



UNOS Maintains Fairness of Organ Transplant Waiting Lists with Streamlined Survey Solution

Overview

Country or Region: United States

Industry: Healthcare

Customer Profile

Based in Richmond, Virginia, the United Network for Organ Sharing (UNOS) is a nonprofit, scientific, and educational organization that administers all organ procurement and transplant activities in the United States.

Business Situation

UNOS conducts surveys of member transplant organizations to ensure compliance with regulatory policies and protocols for organ assignment. The survey process was highly time and labor intensive, which limited the amount of time that site surveyors could devote to other compliance activities while on-site.

Solution

UNOS partnered with SyCom Technologies and The Computer Solution Company to develop a comprehensive workflow, collaboration, and document management solution based on the 2007 Microsoft® Office system and Windows Vista™.

Benefits

- Reduced survey cycle time from 25 days to 11 days
- Eliminated the need to create, transport, and archive paper survey files
- Enhanced data security and mobility

“We have an enormous responsibility to ensure that donors and patients alike trust the system. This solution helps us save lives.”

Deanna Sampson, Director of Evaluation and Quality, United Network for Organ Sharing

Maintaining the integrity of an organ transplant waiting list can be a matter of life and death. The United Network for Organ Sharing (UNOS), which administers all live organ procurement and transplant activities in the U.S., is responsible for ensuring patients are prioritized and organs assigned according to protocols. UNOS regularly visits organ transplant centers to survey patient files and monitor protocols. To relieve surveyors from a mountain of paperwork, UNOS partnered with SyCom Technologies and The Computer Solution Company to develop a streamlined process combining the capabilities of Microsoft® Office InfoPath® 2007 with the mobility and security features of Windows Vista™. The resulting solution enables survey teams to perform more detailed surveys, spend more time educating physicians, and provide greater assurance of the fairness of the transplant system.

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Blaine Hess, Director of Systems Engineering and Operations, United Network for Organ Sharing

Situation

The United Network for Organ Sharing (UNOS) has managed all organ procurement and transplantation in the United States since 1986, the first and only organization to do so. Accountable to the federal government, UNOS is responsible for maintaining effectiveness, efficiency, and equity in the national system of organ allocation.

The organization maintains a national list of all patients in the country who are waiting for a solid organ transplant. It also operates a 24-hour-a-day organ placement center to ensure efficient and optimal matching of donors and recipients.

The waiting list is managed by the UNOS computer system. Organ allocation is performed according to clinical prioritization guidelines, and demonstrable compliance with these guidelines by all participating organizations is critical for maintaining trust in the equity of the system by patients and potential donors alike. When a patient is added to the organ waiting list, and whenever the patient's condition changes, a new listing is created. UNOS site surveyors conduct periodic reviews of patient listing records to ensure that the documentation has been completed accurately and procedures are being followed correctly.

Business Priorities

To maximize member compliance and the integrity of the organ sharing system, UNOS has identified several business priorities:

- Conduct more surveys with existing resources
- Maximize the breadth and depth of surveys conducted
- Reduce enforcement actions through education

UNOS was faced with a challenge commonly faced by not-for-profit organizations: demand for services expected to grow at a faster rate than funding. Says Blaine Hess, UNOS

Director of Systems Engineering and Operations, “The goal of the [Organ Procurement and Transplantation Network] is to double the number of transplants in the next six years, this means we will need to become at least twice as efficient.”

Looking for areas to drive efficiencies, UNOS recognized that existing processes for conducting surveys were highly time consuming and labor intensive. Site surveyors were spending an average of 15 preparation days searching for, printing, annotating, and organizing patient data from multiple sources such as Microsoft® Word documents, e-mail, Portable Document Format files (PDFs), and databases. Site surveyors carried stacks of printouts to the site, which were further annotated by hand during the survey process. After returning to the office, the surveyor would enter the handwritten notes and then create the survey report.

Critical Success Factors for the Survey Process

Deanna Sampson, Director of Evaluation and Quality for UNOS, is responsible for the monitoring compliance of all organ procurement and transplant organizations across the United States. She has identified several critical success factors (and associated key performance indicators, or KPIs) for the survey process:

- Increase the efficiency of survey resources (average preparation time, on-site survey time, and post-survey documentation time per survey)
- Increase the amount of surveyor time spent on-site versus other activities (on-site time as a percentage of preparation time)
- Reduce manual document handling in the survey process (number of paper documents transported to and from survey site, and volume of paper notes taken)

“Using InfoPath 2007 was a natural choice because of its integration with XML data sources and offline processing capability.”

Kyle Wilson, Information Worker Practice Manager, The Computer Solution Company

Solution

The United Network for Organ Sharing, with implementation partners SyCom Technologies and The Computer Solution Company (TCSC), participated in the Rapid Deployment Program (RDP) for the 2007 Microsoft Office system, developing an electronic forms and workflow solution to streamline the survey process. In the course of the program, UNOS deployed an electronic forms solution built on the Microsoft Office InfoPath® 2007 information-gathering program, Office SharePoint® Server 2007, and Tablet PCs running the Windows Vista™ operating system.

By taking advantage of the combined capabilities of the 2007 Microsoft Office system and Windows Vista, UNOS implemented the following strategies.

Streamline Survey Preparation Process

UNOS replaced the manual process of assembling patient data, copying, annotating, and carrying documents to the site with a streamlined process that takes advantage of the electronic forms capability of Office InfoPath 2007. Patient listing data is downloaded from UNOS databases to a Tablet PC, and is used to pre-populate a standard survey checklist in InfoPath 2007 that displays the values to be verified and subsequently captures the surveyor's notes.

