0)	0%(0)	100%(2)	0%(0)	0%(0)
Ability to access case information	0%(0)	0%(0)	100%(2)	0%(0)	0%(0)
Communication with supervisors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

Center for Technology in Government

Assessing Mobile Technologies in Child Protective Services

Putnam County Department of Social Services and Mental Health 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 Putnam County DSS. Findings are based on data collected through online surveys, teleconferences, district questionnaires, and analysis of CONNECTIONS data (see Appendix C of the *Demonstration Project's Summary Report* for data collection tools and timeline). The field test lasted 79 days from 10/22/07 – 1/9/08.

District Deployment

Putnam County DSS has nine CPS staff responsible for child protective services. Putnam County is a geographically small rural area, just above Westchester County, with about 100,000 residents. The Putnam County DSS participated in the demonstration project to learn if mobile technologies will allow caseworkers more time in the field to adequately address the needs and ensure the safety of families, create more opprotunities to complete documentation, and increase caseworker job satisfaction.

The Putnam County DSS deployed nine Dell Latitude D620 laptops to eight caseworkers and one supervisor on 10/22/07 (see Appendix A of *the Demonstration Project's Summary Report* for device specifications). Nine docking stations with keyboards and monitors were installed. Each caseworker and supervisor received their own device. Nine district-provided broadband cards were deployed to participants approximately one month after receiving the laptops (cards received on or about 11/15/07). 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 staff volunteered to participate in the demonstration project. Each person was provided information about the demonstration project in addtion to receiving individual training on how to connect to the laptop and security precautions. Each participant signed an "acknowledgement receipt" stating that they received the laptop.

One policy was modified from the pre-pilot period to support the introduction of mobile technologies during the pilot period. In the pilot period, caseworkers were allowed to use "flex time" for work they completed using the laptop while at home after regular work hours.

Characteristics of Respondents

A total of eight CPS caseworkers participated in this study: six took the baseline survey (response rate 75%); four took the post-pilot survey (response rate 50%); and three took both the baseline and post-pilot surveys (response rate 38%).

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 Putnam County DSS respondents[1] were moderately experienced in CPS field work, with an average of 6.6 years of experience; 50% reported CPS experience of three years or less. Respondents worked about the same number of overtime hours in the pre-pilot and pilot period. The percentage of respondents reporting overtime of five hours or less in a week did not change (staying around 67% for both in the pre- and during-pilot periods). However, the average overtime hours increased from 4.3 hours in the pre-pilot period to 6.7 hours in the pilot period. It is important to note that the range of overtime hours changed from two to six hours in a week during the pre-pilot period to five to ten hours in a week during the pilot period. All of the respondents reported a typical court waiting time of three hours or less and 83% reported on average spending four 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.

[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

Putnam DSS respondents reported using the laptop during normal work hours, after work hours, when on-call, and while working overtime. Putnam County DSS desktops were removed and docking stations were 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, opening new cases, checking client histories, court reports, email, and word processing. Overall, three of the respondents reported using the laptop to access various forms of information from government Web sites at least once a day. Similarly, three of the respondents accessed email once a day or more, while three respondents reported using their laptop at least once a day or more to access map directions.

The extent to which caseworkers could access information while out of the office has a big influence on what kinds of mobile work are possible. Laptop use did not change (at this point in time) the frequency of respondents returning to the office during the work day to access information. Two of the respondents reported returning to the office five or more times a week to access case information in the pre- and during-pilot periods (and one respondent reported returning once a week or less in the pre- and during-pilot periods). The respondents were in the field approximately the same number of days per week (average about 3.25 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 respondent described the benefit of mobility, "I can take my PC with me and enter information as needed or at my leisure, rather than having to be forced to come into the office to enter information." Another described how if she did not know what to do with a case, she now called her supervisor at home and the supervisor could also access CONNECTIONS and advise her.

Putnam County DSS had district-provided external broadband cards during the pilot period. At the mid-pilot period teleconference, testers reported no problems with connectivity; however this was most likely due to the fact that they had not used the laptop at the court house or very much in the field during the early stages of the test period. Several post-pilot survey comments indicated that respondents had trouble logging-on to CONNECTIONS from home or the field, and identified issues such as low signal strength and being kicked out of CONNECTIONS. At the court house, a few expressed connectivity problems, but most did not encounter problems. A few noted some privacy issues at court. One respondent described the court house situation stating, " we have a little private room at the court house where they can work, but that it is normally used by clerks, attorneys, and the judges, so it is pretty loud." Most said they can envision using the laptop at court but they felt that they just did not have enough time yet to experiment with it.

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

Location

Table 1 below details the percentage of survey respondents using the laptop at different locations, as well as the average length of time the laptop was used. Aside from in the office, all respondents reported using the laptop at home for an average of just under ten hours per week, in the field for about six hours per week, and at the court house for three hours week.

Table 1 - Location and Hours of Laptop Use per Week

	Use of Laptop (n)	Average length of use per week
Field	100% (4)	6.25 Hours
Court	100% (4)	3.00 Hours
Home	100% (4)	9.75 Hours
Do not use at all	0% (0)	--

** Based on survey respondents who took the post survey n=4. Total number of testers n=8.*

The amount of time caseworkers spend in court suggests that it is an unexploited location for mobile work in most districts. Respondents in the Putnam County DSS spend on average three days a month at court and wait on average 2.6 hours during a court visit. Respondents indicated using the laptop in court for about the same amount of time as their average wait time. This is a good indication that respondents are utilizing their time better in court.

Caseworkers can work from home for overtime reasons and receive flex time. Respondents stated that working from home was now more efficient due to less interruptions, increased flexibility and an increase in the time respondents have to do different tasks. One respondent expressed “I know that even though I do not want to have to do work at home, I can bring my laptop home and complete some tasks, and even if I can't get a connection, I can still use the laptop for word processing.” Another stated, “The laptop has allowed workers to type directly into CONNECTIONS from home, which indicates there is insufficient time during the work day to complete work.”

Putnam County DSS is currently reviewing existing policies to determine how to best take advantage of the mobile technologies. For example, although there is technically a “no work from home” policy during business hours, management is investigating the possibility of caseworkers working from home maybe once a week.

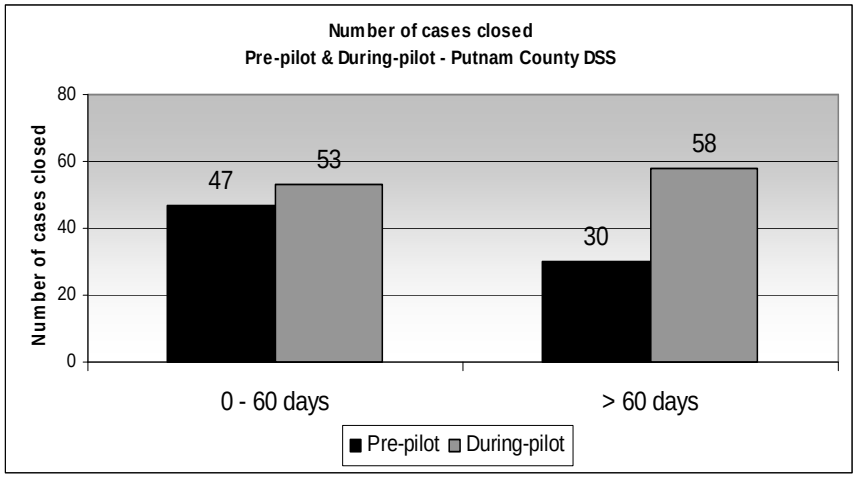
Productivity and Efficiency

This analysis uses central database data and survey responses to examine two core questions about possible technology impacts within the Putnam 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 somewhat during the test period, up from 47 in the pre-pilot period to 53 during the pilot period. The number of cases closed in over 60

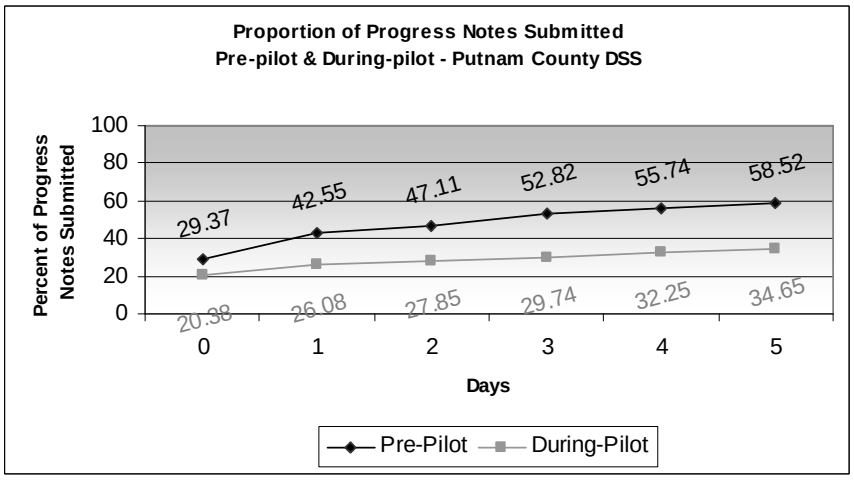
days increased from 30 in the pre-pilot period to 58 in the pilot period. This is a marked increase in productivity; the total number of cases closed increased from 77 in the pre-pilot period to 111 during the pilot – a 44 % increase. It is important to note that in this county the total number of cases available to be worked on[2] decreased slightly from 173 in the pre-pilot period to 162 in the pilot period – a 6.4% decrease.

Figure 1 - Number of Putnam 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 third day following the event. But contrary to expectations, the proportion of progress notes entered in each time period during the pilot is substantially below that of the pre-pilot period. By the fifth day, over 58% of all notes were entered for the pre-pilot period, compared to less than 35% for the pilot period. By this measure, timeliness decreased markedly during the pilot.

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



[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.

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 Putnam County DSS, a total of nine laptops and docking stations were deployed as desktop replacements, along with wireless access cards for all. Substituting the laptops for a desktop PC could require a period of adjustment. In addition, the pattern of progress note entry in the test period shows a larger than expected number of notes entered in during the period of 40-60 days after the event. This suggests an effort to close older cases, which would show in the analysis above (Table 2) as a drop in timeliness.

Policies and related work practices can account for changes in workflow of progress notes during the test period. In this county, workers were not allowed overtime pay for work on the laptops at home, but were encouraged to arrange flex time instead. This may been an insufficient incentive for some to take the laptops home regularly or devote substantial time to note entry outside regular hours (although it should be noted that many respondents during the teleconference call were very positive about flex time). Also, technical difficulties may have played a role. For example, one respondent reported, "At times, logging-on to CONNECTIONS while in [the] field or at a hospital was difficult; the connection was not strong, this is a problem with the wireless card." 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 Putnam respondents reported some substantial positive impacts on their work resulting from laptop use, shown in Table 2 below. For timeliness of documentation, one-third of the respondents reported improvements, and four of the nine reported improved ability to work in court and access information from the field. A smaller proportion (two of nine) reported improvements in service to clients and none for communication with supervisors. No respondents reported a negative impact on any of the work categories.

Table 2 - Perceived Change Timeliness and Work Impacts – Putnam 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)	25%(1)	50%(2)	25%(1)
Ability to do work in court	0%(0)	0%(0)	0%(0)	75%(3)	25%(1)
Ability to access case information	0%(0)	0%(0)	0%(0)	75%(3)	25%(1)
Communication with supervisors	0%(0)	0%(0)	100%(4)	0%(0)	0%(0)
Service to clients	0%(0)	0%(0)	50%(2)	25%(1)	25%(1)

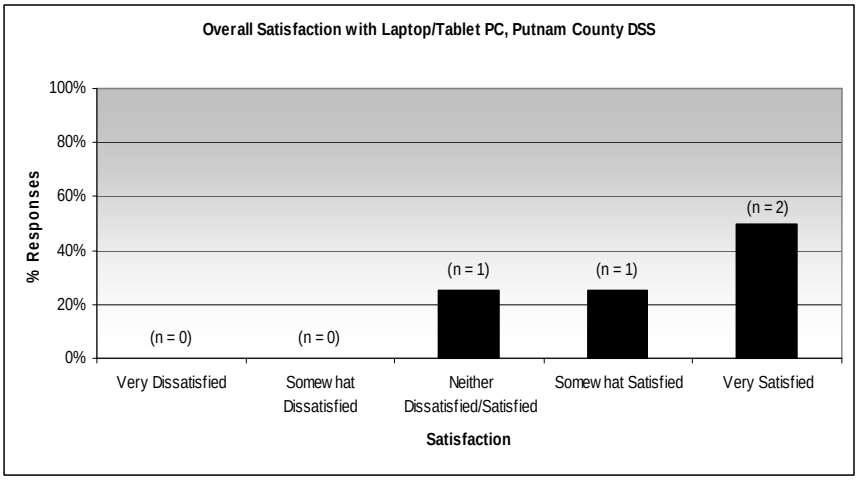
That lack of reported negative impacts on timeliness and other work activities is somewhat inconsistent with the timeliness of documentation results obtained from the central database. It is

possible that the caseworkers responding to the survey were unaware of the overall trend in timeliness seen in Table 2 or their perception was based more on the increased rate of case closing.

Satisfaction

The overall level of satisfaction with the laptops was high. Figure 3 below shows that three of the four respondents expressed being "Somewhat satisfied" or "Very satisfied." None of the respondents expressed being "Dissatisfied" with the laptops, while only one respondent indicated that they were "Neither dissatisfied/Satisfied."

Figure 3 - Overall User Satisfaction with the Laptops



** Based on survey respondents who took the post survey n = 4. Total number of testers n = 8.*

Laptop use generally was seen as contributing to lower job-related stress; three of the four respondents said that it did reduce stress, while only one said it did not. Those who reported a reduction in stress attributed it to their ability to catch up on their work and increased flexibility for doing work outside of the office.

All four respondents would recommend the use of laptops to colleagues. One caseworker pointed out that, "The laptop is a great addition, in our office we do have some issues with being short staffed, but for the most part I do think that the laptops will be very helpful in the long run." Another respondent stated, "All caseworkers in child welfare services, including MPS and foster care, should have laptops. All are in the field with no time to access or enter information and are overworked and understaffed."

Center for Technology in Government

Assessing Mobile Technologies in Child Protective Services

Rockland 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 Rockland County DSS. Findings are based on data collected through online surveys, district questionnaires, and analysis of CONNECTIONS data (see Appendix C of the *Demonstration Project's Summary Report* for data collection tools and timeline). The field test lasted 34 days from 12/6/07-1/9/08.

