**Program Title**

Human Services' Case Management:  Enhanced Efficiencies with HSConnects

**Abstract**

Arapahoe County developed and deployed a system called HSConnects for the case and workflow management of Human Services' benefit applications and re-certifications. Built in response to a need to handle a growing annual caseload of nearly 100,000 cases and taking advantage of process optimization efforts that had already occurred, HSConnects further streamlined the application process by 92%, reduced the loss/error rate from 30% to nearly zero and generated recurring savings of $1.5M annually on an initial investment of $180,000. This efficiency allowed Arapahoe County to become 1 of 2 large Colorado counties that were able to comply with Federal and State timeliness mandates in 2015. And, this compliance was achieved by reducing temporary staffing and eliminating overtime expenses. In addition, HSConnects avoided a capital outlay of $2,250,000 for a commercially available system, with recurring maintenance costs of $250,000.

The system continues to be enhanced and deployed in other Human Services' Divisions and, with some reconfiguration, it can also be deployed in other departments or offices within Arapahoe County, extending the efficiencies and cost savings even further.

**Problem or Need for the Program**

In 2004, the State of Colorado was sued for its failure to meet timeliness mandates in making eligibility determinations for various human services benefits. Four years later, the State settled with the plaintiffs agreeing that the State would have the counties, which administer benefits, process new and expedited applications for food and cash assistance in a timely manner at least 95% of the time. Redeterminations of these benefits were also to be processed in a timely fashion at least 95% of the time. Concurrently, growing caseloads were making it more difficult to meet the mandated deadlines as funding was static. Simply hiring more staff to meet the deadlines was not a viable or sustainable solution. Another approach had to be found in order for the County Human Services Department to meet its deadlines.

Arapahoe County's legacy process was heavily paper-based, and involved numerous steps, quality control checks and routing techniques. It also had an error/loss rate approaching 30%, which required citizens to re-submit documentation with the adverse result of delaying the receipt of needed assistance and jeopardizing compliance deadlines. With the increasing caseload, Human Services needed to find a way to reduce the amount of time being spent on each case being processed and to improve the accuracy and timeliness of the work being done on each case.

When attempting to process work through the legacy paper process, it was also impossible to determine the priority or urgency of any single document, as it was but one of several thousand documents in the work queue on any given day. Couple this problem with the fact that clients submit paperwork in a variety of ways—via fax, mail and walk-in—and sometimes asynchronously, linking documentation with clients became nearly impossible. Human Services had to wrestle with having multiple staff working the same case at the same time due to the impossibility of collecting every physical document associated with a specific case concurrently.

Clearly, a streamlined process was needed. Arapahoe County Human Services embarked on a rigorous business process improvement program to create efficiencies. While the process improvement program had beneficial results, it became apparent that dealing with physical documents in a timely fashion, as caseloads increased, required more staff and additional overtime at an ever-increasing cost; clearly, an unsustainable model. As the annual aggregate caseload approached 100,000 cases, Human Services found that countless hours of moving paper from faxes, mail and client drop-offs could only be streamlined so much.

Human Services turned to the Arapahoe County Information Technology Department for assistance.

**Description of the Program**

An electronic imaging, workflow and interoperability program was deemed the correct and fiscally efficient solution to the volume and accuracy problems. A few software developers in Arapahoe County's Information Technology Department began working on a solution in October 2014, delivering the first release of the program—called HSConnects—in January 2015, with a production release following a month later.

HSConnects is a program that is designed to ingest citizen-supplied documents and data, read all State systems of record for due dates and deliver the set of documents and tasks to the correct county caseworker in advance of the mandated deadline. HSConnects stores all images and tasks in a central queue, reads the appropriate State system of record to determine when a case needs to be completed and auto-prioritizes work to ensure that the most urgent cases are worked on first, so that compliance targets are reliably met.

Approximately 20 percent of the cases Human Services works each month have exceptions to normal case processing. HSConnects was built with business rules to address all exceptions to ensure that the 95% threshold set by the federal government and the remedy of the lawsuit was achieved. Automated intelligence was created and 82 specific workflows were implemented to assure that no matter the benefit program or the caseworker or the issue, each document would be delivered to the correct caseworker when it was needed. Further, documents received by various modes or at different times were logically bundled with all the documents for a particular case and delivered as a set "package" to a caseworker.