District Deployment

Rockland County DSS has 23 CPS staff responsible for child protective services. Rockland County, a bedroom community just outside of New York City, has approximately 275,000 residents. The Rockland County DSS participated in the demonstration project to learn if mobile technologies positively impact caseworker job satisfaction and ultimately improve employee morale and retention. The hope is that mobile devices will enable caseworkers to comply with state reporting requirements and increase their ability to do work while out of the office.

Rockland County DSS deployed 25 Compaq tc4400 tablets to 19 caseworkers, three supervisors, and three managers. Laptops were deployed to groups of eight participants between 12/3/07 – 12/6/07 (see Appendix A of *the Demonstration Project's Summary Report* for device specifications). Each person received their own device. All 25 tablets were deployed with district-provided external broadband cards. 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.

Caseworkers received training in small groups that followed the tutorial provided on the tablet; each person practiced using the pen and connecting to all applications. The Rockland County DSS "Internet Use Policy" and "Laptop Guide" were distributed to each person prior to users signing for the device.

Finally, no policies were changed to support the introduction of mobile technolgies before or during the pilot period. In both periods, caseworkers were allowed, at the discretion of supervisors, compensatory time for work done at home after regular work hours.

Characteristics of Respondents

A total of 19 caseworkers participated in this study: 14 took the baseline survey (response rate 74%); 15 took the post-pilot survey (response rate 79%); and 11 took both the baseline and post-pilot surveys (response rate of 58%).

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 Rockland County DSS respondents[1] were moderately experienced in CPS field work, with an average of 6.6 years of experience; 57% reported CPS experience of four years or more. Respondents were working slightly less overtime hours during the pilot period. Seventy-eight percent of respondents reported working overtime for five hours or less in a week in the pre-pilot period compared to 91% in the pilot period. Therefore, the average overtime hours slightly decreased from 4.7 hours in the pre-pilot period to 4.2 hours in the pilot period. In both periods, all participants worked on average at least two hours of overtime in week. Ninty-two percent of respondents reported a typical court waiting time of three hours or less and 73% reported spending on average three 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.

[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

Rockland County DSS respondents reported using the laptop during normal work hours, after work hours, and when working overtime. Rockland County DSS desktops were removed and docking stations were 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. Case documentation was the most frequent use, including inputting and updating notes, opening and closing cases, completing safety assessments, email, and word processing. Overall, 27% of respondents reported using the laptop to access various forms of information from government Web sites at least once a day. Approximately 60% of respondents accessed email once a day or more, while 40% of respondents reported using their laptop at least once a day or more to access map directions.

The extent to which caseworkers could 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. Sixty percent reported returning to the office once a week or less to access case information during the pilot period, compared to 22% in the pre-pilot period. The respondents were in the field approximately the same number of days per week (average 3.5 days) during the pre- and pilot periods.

Rockland County DSS had district-provided external broadband cards during the pilot period. Respondents reported several obstacles to mobile use, including the inability to establish a connection and slow speed or unreliable connections, in all locations. At the court house, the lack of privacy was most problematic. The most mentioned connectivity problem was slowness. One respondent described their situation: “It takes a long time to log-on the network when I am at home. CONNECTIONS, most of the time, is really slow and I find myself writing notes in Word and then e-mailing them to the office and putting them in CONNECTIONS.”

Participants were also asked about ease of logging-on to the device. Overall, 47% of respondents rated the log-on process as “Difficult” to “Extremely difficult,” 27% rated it as “Neither difficult nor Easy,” and another 26% said it was “Easy” to “Extremely 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 (87%), for an average of over four and a half hours per week. Twenty-seven percent used it while in the field for approximately one-half hour per week, compared to 13% using it in the court house for less than 1 hour per week.

Table 1 - Location and Hours of Laptop Use per Week

	Use of Laptop (n)	Average length of use per week
Field	27% (4)	1.43 Hours
Court	13% (2)	0.43 Hours
Home	87% (13)	4.67 Hours
Do not use at all	6% (1)	--

** Based on survey respondents who took the post survey n=15. Total number of testers n=19.*

The amount of time caseworkers spend in court suggests that it is an unexploited location for mobile work in most districts. Respondents spend on average 2.5 days a month at court and on average wait just over 2 hours during a court visit. However, caseworkers may not be using the laptop in the court house or the field because of other competing interests that may limit the amount and type of work they can do. The Rockland County DSS test period was 34 days, and open-ended comments in the survey noted that respondents did not have many opportunities to use it in court during this time period.

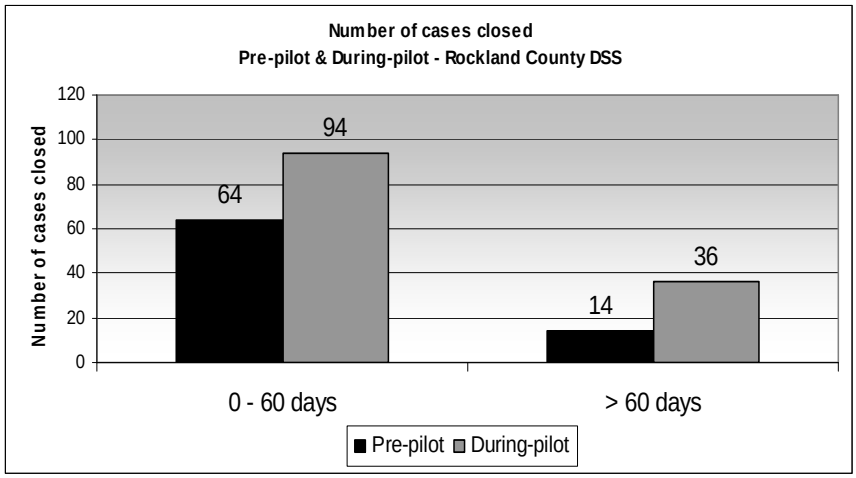
Caseworkers can work from home for overtime reasons and receive compensatory time at the discretion of supervisors. Similarly, respondents stated that working from home was now more efficient because it allowed them to get caught up, added peace of mind, and increased their flexibility and the time they have to do different tasks.

Productivity and Efficiency

This analysis uses central database data and survey responses to examine two core questions about possible technology impacts within the Rockland 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 64 in the pre-pilot period to 94 during the pilot period. The number of cases closed in over 60 days increased somewhat from 14 in the pre-pilot period to 36 in the pilot period. This is a marked increase in productivity; the total number of cases closed increased from 78 in the pre-pilot period to 130 during the pilot – over a 66% increase. It is important to note that in this county the total number of cases available to be worked on[2] increased from 270 in the pre-pilot period to 300 in the pilot period – a 11.1% increase.

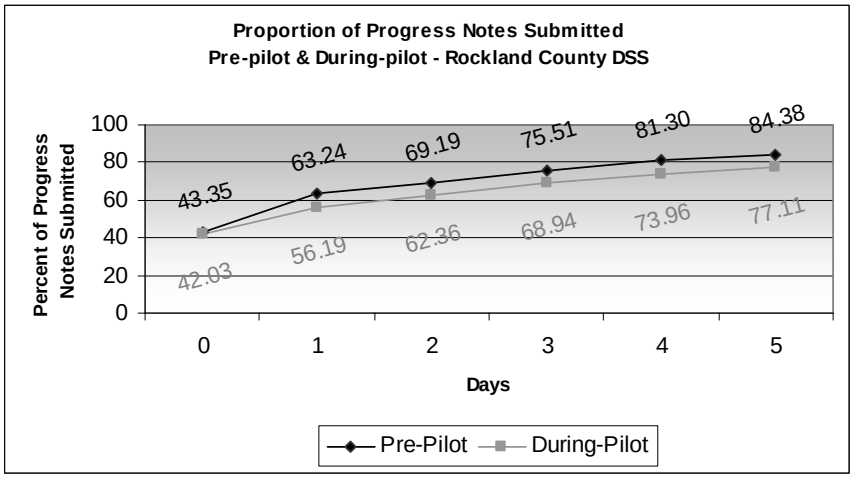
Figure 1 - Number of Rockland CountyDSS Cases Closed Pre-Pilot and During Pilot



[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 84% of all notes were entered for the pre-pilot period, compared to just over 77% for the pilot period. By this measure, timeliness decreased slightly during the test, 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 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 Rockland County DSS, a total of 25 laptops with wireless access were deployed. Several respondents reported difficulties in maintaining a connection away from the office and slow response while connected. One respondent remarked, “Connections runs very slow while I am working from my home, and at times I find it easier to just type the notes in Word, and email them to myself.” This sentiment was echoed by several other respondents.

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 Rockland County DSS respondents reported consistently positive impacts on their work resulting from laptop use, shown in Table 2 below. Over three-fourths reported improvements in timeliness of documentation and 85% in ability to access case information. There were smaller proportions reporting improvements in ability to work in court (33%), communicating with

supervisors (31%), and providing service to clients (54%). Only one respondent reported a negative impact on any of the work categories.

Table 2 - Perceived Change Timeliness and Work Impacts – Rockland County

	Much worse (n)	Somewhat worse (n)	About the same (n)	Somewhat better (n)	Much better (n)
Timeliness of documentation	0%(0)	7%(1)	7%(1)	71%(10)	14%(2)
Ability to do work in court	0%(0)	0%(0)	67%(8)	25%(3)	8%(1)
Ability to access case information	0%(0)	0%(0)	14%(2)	64%(9)	21%(3)
Communication with supervisors	0%(0)	0%(0)	69%(9)	8%(1)	23%(3)
Service to clients	0%(0)	0%(0)	46%(6)	31%(4)	23%(3)

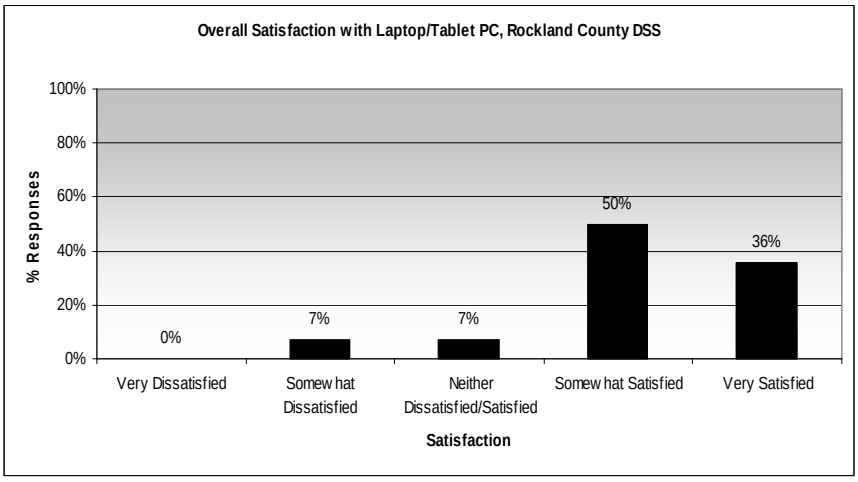
That lack of reported negative impacts on timeliness is somewhat inconsistent with the timeliness of documentation results obtained from the central database. It is possible that the reduction in timeliness seen in progress note entry was too small to be noticed by the caseworkers and overshadowed by the increase in rate of case closings.

Several respondents did recognize the overall potential value of the laptop's mobility. One commented, "If the weather permits, I stop at outdoor parks or any convenient place (libraries, etc.). As long as I have time between stops it is very helpful to not have to return to the office. The phone is not ringing and there are less distractions, so it's a good place to focus."

Satisfaction

The overall level of satisfaction with the laptops was high. Figure 3 below shows that 86% of respondents expressed being "Somewhat satisfied" or "Very satisfied," compared to only 7% being "Neither dissatisfied/Satisfied" or "Somewhat dissatisfied."

Figure 3 - Overall User Satisfaction with the Laptops



** Based on survey respondents who took the post survey n = 15. Total number of testers n = 19.*

Laptop use was generally \seen as contributing to lower job-related stress; 86% of respondents said that it did reduce stress, while roughly 14% 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 is available, and having the flexibility of working on documentation outside of the office. One respondent said, “I have the option of working anytime and almost anywhere. This reduces some work stress though it can be problematic for the home life.” Several others expressed a similar sentiment: “Because I do a lot of work at home now, I do not get paid or have any free or down time.”

Overall, 93% of respondents would recommend the use of laptops to colleagues, while only 7% were unsure. The reasons mentioned for this positive recommendation included increaseed flexibility to do work outside of the office, the ability to use time more efficiently, and increased access to information. One respondent pointed out, “Having the laptop allows a worker to meet deadlines immediately instead of having to stay at work later or come in earlier to complete them.”

Center for Technology in Government

Assessing Mobile Technologies in Child Protective Services

Schenectady 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 Schenectady County DSS. Findings are based on data collected through online surveys, teleconferences, district questionnaires, and analysis of CONNECTIONS data (see Appendix C of the *Demonstration Project's Summary Report* for data collection tools and timeline). The field test lasted 75 days from 10/26/07-1/9/08.

District Deployment

Schenectady County DSS has over 40 CPS staff responsible for child protective services. Schenectady County is mostly urban with some rural areas and has approximately 150,000 residents. The Schenectady County DSS participated in the demonstration project to learn if mobile technologies can help staff maximize field and court time, as well as increase opportunities to do data entry while away from the office.

The Schenectady County DSS deployed 20 Dell Latitude D620 laptops to 19 caseworkers, eight supervisors and one manager on 10/26/07 (see Appendix A of *the Demonstration Project's Summary Report* for device specifications). All caseworkers received their own device and docking stations with keyboards and monitors; supervisors and managers shared one laptop. All 19 laptops were supplied with district-provided external broadband cards approximately three weeks after caseworkers received the laptops. 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.

Each caseworker participated in group training that covered how to complete the entire connection process (from power-up to power-down) and how to use the laptop accessories. Caseworkers were selected to participate in the demonstration so that they represented a range of technical skills and experience in managing caseloads.

Finally, no policies were changed to support the introduction of mobile technologies before or during the pilot period. In both periods, caseworkers were not compensated for documentation work done at home after normal work hours.

Characteristics of Respondents

A total of 19 CPS caseworkers participated in this study: 18 took the baseline survey (response rate 95%); 15 took the post-pilot survey (response rate 79%); and 15 took both the baseline and post-pilot surveys (response rate 79%).

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 Schenectady County DSS respondents[1] were moderately experienced in CPS field work, with an average of six years of experience; 56% reported CPS experience of three years or less. Respondents were working roughly the same amount of overtime hours during the pilot period as in the pre-pilot period. The percentage of respondents reporting overtime of five hours or less in a week did not change (staying at 57% for both the pre- and pilot periods). However, the average overtime hours did decreased slightly from 6.1 hours in the pre-pilot period to 5.3 hours in the pilot period. In both periods, all respondents reported working at least two hours overtime in an average week. Sixty-three percent of respondents reported a typical court waiting time of two hours or less and spend on average 4.25 days month in court..

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

Schenectady County DSS respondents reported using the laptop during normal work hours, after work hours, on-call, and when working overtime. Schenectady 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, checking client histories, email, and accessing documents and forms. Several looked up criminal history information or accessed the sex offender registry and the Welfare Management System (WMS). Seventy-one percent the respondents reported using the laptop to access various forms of information from government Web sites at least once a day. Similarly, 79% of respondents accessed email once a day or more, and 71% of respondents reported using their laptop once a day to access map directions.
The extent to which caseworkers could 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. Thirty-one percent reported never returning to the office to access case information during the pilot period, compared to only 15% in the pre-pilot period. The respondents were in the field approximately the same number of days per week (average 3 days) during the pre- and pilot periods.

Schenectady County DSS had district-provided external broadband cards during the pilot period. While many respondents encountered few difficulties, several respondents reported obstacles to mobile use; such as the inability to establish a connection and slow speed or unreliable connections, mostly at court and in the field. Some recounted the difficulty of getting and maintaining connections, while others simply stated, “connection has been great.” At the court house, many reported that the lack of privacy was problematic. One respondent described the situation: “[It takes] too long to start up and shut down and [it] is too temperamental if not shut down properly, so it is not worth taking a chance on dragging it around (it is heavy) and we have a plethora of other things to bring out in the field. I tried using it while waiting at court, but if you get called into the court room you do not have enough time to shut down the computer and it would not be safe to leave it out.”

Participants were also asked about ease of logging-on to the device. Overall, 39% said it was “Easy” to “Extremely Easy,” 38% rated it as “Neither difficult nor Easy,” and 23% of respondents rated the log-on process as “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, respondents reported using the laptop most frequently at home (67%) for an average of 3.50 hours per week. Forty percent used it at court for about two hours per week, and 33% used it in the field for an average of two hours per week. One caseworker stated, “I'm able to complete work at home that I had been unable to finish during work hours.”

Table 1 - Location and Hours of Laptop Use per Week

	Use of Laptop (n)	Average length of use per week
Field	33% (5)	2.00 Hours
Court	40% (6)	2.00 Hours
Home	67% (10)	3.50 Hours
Do not use at all	7% (1)	--

** Based on survey respondents who took the post survey n=15. Total number of testers n=19.*

The amount of time caseworkers spend in court suggests that it is an unexploited location for mobile work. Survey respondents spend an average of four days a month at court and wait on average just over two hours during a court visit. One caseworker reported, "In family court we sit in a frequently crowded waiting room, the laptop is too physically cumbersome to use on my lap while sitting with people on each side of me, also due to being in close proximity to many other people there are issues regarding confidentiality." However, another suggested, "I am able to take my computer to court and out in the field. Typically when I go to court I am there a minimum of 3 hours and can now get some work done."

Several respondents stated that working from home was more effective because of increased access to information, and increased flexibility in where and when work was done. But, many respondents were reluctant to expend large amounts of personal time working from home when they are not compensated. One caseworker expressed, "I find it very helpful to have a laptop because it allows me mobility and the option to do my work outside of the office. I find the laptop extremely helpful when I am on-call. I often take it home to do work. I feel I would actually do even more if there was some way to be compensated for my time. Even if I was only to receive 'comp' time, I have no problem with my work being monitored while I am at home to prove how productive I am." Another describes the situation: "We do not get compensated to bring the laptop home and work. I use it primarily while I am on-call. Initially, I found myself bringing it home to catch up on work but then I realized the amount of time I was working at home and how it was impacting my home life without any compensation or recognition. I still bring it home, but only to download notes and to edit notes."

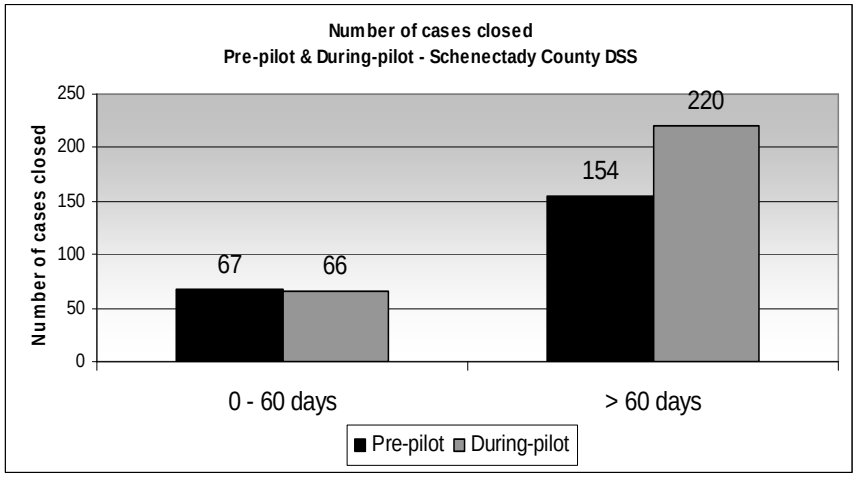
Productivity and Efficiency

This analysis uses central database data and survey responses to examine two core questions about possible technology impacts within the Schenectady 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) remained essentially unchanged from the pre-pilot period (67) to the pilot period (66). The number of cases closed in over 60 days increased somewhat, from 154 in the pre-pilot period to 220 in the pilot period. This is a marked increase in productivity during the test period; the total number of cases closed increased from 221 in the pre-pilot period to 286 during the pilot – over a 29 % increase. It is important to note that in this county

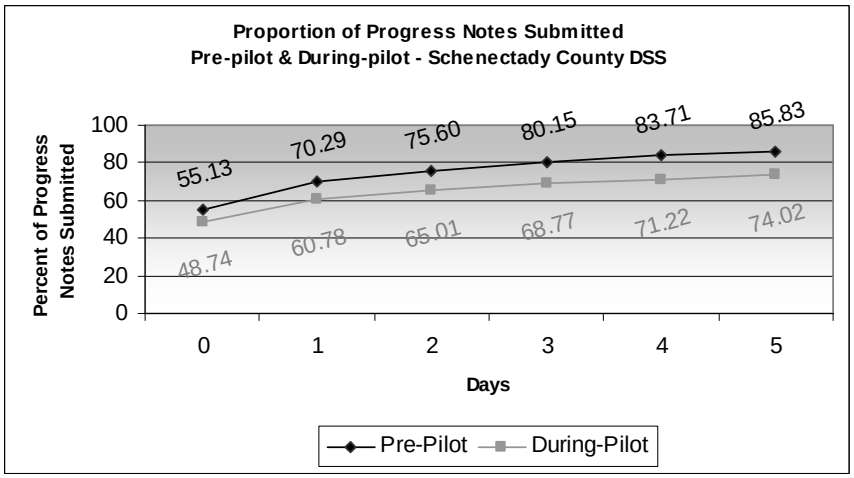
the total number of cases available to be worked on[2] increased from 764 in the pre-pilot period to 812 during the pilot – a 6.2% increase.

Figure 1 - Number of Schenectady 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 is marginally, but consistently, below that of the pre-pilot period. By the fifth day, over 85% of all notes were entered for the pre-pilot period, compared to just over 74% for the pilot. By this measure, timeliness decreased slightly during the pilot, but is still high overall.

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



There may be multiple reasons for the decrease in the timeliness of note entry. The overall increase in case closings during the pilot 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

[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.

Schenectady County DSS, a total of 20 laptops with wireless access cards and docking stations were deployed as replacements for desktop PCs. This kind of equipment change can be disruptive in the short run and require a period of adjustment. Several survey respondents reported slow sign-on processes, difficulties in maintaining a connection away from the office and slow response while connected. One respondent remarked: "CONNECTIONS runs very slow while I am working from my home, and at times I find it easier to just type the notes in Word, and email them to myself." This sentiment was echoed by several other respondents.

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 Schenectady County DSS respondents reported consistently positive impacts on their work resulting from laptop use, shown in Table 2 below. Fifty percent reported improvements in timeliness of documentation, 78% in ability to access case information and 64% percent reported improvements in ability to work in court. Many respondents did not perceive changes when communicating with supervisors (93%) or providing service to clients (86%). None of the respondents reported negative impacts.

Table 2 - Perceived Change Timeliness and Work Impacts – Schenectady 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)	50%(7)	50%(7)	0%(0)
Ability to do work in court	0%(0)	0%(0)	36%(5)	50%(7)	14%(2)
Ability to access case information	0%(0)	0%(0)	21%(3)	64%(9)	14%(2)
Communication with supervisors	0%(0)	0%(0)	93%(13)	7%(1)	0%(0)
Service to clients	0%(0)	0%(0)	86%(12)	14%(2)	0%(0)

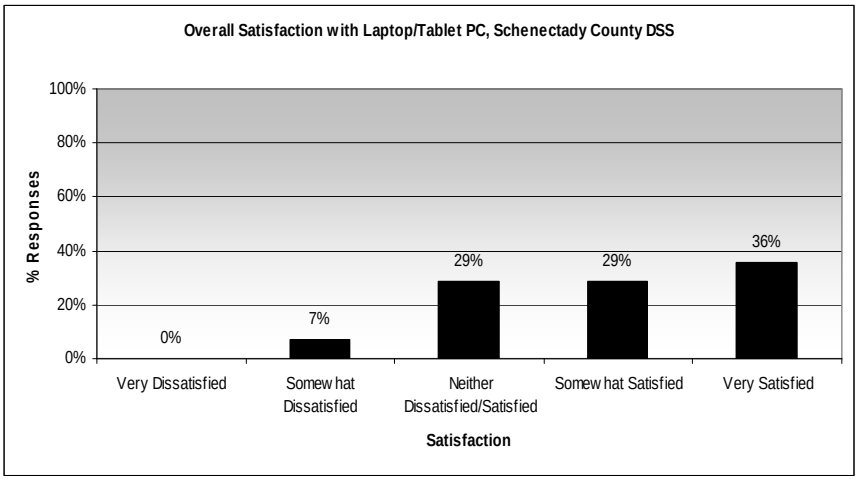
That lack of reported negative impacts on timeliness and other work activities is somewhat inconsistent with the timeliness of documentation results obtained from the central database. It is possible that the reduction in timeliness seen in progress note entry was too small to be noticed by the caseworkers and overshadowed by the increase in rate of case closings.

Several respondents did recognize the overall potential value of laptop. One commented, "Having the laptop allows me more mobility. In cases where I feel I need it, I can bring it. While on call it is a wonderful resource to have at home to look up a history."

Satisfaction

The overall level of satisfaction with the laptops was relatively high. Figure 3 below shows that 65% of respondents expressed being "Somewhat satisfied" or "Very satisfied," compared to only 7% being "Somewhat dissatisfied." Additionally, 29% indicated that they were "Neither dissatisfied/Satisfied."

Figure 3 - Overall User Satisfaction with the Laptops



** Based on survey respondents who took the post survey n = 15. Total number of testers n = 19. Percentages may not add to 100% due to rounding.*

Despite these overall high levels of satisfaction, other factors may be influencing respondents' perceptions of laptop satisfaction. Many caseworkers may have had higher expectations for use at court and in the field and those expectations were not wholly met. One respondent reported, "The use of the laptop in the field is cumbersome, lacks privacy, [and is] time consuming. The Alpha Smart in the field is perfect."

Laptop use regarding job-related stress received mix results from respondents. Fifty percent indicated that it did reduce stress, while the other half felt as though laptops did not lower job-related stress. Those who reported a reduction in stress attributed this to their ability to catch up on work, increased flexibility in working outside of the office, and increased access to information.

The lack of compensation for overtime work was the main reason why respondents felt as though the use of laptop did not reduce their job-related stress. Several others expressed this similar sentiment: "Most of my stress is associated with having too much work and not enough time to do it in. The laptop would assist me in completing some of this work from home, but I am very reluctant to invest a significant amount of time in doing work from home when I am not compensated for it; when I'm home I'd rather spend time with my family than do work for free."

Overall, 79% of respondents would recommend the use of laptops to colleagues, compared to 7% that would not. Additionally, 14% were unsure. The reasons mentioned for this postive recommendation included increased flexibility in where work can be done, increased time efficiency (especially during down times in court), and increased access to information. One respondent pointed out that "the laptop is useful in that it offers flexibility in where and when you can do work and access information. I would recommend using the laptop to my colleagues, for

those willing to work for free from home; the laptop can greatly assist in catching up on documentation and processing case work."

Center for Technology in Government

Assessing Mobile Technologies in Child Protective Services

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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 Seneca County Division of Human Services (DHS). Findings are based on data collected through online surveys, district questionnaires, and analysis of CONNECTIONS data (see Appendix C of the *Demonstration Project's Summary Report* for data collection tools and timeline). The field test lasted for 44 days from 11/26/07-1/9/08

District Deployment

Seneca County DHS has eight CPS staff responsible for child protective services. Seneca County is a rural area located in Central New York and has a population of 34,000 residents. The Seneca County DSS participated in the demonstration project to learn if mobile technologies maximize the use of wait time in court and the field.

The Seneca County DHS deployed eight HP Compaq tc4400 tablets to seven caseworkers and one supervisor on 11/26/07 (see Appendix A of *the Demonstration Project's Summary Report* for device specifications). Each caseworker received their own device, except one laptop that was shared between a supervisor and one caseworker. All devices were deployed with district-provided external broadband cards.

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.
Caseworkers were given a brief overview of the device, shown how to sign-on to CONNECTIONS, and how each feature of the device could be used in the field. Each was given an orientation manual.

Finally, no policies were changed to support the introduction of mobile technologies before or during the pilot period.

Characteristics of Respondents

A total of seven CPS caseworkers participated in this study: six took the baseline survey (response rate 86%); 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 work environment. The Seneca County DSS respondents[1] were very new to CPS field work, with an average of 1.3 years of experience; all six respondents reported CPS experience of three years or less. Respondents were working slightly more overtime during the pilot period. The percentage of respondents reporting overtime of three hours or less in a week did not change (staying around 75% for both the pre- and pilot periods). However, the average overtime hours increased from 2.8 hours a week in the pre-pilot period to 3.9 hours in the pilot period. All respondents reported a typical court waiting time of forty-five minutes or less and 80% reported spending on average one 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.

[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

Seneca County DSS respondents reported using the laptop during normal work hours, after work hours, on-call, and when working overtime. 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, reading and reviewing case histories, completing safety assessments, checking client histories, and email. Overall, three respondents reported using the laptop to access various forms of information from government Web sites at least once a day. Similarly, four respondents accessed email once a day or more, while four respondents reported using their laptop at least once a day or more to access map directions.