HSConnects also enables the management of workers and caseloads by monitoring the volume of work completed by the worker and the volume remaining. The system allows work to be transferred, reassigned or moved to a different priority to ensure all work is processed in a timely fashion. Thus, if a particular caseworker is overloaded or is out of the office, the backlog of work can immediately be re-assigned without jeopardizing the deadlines. A dashboard provides this managerial view and has resulted in the balancing (and possibly re-balancing) of case reviews and caseloads as part of the daily operations.

The automated intelligence of HSConnects also ensures that staff are given ample notice on each case that may have incomplete documentation. If a client fails to provide documentation by a set due date,

that case may be closed, which would require the client to reapply. The re-application process would necessitate additional staffing resources and delays in processing in order to get the client the services for which they qualify. Through the creation of automated intelligence, staff are notified in advance and can contact clients for additional documentation, thereby reducing the number of premature case closures, re-applications and the need to gather each document associated with a specific case physically.

Arapahoe County initially deployed HSConnects at the reception windows in its Human Services Department's facilities beginning in February 2015. As a result, this led to an immediate drop in the time it took for clients to submit paperwork for their benefits applications or re-certifications. The Human Services lobbies were emptied of citizens waiting their turn and, most importantly, eligible citizens were able to receive assistance sooner.

In 2016, Arapahoe County was one of eight of Colorado's 64 counties and only 1 of 2 large county offices to meet all federal and state timeliness mandates, in large part due to HSConnects. Further, Arapahoe County was the only large county in Colorado to *underspend* its personnel budget, with temporary staffing and overtime cost savings of approximately $1,500,000. Whereas other counties had hired temporary staff and/or incurred staff overtime, Arapahoe County actually was able to reduce its staffing effort *and* concurrently achieve compliance. HSConnects and the streamlined business processes were responsible for increasing efficiencies by 92% and increasing timeliness compliance rates to over 98%, while reducing error rates to just over 2%. Additional savings were realized through a dramatic reduction in paper consumption, as citizens no longer had to photocopy documents prior to submitting them. This led to a savings of 4 million sheets of paper annually. Arapahoe County was able to meet its compliance target, increase efficiencies AND reduce expenditures, clearly creating a fiscally sustainable model that provided excellent citizen service.

The introduction of HSConnects, besides creating efficiencies and savings for Arapahoe County, also had a pronounced impact on citizens. As noted above, with the error and loss rate being reduced from 30% to 2%, the need for citizens to resubmit paperwork dramatically declined and missing documents could be associated with a case at a later date, without jeopardizing the initial deadline. But there were other dramatic impacts.

Citizen service also dramatically improved. Citizens no longer had to wait hours to submit their documents and applications; following the adoption of HSConnects, the time to submit an application declined from an average of 25 minutes to an average of 2 minutes. Today, after an application is submitted a caseworker can call a citizen to schedule an interview, sometimes before the citizen has even left the parking lot, creating astounding citizen service.

In March 2016, HSConnects was installed in Human Services' Records and Information Management division. This division receives in-bound FAXes and U.S. Mail containing client applications and/or documentation. With the new software and processes in place, FAXes, which had previously been printed and then scanned into a document management system, are now digitally ingested into HSConnects. Incoming mail is also opened and scanned into the system. While final efficiencies improvements are still being tabulated, process times have been reduced by approximately 66% and through the use of HSConnects, the need for temporary staffing has been eliminated.

HSConnects continues to be enhanced. Planning is currently underway to deploy the technology in two additional divisions within the County's Human Services Department so further efficiencies and cost savings may be realized. In late 2016, the software was re-written so it could be securely deployed in a commercial 'cloud' and offered to other Colorado counties as a means of helping them to achieve compliance with the mandates in a sustainable fashion. It is anticipated that the first "partner" county will be brought on to the system by mid-2017.

Finally, as HSConnects at its core is a case management and workflow tool, it has been designed to be deployed elsewhere within the County administration. For example, it is currently being considered for contract management in the County Attorney's office, for records management in the Clerk and Recorder's office and for case management in our Community Resources division assisting senior citizens (Homemaker Services), weatherization projects and our Veterans Services office. All of these additional cases would utilize the same software, but with different databases, workflows and rules configured for the handling of the various types of cases. The beauty of HSConnects is that it has the flexibility to be adapted to numerous needs, thereby keeping the cost of providing technology and the cost of providing excellent services to a minimum.