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. Very few of Seneca County DSS participants responded to the questions regarding changes in accessing information. However, for those that did, laptop use decreased the frequency of respondents returning to the office while out in the field to access information. Three respondents reported never returning to the office to access case information during the pilot period, compared to only one respondent in the pre-pilot period. Respondents were in the field approximately the same number of days per week (average 3.5 days) in the pre- and pilot periods.

Seneca County DHS had district-provided external broadband cards during the pilot period. While many respondents reported encountering few obstacles, some respondents reported obstacles to mobile use including an inability to establish a connection, slow speed problems, and unreliable connections in all locations. Slow speed seemed to be the most frustrating problem, as well as not being able to establish a connection. Lack of privacy was not a problem for most; however, small blocks of time to do work in court were also perceived as problematic. There were no open-ended survey comments that explained the privacy problems.

Participants were also asked about ease of logging-on in to the device. Overall, 50% of survey respondents rated the log-on process as “Extremely Difficult,” 25% rated it as “Neither difficult nor Easy” and another 25% said it was “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. Two respondents reported using the laptop at home for an average of just over two hours per week and one reported using it in the field for less than one-half hour per week. None of the respondents reported using the laptop in the court house.

Table 1 - Location and Hours of Laptop Use per Week

	Use of Laptop (n)	Average length of use per week
Field	25% (1)	0.25 Hours
Court	0% (0)	0.00 Hours
Home	50% (2)	2.25 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. Respondents reported that they do have a waiting room at the court house that they can use and that the court house has wireless connection. However, respondents spend on average one day a month at court and approximately 70% of respondents reported waiting in court two hours or less during a court visit. Therefore, 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. Also, a few suggested they just have not had an opportunity to use it in court at this point in time.

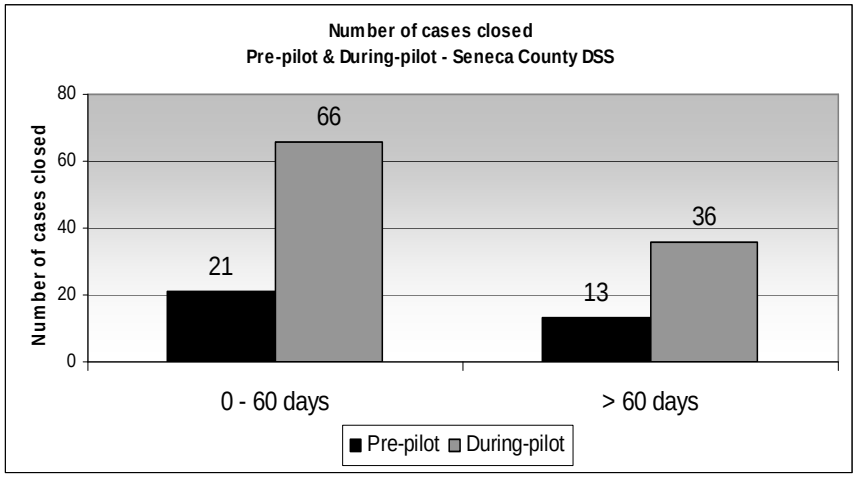
There was not sufficient information from the survey data or district questionnaire to describe what the current policies are with respect to working from home, overtime compensation, or testers' perceptions and opinions about these issues.

Productivity and Efficiency

This analysis uses central database data and survey responses to examine two core questions about possible technology impacts within the Seneca County DHS: (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 dramatically from the pre-pilot (21) to the pilot period (66). The number of cases closed in over 60 days increased substantially as well, from 13 in the pre-pilot period to 36 in the pilot period. This is a marked increase in productivity; the total number of cases closed increased from 34 in the pre-pilot period to 102 in the pilot period – three times the pre-pilot amount. It is important to note that in this county the total number of cases available to be worked on[2] increased from 147 in the pre-pilot period to 168 in the pilot period – a 14.3% increase.

Figure 1 - Number of Seneca County DHS Cases Closed Pre-Pilot and During Pilot

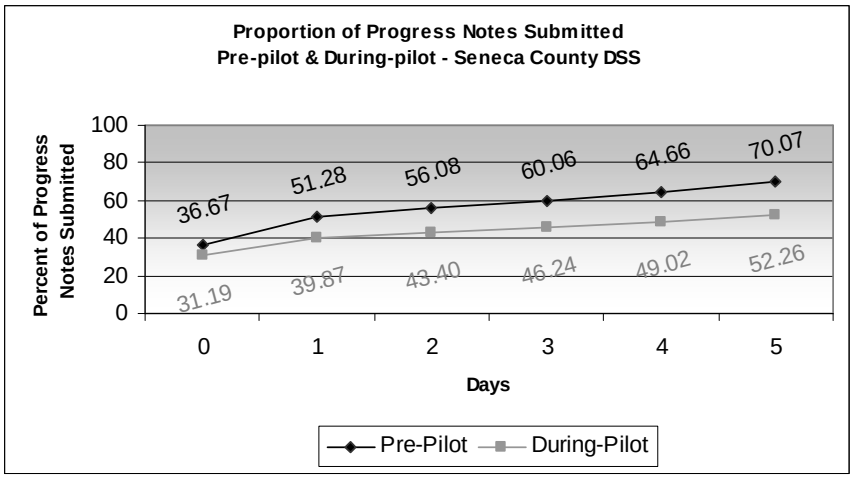


Another indicator of timeliness is elapsed time – or the number of days between an event and the posting of documentation regarding that event in the central database system. Figure 2 below

[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.

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 first day following the event, but only 40% during 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 the fifth day, over 70% of all notes were entered for the pre-pilot period, compared to just over 52% for the pilot. By this measure, timeliness decreased slightly during the test, but is high overall.

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



There may be multiple reasons for the decrease in the timeliness of note entry. The overall increase in case closings during the pilot 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 Seneca County DHS, a total of eight tablet PC's with wireless access cards were deployed. This kind of equipment change can require extra effort in the short-run and a period of adjustment. But, in this case, a few of the respondents reported slow sign-on processes, difficulties in maintaining a connection away from the office or slow response while connected. One respondent did remark: "While logging in at home I experienced extremely long wait times. It was more time efficient to contact the State Central Registry (SCR) and take the report verbally." Another reported lack of connectivity in the southern area of the county. 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 Seneca County DHS respondents reported some positive impacts on their work resulting from laptop use, shown in Table 2 below (very few responded to the questions regarding work impacts). Two of the respondents reported improvements in timeliness of documentation and ability access

case information. One reported improvements in ability to work in court and one respondent reported improvements in providing service to clients. None of the respondents reported improvements in communicating with supervisors or any negative impacts on any work categories.

Table 2 - Perceived Change Timeliness and Work Impacts – Seneca County DHS

	Much worse (n)	Somewhat worse (n)	About the same (n)	Somewhat better (n)	Much better (n)
Timeliness of documentation	0%(0)	0%(0)	75%(3)	0%(0)	25%(1)
Ability to do work in court	0%(0)	0%(0)	75%(3)	25%(1)	0%(0)
Ability to access case information	0%(0)	0%(0)	50%(2)	25%(1)	25%(1)
Communication with supervisors	0%(0)	0%(0)	100%(4)	0%(0)	0%(0)
Service to clients	0%(0)	0%(0)	75%(3)	0%(0)	25%(1)

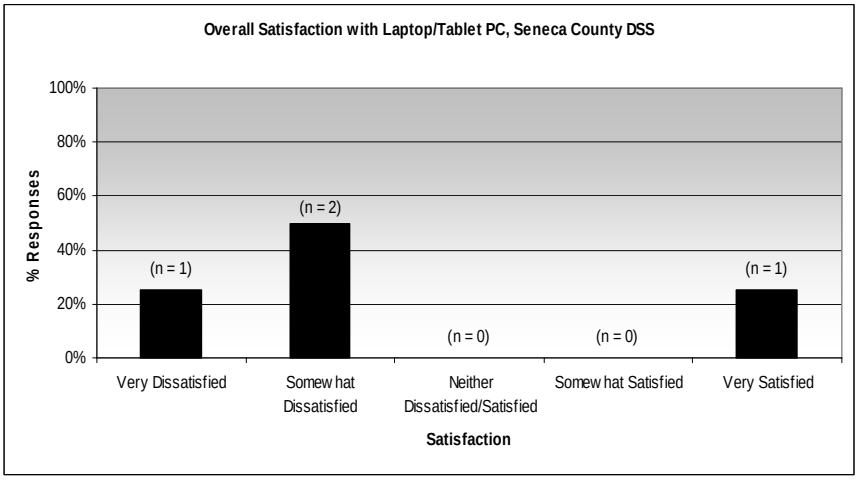
That lack of reported negative impacts on timeliness and other work activities is somewhat inconsistent with the timeliness of documentation results obtained from the central database. It is possible that the reduction in timeliness seen in progress note entry was too small to be noticed by the caseworkers and overshadowed by the increase in rate of case closing.

Several respondents did recognize the overall potential value of the tablet. Positive comments included: “It can go with you as needed whenever needed wherever you go,” and “Information is more accessible and saves time, especially on-call.”

Satisfaction

The overall level of satisfaction with the laptops was low (again, very few participants responded to survey questions on satisfaction). Figure 3 below shows that three of the four respondents expressed being “Somewhat satisfied” or “Very dissatisfied,” compared to only one respondent being “Very satisfied.”

Figure 3 - Overall User Satisfaction with the Laptops



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

Respondents attributed low satisfaction with the laptops to technical difficulties, such as trouble establishing a connection, lengthy boot-up times, and spotty coverage–especially in the southern portions of the county.

Laptop use regarding job-related stress also received mix results from respondents. Two of the four respondents indicated that it did reduce job-related stress, while the other two felt as though laptops did not contribute to lower job-related stress. Stress reduction was attributed mostly to saving time. One respondent described their experience: "More accessible and saves time, especially on-call." Those who did not experience stress reduction attributed this to technical difficulties associated with the wireless connectivity. For example, one respondent said, "Because of the difficulty and time associated with logging-on, it [job-related stress] does not seem to have changed much."

Overall, two respondents would recommend the use of laptops to colleagues, compared to only one who would not. Additionally, one respondent was unsure whether he/she would recommend the use of the laptops to colleagues. One respondent pointed out, "If the situation [with wireless connectivity] could be rectified this could be extremely beneficial. However, at the current state of connectivity, this does not seem to make a difference while working in the field."

Center for Technology in Government

Assessing Mobile Technologies in Child Protective Services

St. Lawrence 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 St. Lawrence County DSS. Findings are based on data collected through online surveys, district questionnaires, and analysis of CONNECTIONS data (see Appendix C of the *Demonstration Project's Summary Report* for data collection tools and timeline). The field test lasted for 60 days from 11/10/07-1/9/08.

District Deployment

St. Lawrence County DSS has 17 CPS staff responsible for child protective services. St. Lawrence County is a rural area with approximately 111,000 residents. St. Lawrence County DSS particpated in the demonstration project to learn if mobile technologies provide caseworkers with increased opportunities and capability to enter case notes while in remote areas.

The St. Lawrence County DSS deployed 16 Dell Latitude D620 laptops to 16 caseworkers on 11/10/07 (see Appendix A of *the Demonstration Project's Summary Report* for device specifications). All caseworkers received their own device and docking stations with keyboards and monitors. Training was done on an individual basis, as needed.

No broadband connection cards were procured for any devices during the pilot period. Therefore, the only 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.

Two policies were instituted during the pilot period as a result of the introduction of mobile technologies into the workplace. First, caseworkers were required to secure the device when it was out of the possession of a caseworker (for example, it was suggested caseworkers lock the laptop in the trunk of car), and second, caseworkers were prohibited from using CONNECTIONS in non-secure 'free wireless' spots. The second policy came about because the data could not be protected. In both periods, with prior approval, caseworkers are allowed to receive compensatory time for working at home after regular work hours.

Characteristics of Respondents

A total of 16 CPS caseworkers participated in this study: 12 took the baseline survey (response rate 75%); 9 took the post-pilot survey (response rate 56%); and 7 took both the baseline and post-pilot surveys (response rate 44%).

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 St. Lawrence County DSS respondents[1] were new to CPS field work, with an average of 2.8 years of experience; 75% reported CPS experience of three years or less. Respondents worked about the same number of overtime hours in the pre-pilot and pilot period. The percentage of respondents reporting overtime of five hours or less in a week slightly decreased from 86% in the pre-pilot period to 83% in the pilot period. However, the average overtime hours slightly decreased from four hours in the pre-pilot period to 3.8 hours in the pilot period. Sixty-seven percent of respondents reported a typical court waiting time of three hours or less and 92% reported spending four 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.

[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

St. Lawrence County DSS respondents reported using the laptop during normal work hours, after work hours, on-call, and when working overtime. St. Lawrence 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. Case documentation was the most frequent use, including inputting and updating notes, dictation, completing safety assessments, reading and reviewing case histories, opening new cases, doing person searches, checking client histories, and email. Eight respondents reported using the laptop to access various forms of information from government Web sites while in the field at least once a day. Similarly, eight respondents accessed email at least once a day or more, while two respondents reported using their laptop at least once a day or more to access map directions.

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. Very few St. Lawrence County DSS participants responded to the questions regarding changes in accessing information. However, for those that did, laptop use did not change (at this point in time) the frequency of respondents returing to the office to access information. Three reported returning to the office to access information four or more times a week in the pre- and pilot periods.

Several respondents commented on some of the often overlooked changes in mobility and communication patterns. For example, one respondent stated, “Instead of having to travel back to the office to do dictation and other work, I can just pull over or go to any spot that has internet access to do my work. This cuts down on my travel time, giving me more time to get things done.” Another said, “I sometimes stop at people's homes if they are on my way to work. After a visit, I type my dictation from that visit into my laptop. I also sometimes use the laptop to retrieve info from CONNECTIONS.”

St. Lawrence County DSS did not have district-provided external broadband cards during the pilot period. While out of the office, respondents reported using ‘hot spots’ and while at home, most used their personal Internet Service Providers (ISPs). The court house does not currently have wireless access. Several respondents noted that the area does not have a reliable wireless carrier and this makes accessing ‘hot spots’ very difficult. Those who were able to connect in different locations reported some obstacles to mobile use, including the inability to establish a connection in all locations. One participant expressed, “Internet access is spotty in our county and at home. It takes time to log-on and off and to access client records in CONNECTIONS.” Small blocks of time or privacy issues were not seen as major problems at the court house, or while in the field or at home.

Participants were also asked about ease of logging-on to the device. Overall, 75% said it was “Easy” to “Extremely Easy, ” 25% rated it as “Neither difficult nor Easy,” and none of the respondents rated the log-on process as “Difficult” or “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. Six respondents reported using the laptop at

home, for an average of over three hours per week, six people used it in the field for over 9.5 hours a week, and four used the laptop in court for on average 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	67% (6)	9.57 Hours
Court	44% (4)	0.83 Hours
Home	67% (6)	3.43 Hours
Do not use at all	0% (0)	--

** Based on survey respondents who took the post survey n=9. Total number of testers n=16.*

In the survey open-ended comments participants stated the importance of having the laptop with them in the field to type or dictate notes. One respondent stated, "I can type notes into my laptop at home or in the field, making it take less time to type the notes because the information is fresh." However, a few did not find the adjustment in work practices as easy. Another stated, "Because my work habits have not changed since using it, I am not comfortable using my laptop in the field and am unsure of how to use it, therefore I just don't."

The amount of time caseworkers spend in court suggests that is an unexploited location for mobile work in most districts. St. Lawrence County DSS respondents spend on average of 2.5 days a month at court and wait approximately 2.5 hours during a court visit. However, caseworkers may not be using the laptop in the court house or the field because of other competing interests that may limit the amount and type of work they can do. The number of opportunities to use the laptop may be limited for some due to changes in work practices and not having connectivity.

Caseworkers could work from home for overtime reasons and receive compensatory time if they received prior approval. No problems were reported with overtime approvals during the pilot period. Several respondents stated that working from home was now more efficient because it increased their flexibility. One stated, "[The laptop] allows me to access CONNECTIONS at home so I may complete a case and submit to my supervisor."

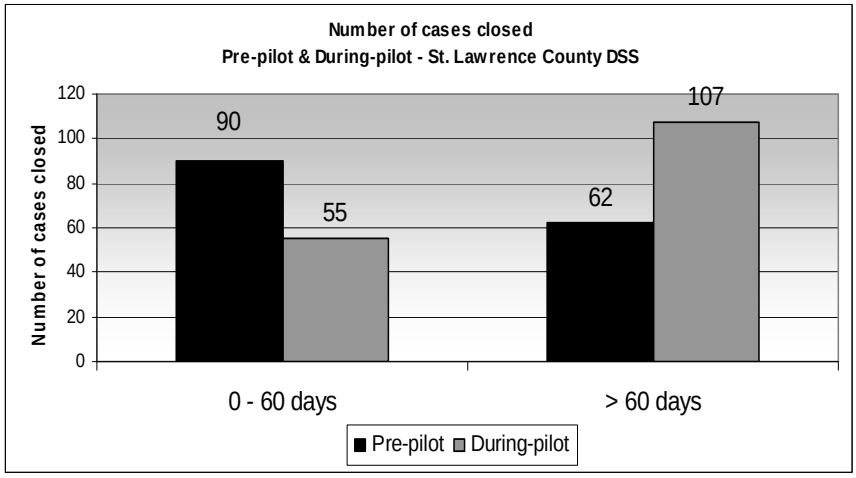
Productivity and Efficiency

This analysis uses central database data and survey responses to examine two core questions about possible technology impacts within the St. Lawrence 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) decreased from the pre-test period (90) to the test period (55). However, the number of cases closed in over 60 days increased substantially from 62 in the pre-pilot period to 107 in the pilot period. This is a moderate increase in productivity during the pilot period; the total number of cases closed increased from 152 in the pre-pilot period to 162 during the pilot – a 6.6% increase. It is important to note that in this county the total number

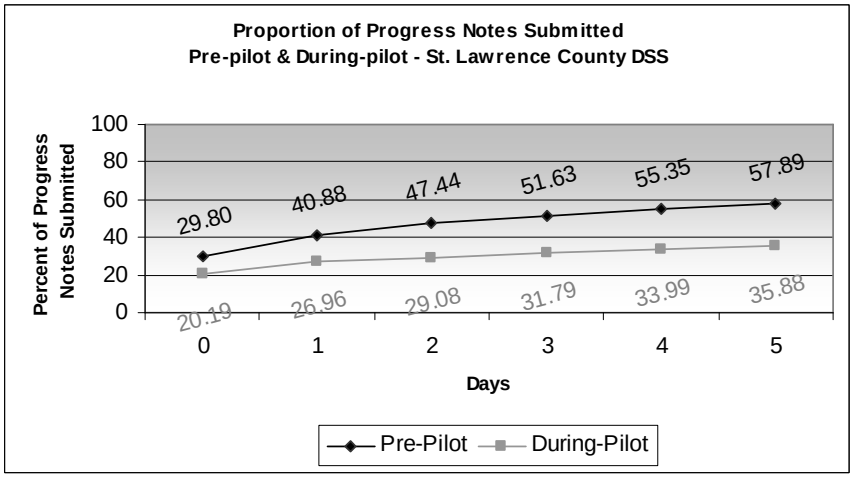
of cases available to be worked on[2] decreased from 369 in the pre-pilot period to 288 in the pilot period – a 22% decrease.

Figure 1 - Number of St. Lawrence 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 fifth day following the event, but only 35% during the pilot period. Contrary to expectations, the proportion of progress notes entered in each time period during the test is consistently below that of the pre-pilot period. By this measure, timeliness decreased slightly during the test.

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 closing cases over 60 days during the test may have changed the usual pattern of progress note entry. The use of new technology also requires a period of adjustment. In St. Lawrence County DSS, a total of 16 laptop with docking stations were deployed. This kind of equipment change can

[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.

require extra effort in the short run and require a period of adjustment. In addition, no wireless access cards were deployed with the laptops, due to the absence of a reliable wireless network access provider in the county. A few respondents reported slow sign-on processes and difficulties in maintaining a connection away from the office or slow response while connected. One respondent did remark, "The laptop takes a long time to start up each time it is used, whether at the office or in the field." Another reported difficulty saving documents. 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 St. Lawrence County DSS respondents reported some positive impacts on their work resulting from laptop use, shown in Table 2 below. For documentation, six of the eight respondents reported improvements in timeliness of documentation and four respondents reported improved ability to access case information. Reported ability to work in court improved for three respondents and two each reported improvements in ability to communicate with supervisors and provide service to clients. The only reported negative impact was one respondent's report of a negative impact on ability to work in court.

Table 2 - Perceived Change Timeliness and Work Impacts – St. Lawrence County

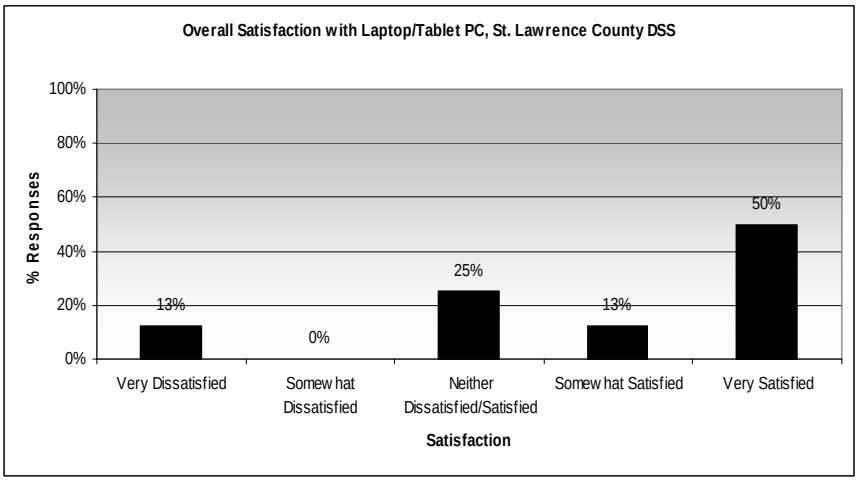
	Much worse (n)	Somewhat worse (n)	About the same (n)	Somewhat better (n)	Much better (n)
Timeliness of documentation	0%(0)	0%(0)	25%(2)	25%(2)	50%(4)
Ability to do work in court	0%(0)	13%(1)	50%(4)	25%(2)	13%(1)
Ability to access case information	0%(0)	0%(0)	50%(4)	25%(2)	25%(2)
Communication with supervisors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

This 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. It is possible that the reduction in timeliness seen in progress note entry was too small to be noticed by the caseworkers and overshadowed by the increase in the rate of case closings.

Satisfaction

The overall level of satisfaction with the laptops was moderate. Figure 3 below shows that 63% of all respondents expressed being "Somewhat satisfied" or "Very satisfied," compared to 13% being "Very dissatisfied." Additionally, one-quarter of respondents indicated that they were "Neither dissatisfied/Satisfied."

Figure 3 - Overall User Satisfaction with the Laptops



** Based on survey respondents who took the post survey n =9. Total number of testers n = 16.*

Positive recommendations were attributed to the value of the laptop to CPS work. Positive comments included the following: "Every caseworker working with families either in CPS or foster care/preventive services should have access to a laptop. It has helped me be more efficient," and "CPS work depends on a high level of flexibility and adapting. The laptop allows me to be more flexible and stay on top of tasks."

Mixed recommentations or negative perceptions were attributed to caseworkers' unfamiliarity with the laptops' capabilities and functionality as well as the lengthy boot-up times and the lack of a district-provided external broadband card. It could also be the case that having a laptop produced higher expectations for use at court and in the field, expectations that were not wholly met.

The role of the laptop in reducing job-related stress received mix results from respondents. Fifty percent indicated that it did reduce stress, while the other half felt as though laptops did not contribute to lower job-related stress. Those who reported a reduction in stress attributed it to their ability to catch up on their work, just knowing the laptop is available, and having the flexibility of working on documentation outside of the office. One caseworker said, "I have not had an overdue investigation since having the laptop. I can do my dictation in the field. I have cut down on time wasted in court and in the field. I can work at home if needed." Those who did not see the laptop as reducing stress indicated, "Just having the laptop does not stop the cases from piling up and does not help with getting documentation completed if you have too many cases to begin with."

Overall, 88% of respondents would recommend the use of laptops to colleagues. The reasons mentioned for positive recommendations included increased flexibility in ability to do work and

ability to use time more efficiently. One caseworker pointed out, “CPS work depends on a high level of flexibility and adapting. The laptop allows me to be more flexible and stay on top of tasks.”

Center for Technology in Government

Assessing Mobile Technologies in Child Protective Services

Suffolk 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 Suffolk County DSS. Findings are based on data collected through online surveys, district questionnaires, and analysis of CONNECTIONS data (see Appendix C of the *Demonstration Project's Summary Report* for data collection tools and timeline). The field test lasted 71 days from 10/30/07 to 1/9/08.

District Deployment

Suffolk County DSS has approximately 90 CPS staff responsible for child protective services. Suffolk County, is a mix of urban and rural areas occupying the western two-thirds of Long Island. Suffolk county has approximately 1.5 million residents and responds to between 8,000 – 9,000 State Central Registry (SCR) reports per year (the highest volume in the state, with the exception of New York City). The Suffolk County DSS participated in the demonstration project to learn if mobile technologies can improve caseworker productivity by providing more opportunities to enter progress notes while out of the office.

The Suffolk County DSS deployed 30 Dell Latitude D620 laptops to 25 caseworkers on 10/30/07 (see Appendix A of *the Demonstration Project's Summary Report* for device specifications). Suffolk County DSS is devising a deployment strategy for the five remaining laptops. Twenty-five caseworkers received their own device and docking stations with keyboards and monitors were. All laptops were deployed with district-provided external broadband cards. 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.

Suffolk County DSS held a “kick-off” breakfast celebration to encourage participation in the demonstration project and give the laptops to caseworkers; at this breakfast, each person received their device. The Suffolk County Police Department provided “Computer and Network Security” training to all participants and individual training was provided as needed.

One policy was modified from the pre-pilot period to support the introduction of mobile technologies during the pilot period. During the pilot period, caseworkers assigned to the demonstration project were instructed to spend four full days in the field (rather than the prescribed three days). One policy was created as a result of the introducing laptops into the work environemnt. During the pilot period, participants were required to submit “Field Itinerary and Usage Logs” to their supervisors.

Characteristics of Respondents

A total of 25 CPS caseworkers participated in this study: 23 took the baseline survey (response rate 92%); 21 took the post-pilot survey (response rate 84%); and 21 took both the baseline and post-pilot surveys(response rate 84%).

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 Suffolk County DSS respondents[1] were moderately experienced in CPS field work, with an average of 3.9 years of experience; 55% reported CPS experience of two years or less. Respondents worked about the same number of overtime hours in the pre-pilot and pilotp periods. The percentage of respondents reporting overtime of three hours or less in a week did not change (staying at 91% for both in the pre- and pilot periods). However, the average overtime hours slightly increased from one hour in the pre-pilot period to 1.4 hours during the pilot period. Most of the respondents reported they average just below two hours or less of overtime a week. Eighty-six percent of the respondents reported a typical court waiting time of four hours or less and 87% reported spending three or fewer days in court per month.

Mobility

The laptops provided caseworkers with 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

Suffolk County DSS respondents reported using the laptop during normal work hours, after work hours, and when working overtime. Suffolk 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. Other work included reading and reviewing case histories, opening new cases, closing cases, doing person searches, checking client histories, and accessing documents, forms, and email. Eighty percent of respondents reported using the laptop to access various forms of information from government Web sites at least once a day. Similarly, 95% of respondents accessed email once a day or more, while 52% of respondents reported using their laptop at least once a day or more to access map directions. One respondent stated that the ability to review cases in the field provided "a good understanding of the case prior to making a visit. Made for more efficient visits." Other respondents said that they used the laptops to look up phone numbers and addressess as well as editing or creating documents in Microsoft Word.

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 slightly less frequently during the pilot period. Thirty-three percent reported never returning to the office to access case information during the test period, compared to only 24% in the pre-pilot period. Participants were required to be in the field four full days during the pilot period. The survey data shows that respondents were in the field slightly more during the pilot period than the pre-pilot period (2.8 days in the pre- and 3.1 during the pilot period). This small shift may be accounted for in the increased number of respondents working four days in the field (38% of respondents reported working four days in the field during the pilot period, compared to only 10% in the pre-pilot period).

Respondents did comment on the district-imposed field day requirementote in open-ended survey comments. Several respondents felt this was a good change and also encouraged the use of portable printers; other respondents did not like the schedule change. One respondnet expressed the difficulty in setting strict rules: "Everyone's job schedule is different…There will be weeks that I can be in the office (having access to fax machines, supervisors, and resources at my desk) for four full days. There are other weeks that I will need to be out in the field for four days."