**Use of Technology**

The HSConnects software is built with Microsoft's .NET framework and utilizes Microsoft SQL Server database technology. The initial release of the software was implemented on virtual servers at Arapahoe County, but as of August 2016, an effort had begun to migrate the software to a cloud-based solution (see supplemental information, below). Version 2 of the software is, as of this writing, being tested in the cloud and will be released to production in the next few months. Document scanning is performed with off-the-shelf, high-speed duplex scanners which in seconds scan applicant documents into the system for quality review and categorization. Review and categorization initially was performed on desktop monitors, using mouse clicks to assign document types to each document in the case. In early 2016, a large format touchscreen version was implemented, allowing for easier document review and faster categorization. Also, in 2016, the Graphical User Interface was totally redesigned for consistency and more intuitive use of the software.

**Cost of the Program**

HSConnects was entirely an in-house software development project, with some purchased hardware—scanners and touchscreens.

The development costs for HSConnects were approximately $160,000 of labor within IT during the first year. Four months into that year, the software was put into production and efficiencies were immediately realized. Since 2015, Arapahoe County Information Technology has continued to enhance the software. Human Services also contributed staff hours to the design review and testing of the software. In addition, new high-speed, duplex desktop scanners and large format touchscreens were acquired at a cost of approximately $20,000.

Proposals for a commercial solution with similar functionality had been received by the County. The licensing and implementation costs were proposed at $2,250,000, with an annual maintenance cost of

$250,000. Creating our own software to address the need avoided these capital expenses. With savings of $1,500,000 on an investment of $180,000, the initial system paid for itself in about 6 weeks:  an incredible ROI.

**Results/Success of the Program**

The two most significant results and successes of HSConnects are the fact that the compliance targets can now be reliably met and that citizens' applications for benefits and re-certifications could be processed 92% more efficiently and with a loss/error rate approaching zero. Literally, as several Human Services' staff has noted, "HSConnects has saved lives" by reliably accelerating the process of getting aid. Meeting the compliance targets was vital:  it not only aided citizens and addressed the 2004 legal action, but it also meant that the County was not going to be penalized for missing the targets. In fact, in 2016, the County received a $479,000 incentive award for its excellence in compliance.

The system was also a success in a variety of other ways as well. HSConnects also

- **Reduced** paper consumption in 2015 by **4,000,000** sheets
- **Reduced** over-time expenditures by **more than $500,000**
- **Reduced** temporary staffing needs **by 40%**
- **Reduced** paper shredding costs by **over 50%**
- **Eliminated** file cabinets, staplers, two-hole punches or file folders as files were now 100% digital
- **Improved** staff retention, as now some staff members can work remotely. Staff turnover declined from over 30% in 2012 to less than 5% in 2015, in part due to HSConnects.

For Information Technology, the HSConnects project also allowed the department to embrace the agile scrum development methodology, with its on-going product improvement. This methodology allowed Human Services and IT to work far more closely together than ever before to develop and enhance a product that created a dramatic improvement in service and savings.

A few months after the system was put into production, Bob Prevost, Deputy Director of Human Services at the County wrote:

> I find myself as excited as a kid in a candy store. This same feeling is spreading through staff and supervisors when they see this "science fiction" actually working. We had a client recently blown away with our contact, "I just dropped that stuff off and you're already working my case?"  She was driving home from our office when she got our call for her phone interview. Pretty cool stuff.

The 'stuff' that makes for delighted citizens.

**Worthiness of Award**

HSConnects and Arapahoe County are worthy to receive a 2017 Achievement Award based on the dramatic increase in efficiency, better service and cost savings resulting from a visionary implementation of technology. HSConnects not only dramatically improved the administration and management of welfare benefit applications and re-certifications, but it exceeded the compliance targets set by the State of Colorado in the 2008 legal settlement while generating significant savings and efficiencies.

At Arapahoe County, our performance goals focus on achieving Fiscal Responsibility and Excellent Service, while improving the Quality of Life of our citizens, businesses and employees. With HSConnects, all of these goals have been met:

- **Fiscal Responsibility** has been achieved by avoiding a $2,250,000 capital outlay, creating savings of $1,500,000 annually and by creating a sustainable means of complying with State and Federal mandates.
- **Excellent Service** has been realized by improving the process of receiving and processing benefit applications and re-certifications by a whopping 92% and reducing the error/loss rate to almost 0%.
- The **Quality of Life** of citizens has been improved as they are able to go through the eligibility qualification process faster and, as a result, receive needed benefits sooner. Staff have benefitted through a higher retention rate, fewer citizen complaints, less overtime and higher job satisfaction levels.