Several respondents commented on some of the more subtle changes in mobility and communication patterns. One caseworker stated, "I feel that using the laptop was better because it allowed us to view case history and be connected in the field with the office. I was able to check my e-mails in a timely manner and if I needed to send something to my supervisor, I could do it that day and not wait until my next office day."

Suffolk County DSS had district-provided external broadband cards during the pilot period. Respondents reported several obstacles to mobile use including the inability to establish a connection, slow speed and unreliable connections in all locations, as well as loss of user profiles

when the laptop was connected to the docking station in the office. Several respondents described a range of issues while working on the laptop, from losing files, not having access to email or other important applications, to applications freezing. One respondent described their experience: "I found logging-in took longer and it was slower. Also the screen was difficult to read, particularly if using the laptop on battery. If I tried to use it in my car, the screen was unreadable (due to sunglare). It did improve when I plugged the laptop into my car. Also, there were issues with slowness, sometimes it froze for long periods." Other respondents simply stated: "Depending on the area, it is sometimes difficult to get a good connection, but most times, the connection is good." Security concerns were mentioned as well. One respondent said, "Leaving the computer in my car while in certain neighborhoods places myself and the computer at risk."

Participants were also asked about ease of logging-on to the device. Overall, 28% said it was "Easy" to "Extremely easy," 48% rated it as "Neither difficult nor Easy," and another 24% of respondents rated the log-on process as "Difficult" to "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, respondents reported using the laptop most frequently in the field (81%), for an average of nine hours per week, and 57% of respondents used it at home for an average of 1.5 hours per week. Thirty-three percent used 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	81% (17)	9.33 Hours
Court	33% (7)	0.47 Hours
Home	57% (12)	1.55 Hours
Do not use at all	0% (0)	--

** Based on survey respondents who took the post survey n=21. Total number of testers n=25.*

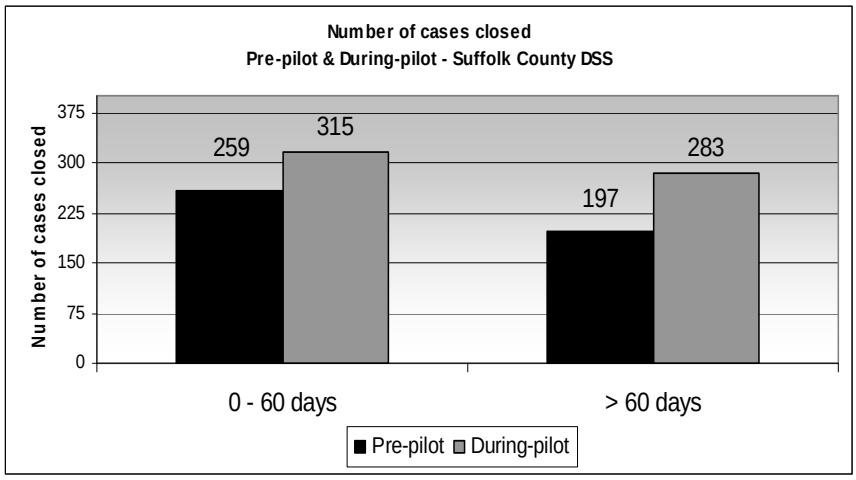
The amount of time caseworkers spend in court suggests that it is an unexploited location for mobile work in most districts. Respondents spend on average of two days a month at court and wait on average 3.2 hours during a court visit. However, respondents were using the laptop in the court house on average less than one-half hour per week. 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. Several respondents reported that at times the "court workers" occupied all of the potential work places in the court buildings; respondents also had difficulty establishing a connection or experienced an unreliable connection.

Productivity and Efficiency

This analysis uses central database data and survey responses to examine two core questions about possible technology impacts within the Suffolk 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-test period (259) to the test period (315). The number of cases closed in over 60 days increased substantially as well, from 197 in the pre-pilot period to 283 during the pilot period. This is a substantial increase in productivity during the test period; the total number of cases closed increased during the test period, from 456 in the pre-test to 598 during the test—a 31% increase. It is important to note that in this county the total number of cases available to be worked on[2] decreased slightly from 947 in the pre-pilot period to 922 during the pilot period – a 2.6% decrease.

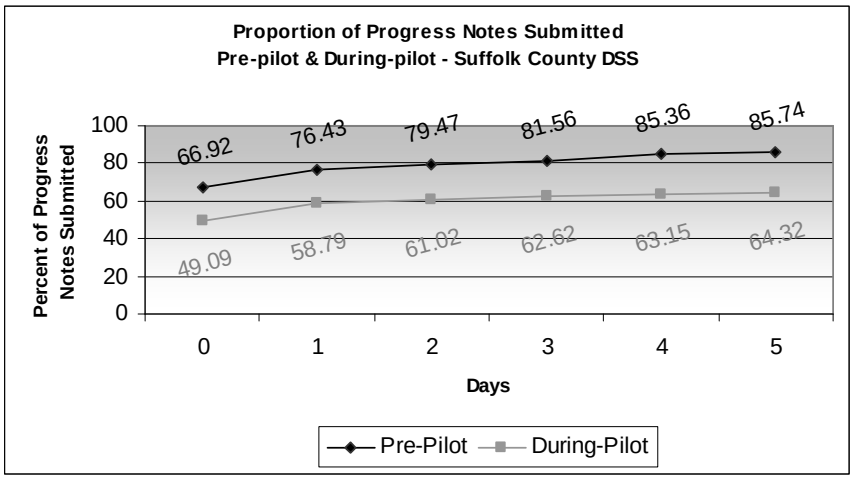
Figure 1 - Number of Suffolk County DSS Cases Closed Pre-Pilot and During Pilot



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 of the event, but only 49% during the pilot period. By the fifth day following the event, 85% of the notes were entered for the pre-pilot period, but only 64% for the pilot period. Contrary to expectations, the proportion of progress notes entered in each time period during the test is consistently below that of the pre-pilot period. By this measure, timeliness decreased slightly during the test, but is 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 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.

The use of new technology also requires a period of adjustment. In Suffolk County DSS, a total of 25 laptops with external wireless broadband cards and docking stations were deployed. This kind of equipment change can require extra effort in the short-run and require a period of adjustment. In this case several survey respondents reported slow sign-on processes, difficulties in maintaining a connection away from the office, or slow response while connected. One respondent noted:

> It was extremely slow. It took up to a half-hour to forty-five minutes to get it to completely log-on some mornings. It would freeze quite often, thus making it take much longer to complete anything I was doing. The laptop takes a long time to start up each time it is used, whether at the office or in the field.

Another reported, “When connected with the wireless card, if the connection wasn't at maximum reception, it performed slowly.” It is not clear, however, how common these problems were.

Some additional adjustments to these deployment issues 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 Suffolk County DSS respondents reported some positive impacts on their work resulting from laptop use, shown in Table 2 below. For documentation, 60% of the respondents reported improvements in timeliness of documentation and improved ability to access case information.

Reported ability to work in court improved for 39% of respondents, and 45% reported improvements in ability to communicate with supervisors; another 40% reported improvements in service to clients. There were also reported negative impacts, including 20% of respondents reporting negative impacts in timeliness of documentation, 15% reporting negative impacts in ability to access information and service to clients. Plus one respondent reported diminished ability to communicate with supervisors. None of the respondents reported negative impacts on work in court.

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

	Much worse (n)	Somewhat worse (n)	About the same (n)	Somewhat better (n)	Much better (n)
Timeliness of documentation	15%(3)	5%(1)	20%(4)	50%(10)	10%(2)
Ability to do work in court	0%(0)	0%(0)	61%(11)	33%(6)	6%(1)
Ability to access case information	10%(2)	5%(1)	25%(5)	30%(6)	30%(6)
Communication with supervisors	0%(0)	5%(1)	50%(10)	30%(6)	15%(3)
Service to clients	5%(1)	10%(2)	50%(10)	30%(6)	5%(1)

The reported negative impacts on timeliness and other work activities is somewhat consistent with the timeliness of documentation results obtained from the central database. These negative reports were not overshadowed by the increased rate of case closing.

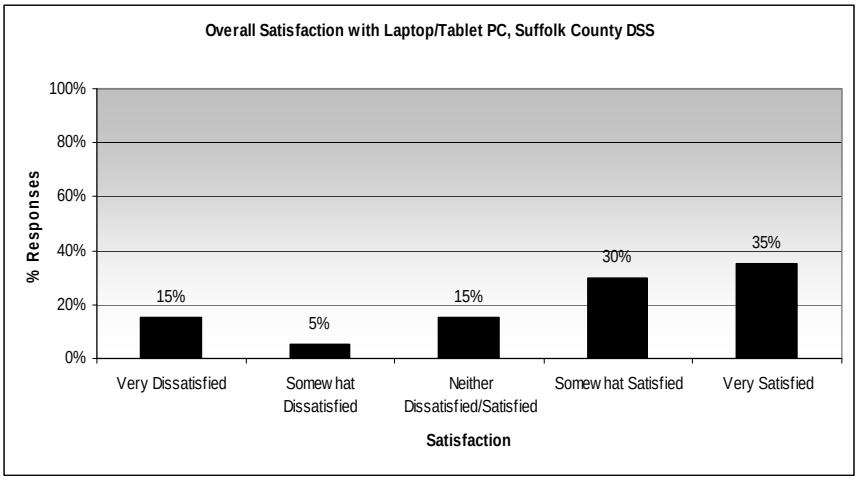
Several respondents did recognize the overall potential value of the laptops. Positive comments included:

> I think it makes a lot of sense, especially when some of the areas we work are far. Having access to information in the field has allowed me to take advantage of the time when a client does not show up for an appointment or when an unannounced visit is negative.

Satisfaction

The overall level of satisfaction with the laptops is high. Figure 3 below shows 65% of respondents expressed being “Somewhat satisfied” or “Very satisfied,” compared to 20% being “Somewhat dissatisfied” or “Very dissatisfied.” Another 15% were “Neither dissatisfied/Satisfied.”

Figure 3 - Overall User Satisfaction with the Laptops



** Based on survey respondents who took the post survey n =21. Total number of testers n = 25.*

Despite these overall high levels of satisfaction, respondents reported technical difficulties, such as loss of connection, trouble establishing a connection, and lack of connection in court as occasionally problematic. Some areas of the county, such as the North Shore, were described as having poor wireless coverage. It could also be the case that having a laptop produced higher expectations for use at court and in the field, expectations that were not wholly met. One respondent reported:

> "Sometimes it worked fine. Often, it was extremely slow. I often had to restart the computer because H:\drive\email\connections were not available. I often lost my connection while attempting to enter notes."

Laptop use was generally seen as contributing to lower job-related stress; 67% of respondents said that it did reduce stress, while one-third 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 having the flexibility of working on documentation outside of the office. One respondent described their reasons: "[The] ability to catch up with work while I have 'down time' in the field, ability to work from home if needed, ability to work from home or in field in inclement NY weather/snow/ice and not worrying about driving to the office." Connectivity-related problems were the main reason caseworkers felt as though the use of laptops did not lower job-related stress. Several caseworkers expressed this sentiment: "Having a laptop added greatly to my stress level. It was so slow, I have difficulty typing on the keyboard and not touching the small blue mouse, it took so long to log-on, it freezes continually."

Overall, 65% of respondents would recommend the use of laptops to colleagues. The reasons mentioned for this included that it improves ability to serve clients and increases caseworkers' ability to use time more efficiently.

Center for Technology in Government

Assessing Mobile Technologies in Child Protective Services

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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.

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This profile presents findings for the Ulster County DSS. Findings are based on data collected through online surveys, teleconferences, district questionnaires, and analysis of CONNECTIONS data (see Appendix C of the *Demonstration Project's Summary Report* for data collection tools and timeline). The field test lasted for 51 days from 11/19/07- 1/9/08 (please note that the pilot period took place during holiday and vacation periods).

District Deployment

Ulster County DSS has 31 CPS staff responsible for child protective services. Ulster County is a rural area in Southern New York with approximately 184,000 residents. The Ulster County DSS participated in the demonstration project to learn if mobile technologies can provide caseworkers with the means necessary to make more efficient use of their time in the field by providing more opportunities to access and enter information.

The Ulster County DSS deployed 31 Dell Latitude D620 laptops to 22 CPS caseworkers and one supervisor between the dates of 10/17/07 and 11/19/07 (see Appendix A of *the Demonstration Project's Summary Report* for device specifications). Participants received individual training as needed and, in addition, security procedures were discussed at the time of deployment.

All caseworkers received their own device and docking stations with keyboards and monitors. Each device was deployed with district-provided external broadband cards. 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.

Finally, no policies were changed to support the introduction of mobile technologies during the pilot period.

Characteristics of Respondents

A total of 22 CPS caseworkers participated in this study: 12 took the baseline survey (response rate 55%); 14 took the post-pilot survey (response rate 64%); and 10 took both the baseline and post-pilot surveys (response rate 45%).

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 Ulster County DSS respondents[1] were new to CPS field work, with an average of 2.9 years of experience; 58% reported CPS experience of two years or less. Respondents were working more overtime hours during the pilot period. The percentage of respondents reporting overtime of three hours or less in a week decreased from 90% in the pre-pilot period to 44% in the pilot period. As a result, the average overtime hours increased from 2.1 hours in the pre-pilot period to 3.2 hours in the pilot period. Fifty percent of respondents reported a typical court waiting time of forty-five minutes or less and 75% reported spending one or fewer days in court per month.

Mobility

The laptops provided caseworkers with 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

Ulster County DSS respondents reported using the laptop during normal work hours, after work hours, and when working overtime. Ulster County DSS desktops were removed and docking

[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.

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, reading and reviewing case histories, opening new cases, completing safety assessments, checking client histories, email, checking the Welfare Management System (WMS), sex offender registry, and doing word processing. Overall, 92% of respondents reported using the laptop to access various forms of information from government Web sites at least once a day. Similarly, 92% of respondents accessed email once a day or more, while 77% of respondents reported using their laptop at least once a day or more to access map directions.

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. Fifty percent reported never returning to the office to access case information during the test period, compared to only 22% before the test. Respondents were in the field approximately the same number of days per week (average 2.5 days) in the pre- and pilot periods.

Several respondents commented on some of the often overlooked changes in mobility and communication patterns. Various situations can affect caseworkers in very similar, but also different ways. One respondent commented: “My territory is about an hour away from the office. Having the laptop also allows me to see if new cases have been obtained, in order to plan my day accordingly, and to search for history without having to be in the office.” Another stated, “It allows me to record information for other caseworkers without returning to the office (on our in-days), and allows me the flexibility to enter information in a timely manner when details are of great importance (especially on a Friday afternoon/night). It is especially helpful for after-hours work, as it allows me to view details of a family's CPS history from the field.”

However, if caseworkers cannot get connectivity, its value decreases, one respondent stated, “I would like to be able to use the laptop while in the field and or at home. I am unable to use the laptop at home and in the field because I do not get a signal to get on-line. Less traveling helps the miles and gas on my car and the time factor. It takes less time to be able to use the laptop at home or in the field then to travel back to the office.”

Ulster County DSS had district-provided external broadband cards during the pilot period. Survey respondents reported several obstacles to mobile use including the inability to establish a connection mostly at home and while in the field, slow speed problems in all locations, and unreliable connections mostly while in the field. Minor problems, however, were found in all locations. Several expressed a lack of privacy to be problematic while in the field, others did not. Small blocks of time were percieved as problematic in court and while in the field. One respondent described: “The uncertainty of not knowing how long my wait time will be in court is frustrating because of the time it takes to establish a connection; in addition, other social service workers wanting to use my equipment is frustrating.”

Participants were also asked about ease of logging-onto the device. Overall, 31% said it was “Easy” to “Extremely Easy,” 54% rated it as “Neither difficult nor Easy,” and another 15% of respondents rated the log-on process as “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, respondents reported using the laptop most frequently at home (50%) for an average of about three hours per week, and in the field (43%) for over seven hours per week. Thirty-six percent of respondents used the laptop in 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	43% (6)	7.36 Hours
Court	36% (5)	0.55 Hours
Home	50% (7)	3.09 Hours
Do not use at all	7% (1)	--

** Based on survey respondents who took the post survey n=14. Total number of testers n=22.*

The amount of time caseworkers spend in court suggests that it is an unexploited location for mobile work. During the teleconferences, respondents noted that caseworkers have a dedicated waiting room at court they can use, in addition the court house was wireless. Ulster County DSS respondents spend on average one day a month at court and spend on average 1.77 hours 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.

Caseworkers could work from home using the laptop for overtime reasons and received flex time. However, there is no formal policy in place regarding overtime hours using the laptop or working from home. Respondents expressed that working from home was now more efficient because of the increased flexibility in where work was completed and the time they have to do different tasks. One respondent described the following situation: “at the end of the day, instead of going back to the office, I can go home to do work. I do this about 1-2 times in a week and I believe this situation increases my efficiency, saves time, gas, and my personal life.”

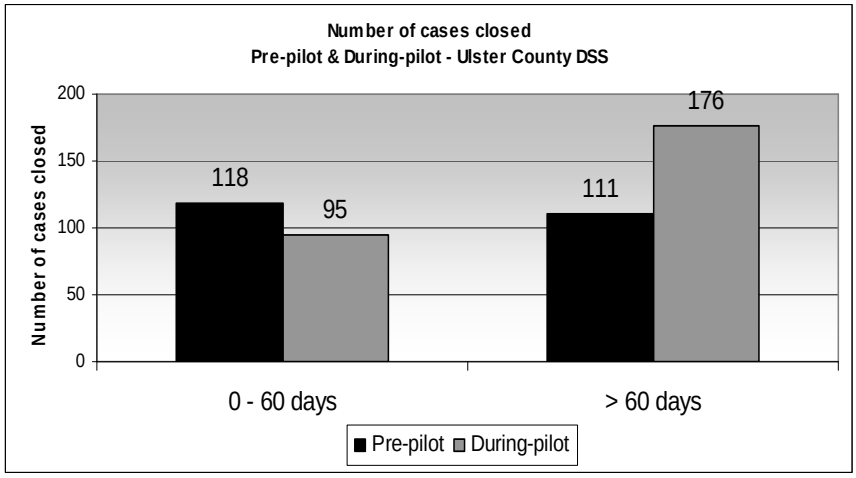
Productivity and Efficiency

This analysis uses central database data and survey responses to examine two core questions about possible technology impacts within the Ulster 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) decreased somewhat from the pre-test period (118) to the test period (95). However, the number of cases closed in over 60 days increased from 111 in the pre-pilot period to176 in the pilot period. This is a marked increase in productivity during the test period; the total number of cases closed increased during the pilot period from 229 in the pre-pilot period to 271 during the pilot period – an 18% increase. It is important to note that in

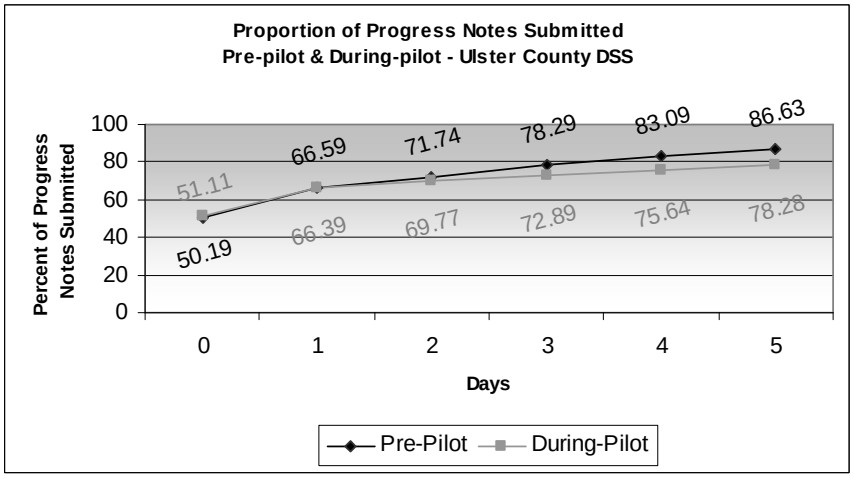
this county the total number of cases available to be worked on[2] increased slightly from 645 in the pre-pilot period to 651 during the pilot period – about a 1% inccrease.

Figure 1 - Number of Ulster 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 the pre-pilot and pilot periods, roughly two-thirds of all progress notes were entered by the day after the event. By the fifth day following the event, over 86% of the notes were entered for the pre-pilot period and during the pilot period 78% were entered. Contrary to expectations, the overall proportion of progress notes entered in each time period during the pilot was slightly, but consistently, below that of the pre-pilot period. By this measure, timeliness decreased very slightly during the pilot, but was high overall.

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



There may be multiple reasons for this small 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.

[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.

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 Ulster County DSS, a total of 31 laptops with docking stations and 30 external broadband cards 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, a few survey respondents reported slow sign-on processes along with difficulties in maintaining a connection away from the office or slow response while connected. One respondent noted: "It takes a long time to log on in the docking station but takes even longer in the field and has gotten 'jammed' on me several times." Another reported, "I have difficulty accessing local drives (H and/or I-drive)." 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 Ulster County DSS respondents reported some positive impacts on their work resulting from laptop use, shown in Table 2 below. For documentation, 38% of respondents reported improvements in timeliness of documentation and 75% reported improved ability to access case information. Reported ability to work in court also improved for 45% of respondents, while 16% reported improvements in ability to communicate with supervisors. Thirty-three percent reported improvements in service to clients. There were no reported negative impacts.

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

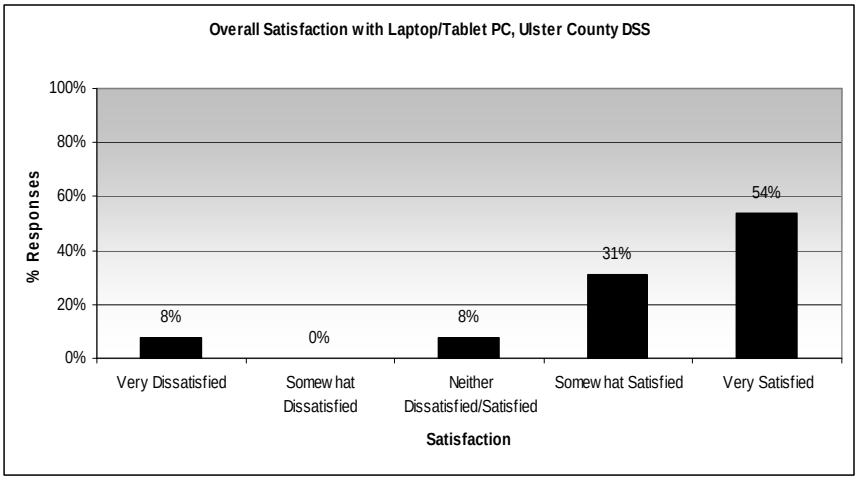
	Much worse (n)	Somewhat worse (n)	About the same (n)	Somewhat better (n)	Much better (n)
Timeliness of documentation	0%(0)	0%(0)	62%(8)	23%(3)	15%(2)
Ability to do work in court	0%(0)	0%(0)	55%(6)	18%(2)	27%(3)
Ability to access case information	0%(0)	0%(0)	25%(3)	33%(4)	42%(5)
Communication with supervisors	0%(0)	0%(0)	83%(10)	8%(1)	8%(1)
Service to clients	0%(0)	0%(0)	67%(8)	25%(3)	8%(1)

The lack of reported negative impacts on timeliness and other work activities is somewhat consistent with the timeliness of documentation results obtained from the central database because the decrease in timeliness was very small.

Satisfaction

The overall level of satisfaction with the laptops was high. Figure 3 below shows that 85% of respondents expressed being “”Somewhat satisfied” or “Very satisfied,” compared to only 8% being “Very dissatisfied.” An additional 8% indicated that they were “Neither dissatisfied/satisfied.”

Figure 3 - Overall User Satisfaction with the Laptops



** Based on survey respondents who took the post survey n = 14. Total number of testers n = 22.*

Despite these overall high levels of satisfaction, respondents reported technical difficulties such as lengthy boot-up times, trouble accessing CONNECTIONS and local drives (H and/or I drives), and slow connection speeds. Some areas of the county were described as having poor wireless coverage. One respondent described the process:

> One time I couldn’t get a connection and had to wait until later to try again. The only issue, it’s really not a problem, I have with using the laptop in the field in that it takes about five minutes to connect and I don't like to go through the set-up process unless I know I’ll have at least 15 or 20 minutes to use it once it’s connected and in the field I don’t always have that luxury.

Laptop use was generally seen as contributing to lower job-related stress; 64% of respondents said that it did reduce stress, while 36% said it did not. Those who reported a reduction in stress attributed it to their ability to catch up on their work, just knowing the laptop is available, the increased access to information, and having the flexibility of working on documentation outside of the office. One respondent said, “Work can be completed whenever I feel like doing it, thereby decreasing my stress level immediately. If I am in the field I can access information to more thoroughly assess new families I am involved with. I like knowing that my work is done, so once I type it into the laptop I can relax for my evening at home with my family with no work-related stress.”

Overall, all of the respondents would recommend the use of the laptops to colleagues. One respondent said, “I am very excited about the use of the laptops in the field. I feel that it will make my time more efficient. While doing removals or informal relative arrangements, background checks can be done immediately and thoroughly while with the family. It will make the completion

of the FASP a more interactive process with the family as well, and therefore make the information more reliable and effective for casework practices."

Center for Technology in Government

Assessing Mobile Technologies in Child Protective Services

Washington 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 Washington County DSS. Findings are based on data collected through online surveys, teleconferences, district questionnaires, and analysis of CONNECTIONS data (see Appendix C of the *Demonstration Project's Summary Report* for data collection tools and timeline). The field test lasted 55 days from 11/14/07- 1/9/08.

District Deployment

Washington County DSS has 13 CPS staff responsible for child protective services. Washington County is a rural, agricultural area in Northeast New York and has approximately 63,000 residents. The Washington County DSS participated in the demonstration project to learn if mobile technologies increase caseworkers' performance by creating more opportunities to directly access CONNECTIONS from court and other remote areas. The county is geographically dispersed and, as a result, caseworkers spend a large amount of time traveling to and from the office. The hope is that mobile technologies will alleviate the need to travel to and from the office as frequently to enter and access information.

The Washington County DSS deployed 12 Dell Latitude D620 laptops to 12 CPS caseworkers between the dates of 11/15/07 and 11/28/07 (see Appendix A of *the Demonstration Project's Summary Report* for device specifications). Each person received their own laptop and docking stations with keyboards and monitors. External Verizon broadband cards were ordered, but not received during the pilot period. Therefore, the wireless connectivity options were public 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.

Formal training sessions were not conducted, however, if caseworkers had any questions, they were told to ask the Computer Coordinator. Caseworkers were advised to be mindful of the security issues related to data stored on the laptops, as well as the proper precautions for storing their laptops.

Finally, no policies were changed to support the introduction of mobile technologies in the pre-pilot or pilot period.

Characteristics of Respondents

A total of 12 CPS caseworkers participated in this study: nine took the baseline survey (response rate 75%); six took the post-pilot survey (response rate 50%); and five took both the baseline and post-pilot surveys (response rate 42%).

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 Washington County DSS respondents[1] were moderately experienced in CPS field work, with an average of 4.2 years of experience; 56% reported CPS experience of three years or less. Respondents were working less overtime during the pilot period. The percentage of respondents reporting overtime of one hour or less in a week went from 40% in the pre-pilot period to 80% in the pilot period. As a result, the average overtime hours dramatically decreased from 3.1 hours in the pre-pilot period to 0.8 hours in the pilot period. Sixty-seven percent of respondents reported a typical court waiting time of 1.5 hours or less and 50% reported spending four 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.

[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

Washington County DSS respondents reported using the laptop during normal work hours, after work hours, on-call, and when working overtime. Washington 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, and word processing. Very few Washingon County DSS participants responded to the questions regarding specific uses of the laptop. None of the respondents reported using the laptop to access various forms of information from government Web sites. Three 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 extent to which caseworkers can access information while out of the office has a big influence on what kinds of mobile work are possible. Again, very few participants responded to the survey questions regarding accessing information. However, of those who did, laptop use slightly decreased the frequency of respondents returning to the office to access information. Only two respondents reported returning to the office two or more times a week to access case information during the test period, compared to four in the pre-pilot period.

Washington County DSS did not have district-provided external broadband cards during the pilot period. A few did use their personal Internet Service Providers (ISPs) while at home. Most stated the biggest problem was not having wireless connection. There was not enough information in the open-ended survey questions or the teleconference interviews to determine specific types of connectivity problems. However, a few open-ended comments revealed some participants were having difficulty with the docking stations. One recounted, “When reconnecting the laptop after using it in the field, there have been some difficulties with the display properties (e.g., size of screen icons) before rebooting several times.”

Participants were also asked about ease of logging-on to the device. Overall, 67% said it was “Easy” to “Extremely easy,” 33% rated it as “Neither difficult nor Easy,” and none of the respondents rated the log-on process as “Difficult” or “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 respondent reported using the laptop at home for less than one-half hour per week. Two each reported using the laptop in the field and at court for an average of about a half-hour per week.

Table 1 - Location and Hours of Laptop Use per Week

	Use of Laptop (n)	Average length of use per week
Field	33% (2)	0.50 Hours
Court	33% (2)	0.50 Hours
Home	17% (1)	< .50 Hours
Do not use at all	17% (1)	--

** Based on survey respondents who took the post survey n=6. Total number of testers n=12.*

In the open-ended survey comments and during the teleconference, respondents stated the importance of being connected and some emphasized that having constant connectivity would enhance the benefits of using a laptop. One respondent stated, “It is convienent. You can utilize your time better. While waiting for court or for a co-worker to complete a visit, I can be writing on the laptop. The only downfall is that in Washington County we do not have access to CONNECTIONS so all we can use the laptops for is [Microsoft] Word. That is still a help, but not nearly as much as it will be in the future.” Another said, “I was really excited about receiving the laptop, but without access to CONNECTIONS it isn't very useful in the field. It would be also helpful to access maps for driving directions and to gather resources and information for our clients.”

The amount of time caseworkers spend in court suggests that it is an unexploited location for mobile work in many districts. However, Washington County DSS respondents spend on average five days a month at court and wait about 1.5 hours 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. There was not enough information provided through open-ended comments to understand why court use was so low.

Caseworkers could work from home with the laptop for overtime reasons and accrue ‘flex time’, if they received prior approval. Several respondents reported that using the laptop while on-call and at home has been beneficial.

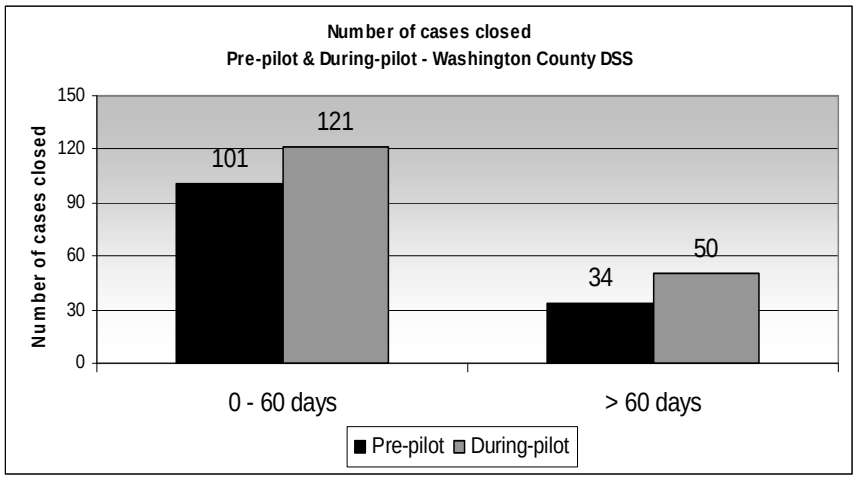
Productivity and Efficiency

This analysis uses central database data and survey responses to examine two core questions about possible technology impacts within the Washington 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 (101) to the pilot period (121). The number of cases closed in over 60 days increased as well, from 34 in the pre-pilot period to 50 during the pilot. This is an increase in productivity during the pilot period; the total number of cases closed increased during the pilot period, from 135 in the pre-pilot to 171 during the pilot – a 26% increase. It is important to note that in this county the total number of cases available to be worked on[2] increased slightly from 316 in the pre-pilot period to 328 in the pilot period – a 3.8% increase.

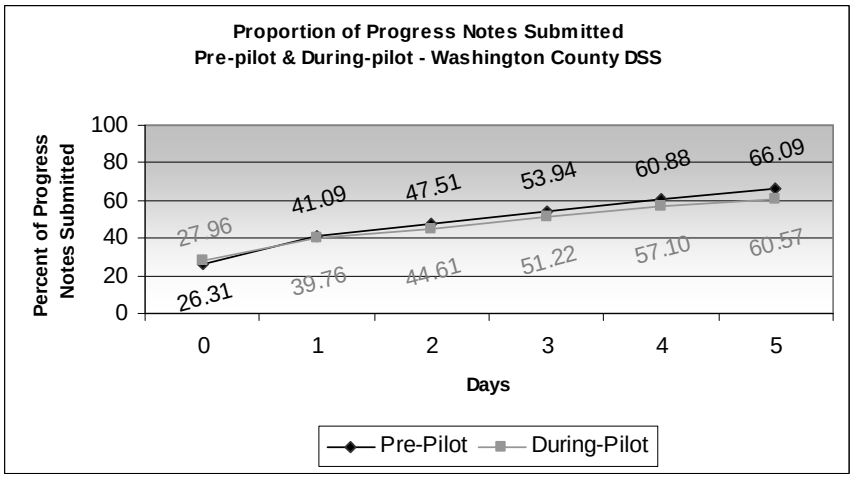
[2] The number of cases available to be worked on is the total of investigation stages that were open at any time during each of the pre-or pilot periods.

Figure 1 - Number of Washington 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 the pre-pilot and pilot period, the majority of all progress notes were entered by the third day after the event. By the fifth day following the event, 66% of the notes were entered for the pre-pilot period, and 61% for the pilot period. Overall, there is very little difference between the timeliness of note entry across the two periods. By this measure, timeliness was essentially unchanged during the pilot, but remained high overall.

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



The use of new technology also requires a period of adjustment. In Washington County DSS, a total of 12 laptop with docking stations were deployed as desktop replacements. No external broadband access cards were deployed. This kind of equipment change can require extra effort in the short run and require a period of adjustment. 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 Washington County DSS respondents reported some positive impacts on their work resulting from laptop use, shown in Table 2 below. For documentation, two respondents reported improvements in timeliness. Reported ability to work in court improved for four respondents. No positive impacts were reported for ability to communicate with supervisors or service to clients. There were also no reported negative impacts indicated by respondents.

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

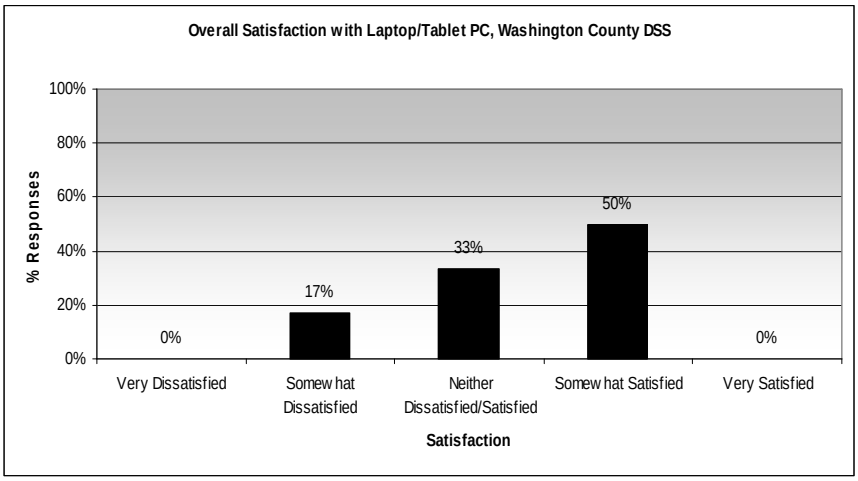
	Much worse (n)	Somewhat worse (n)	About the same (n)	Somewhat better (n)	Much better (n)
Timeliness of documentation	0%(0)	0%(0)	67%(4)	33%(2)	0%(0)
Ability to do work in court	0%(0)	0%(0)	33%(2)	50%(3)	17%(1)
Ability to access case information	0%(0)	0%(0)	100%(6)	0%(0)	0%(0)
Communication with supervisors	0%(0)	0%(0)	100%(6)	0%(0)	0%(0)
Service to clients	0%(0)	0%(0)	100%(6)	0%(0)	0%(0)

The reported positive impacts on timeliness and other work activities is somewhat consistent with the timeliness of documentation results obtained from the central database. Respondents may be noticing the positive impacts related more to the increased rate of case closings and the ability to keep up with progress note entry.

Satisfaction

The overall level of satisfaction with the laptops was moderate. Figure 3 below shows that 50% of respondents expressed being "Somewhat satisfied," compared to 17% being "Somewhat dissatisfied." Additionally, 33% indicated that they were "Neither dissatisfied/Satisfied."

Figure 3 - Overall User Satisfaction with the Laptops



** Based on survey respondents who took the post survey n = 6. Total number of testers n = 12.*

The lack of a district-provided external broadband cards was the most frequently issue, as well as the learning curve associated with using the new laptops in the field. It could also be the case that having a laptop produced higher expectations for use at court, at home, and in the field; expectations that were not wholly met. One respondent reported,

> We do not have access to Connection with our laptops yet. We are still waiting for our cards. Until that happens, the effectiveness of having a laptop is very limited. I do believe it will be extremely beneficial once we get the cards and can use the laptops in the field.

The role of laptop use in reducing job-related stress received mixed results from respondents. Fifty-percent indicated that it did reduce stress, while the other half felt as though laptops did not contribute to lower job-related stress. Those who reported a reduction in stress attributed this to increased flexibility in the ability to work outside of the office and increased access to information. Again, the lack of a district-provided external broadband cards was the main reason respondents felt that having a laptop did not contribute to lower job-related stress.

Overall, 83% of respondents would recommend the use of laptops to colleagues, however, most said this was contingent upon receiving wireless connectivity.

Center for Technology in Government

Assessing Mobile Technologies in Child Protective Services

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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 ServiceDistricts* 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 Wayne County DSS. Findings are based on data collected through online surveys, district questionnaires, and analysis of CONNECTIONS data (see Appendix C of the *Demonstration Project's Summary Report* for data collection tools and timeline). 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 familes in general.

The Wayne County DSS deployed 16 Dell Latitude D620 laptops to 14 caseworkers and two managers on 11/30/07 (see Appendix A of *the Demonstration Project's Summary Report* 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 respondents[1] 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. Ninty-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

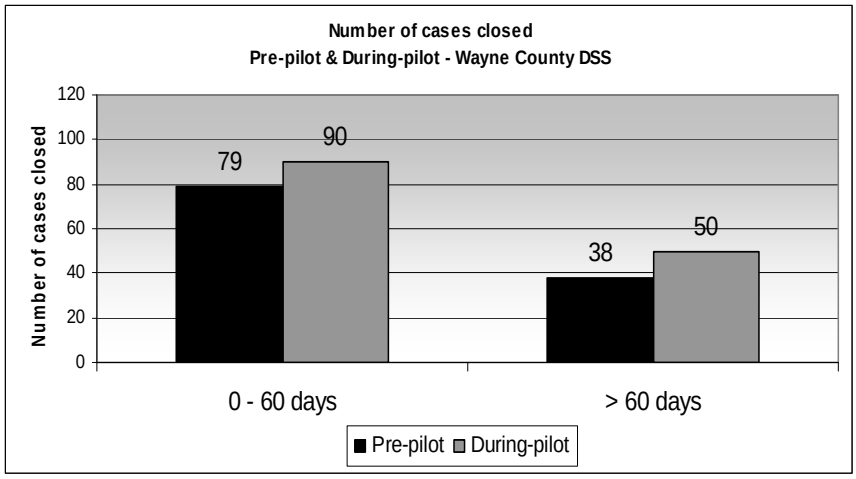
respondent stated, “When at court, I no longer feel like I am standing around, wasting time while waiting for my case to be called.” However, others do not see court as an opportunity: “I don't find it that helpful at court because you are usually talking with clients’ attorneys while there and I haven't 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 on[2] 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

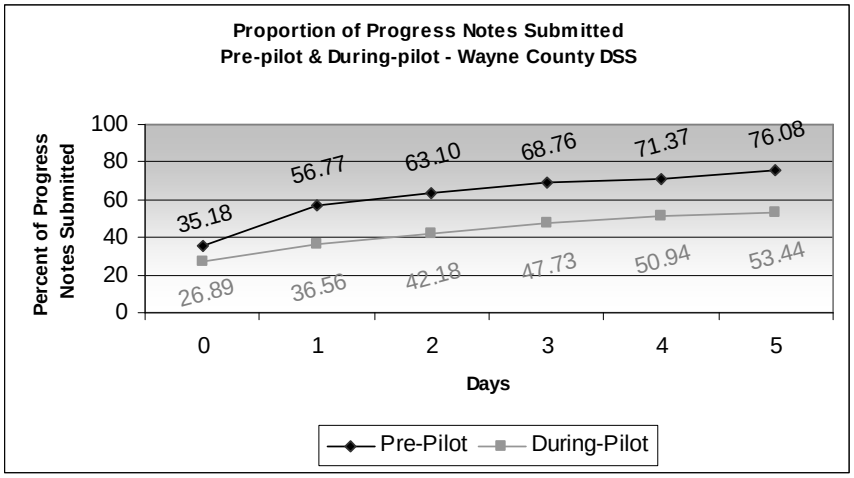


Another indicator of timeliness is elapsed time – or the number of days between an event and the posting of documentation regarding that event in the central database system. Figure 2 below shows trends in the elapsed time between progress note entry and the related event. During the pre-pilot period, 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)

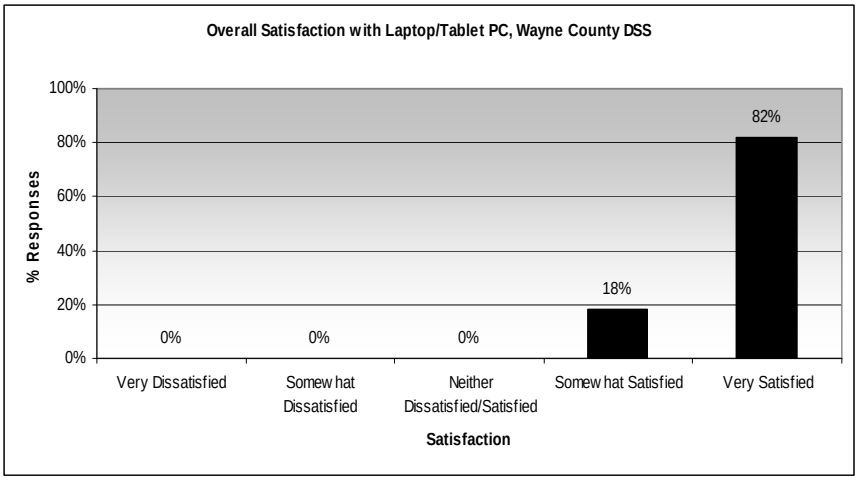
The lack of reported negative impacts on timeliness and other work activities is somewhat inconsistent with the timeliness of documentation results obtained from the central database. These reported positive impacts may be related more to the increased rate of case closing.

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!”

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