“Using InfoPath 2007 was a natural choice because of its integration with XML data sources and offline processing capability,” says TCSC Information Worker Practice Manager Kyle Wilson.

Minimize Use of Paper Documents in Survey Process

Instead of transporting boxes of documents to the survey site, site surveyors carry a Tablet PC, which they use to compare the data received by UNOS with the hospital's records. With a Tablet PC running Windows Vista, site surveyors can quickly and easily enter notes in their own handwriting as they

work. Because many hospital records reside in deep basements, site surveyors make use of the Office InfoPath 2007 offline capability to work close to where the records are located and then refresh their data the next time that they are able to connect.

Safeguard Survey Data While in the Field

Simply by virtue of site surveyors no longer carrying boxes full of papers, the solution helps provide greater assurance of patient privacy. And because UNOS is required to archive all the material that it creates, an electronic solution that minimizes the amount of paper documents reduces the risk that any records could be compromised. If a box of surveyed papers was lost, it would mean the compromise of patient data as well as several weeks of surveyor time wasted.

Because survey data can be easily transferred to UNOS systems from the field, the risk of data loss is minimized, while new Windows® BitLocker™ Drive Encryption technology prevents unauthorized users from breaking file and system protections if a computer is lost or stolen.

Automate Data Analysis and Reporting

Because data is captured electronically through Office InfoPath 2007 and easily refreshed to UNOS back-end systems through any wireless network connection, survey reports—which used to be manually created by the site surveyors at the end of the survey by searching through notes and compiling lists of irregularities—can now be generated at any time using standard templates that automatically list and categorize irregularities, along with notes taken in the field. Not only does this remove a significant amount of administrative work from site surveyors, but it also enables UNOS to identify patterns early on in the survey to guide any additional detailed analysis while still in the field.

“[The solution] will enable our current staff to do more, and choose how to spend their time rather than being locked in survey preparation.”

Deanna Sampson, Director of Evaluation and Quality, United Network for Organ Sharing

Benefits

Through the implementation of its new mobility and electronic forms solution, the United Network for Organ Sharing immediately experienced several important benefits. Figure 1, at the end of this section, presents a detailed summary of the process improvements and benefits.

The efficiencies will enable site surveyors to dig deeper and perform wider analyses, spend more on-site time educating physicians, and visit more sites as the volume of transplants increases. As Deanna Sampson, UNOS Director of Quality and Evaluation, says, “[The solution} will enable our current staff to do more, and choose how to spend their time rather than being locked in survey preparation.”

Reduced Preparation Time by Site Surveyors

By replacing a highly labor-intensive manual survey preparation process with automated download of data to a Tablet PC, UNOS reduced survey preparation time from 15 days to 3. By reducing this taxing, no-value-added administrative task, UNOS also significantly increased the job satisfaction of its site surveyors.

Enhanced Effectiveness of Site Surveyors While On-Site

While UNOS site surveyors are on-site, patient listing data for verification is presented in an easy-to-access form view using Office InfoPath 2007, with fields for site surveyors to annotate confirming that a value is correct or highlighting any irregularities. Using the enhanced wireless connectivity features in Windows Vista, the survey data then is sent back to UNOS where analysis can begin immediately. Whereas previously any irregularities would not be discovered until several days after leaving the site, the new solution provides the opportunity to analyze in parallel with the survey and refocus on-site resources on specific data points, a

significant boost in effectiveness. While a typical survey still involves a week on-site, this time can be significantly more effective and focused.

Streamlined Survey Report Creation

Automating survey report creation by populating standard report templates from the data captured in Office InfoPath 2007 significantly streamlined the process for creating survey reports after returning from the field. While site surveyors still spend approximately three days providing their commentary and expert analysis, the two days of entering handwritten notes that used to follow each survey have been eliminated.

Reduced Volume of Paper Documents

Paper documents used to present logistical challenges to UNOS both in the field and at headquarters. Site surveyors would have to carry hundreds of sheets of paper to a site for verification, and, because health regulations prevent UNOS from destroying the documents afterward, the organization had to archive vast volumes of documents.

Since implementing the solution, the volume of paper documents created and carried into the field has been drastically reduced, from an average of 445 sheets per program to virtually 0. This presents a significant improvement not only in terms of site surveyors' effort in carrying the documents, but also in the reduced security risk of confidential patient records being mishandled and the cost of archiving the documents.

Other Benefits

Overall, UNOS expects the solution to increase the organization's ability to sustain trust in the fairness of the organ-sharing system among patients and potential donors. Because donor numbers are viewed as tied to trust in the system, this directly affects the number of organs available for transplant and incidents of wait-list patient deaths. “We have an enormous responsibility to ensure

Figure 1. Measurement of the Improvements in the Key Performance Indicators (KPIs) for the Survey Process

that donors and patients alike trust the system. This solution helps us save lives,” Sampson says.

The solution also:

- Provides UNOS with the efficiencies to do more with the resources it already has, thus readying it for transplant volumes that are expected to double over the next few years.
- Enables UNOS to aggregate survey data across transplant programs, hospitals, and transplant centers. This creates the potential for UNOS to perform deeper analysis and identify patterns and cues in the data to enable site surveyors to focus on specific areas of irregularity or identify training and information needs for healthcare providers.

- Increases the job satisfaction of site surveyors by virtually eliminating the dull and time-consuming task of manual survey preparation. This is expected to have significant impact both on retention and the ability to attract high-quality job candidates.

Key Performance Indicator	KPI Calculation/ Measurement Method	Baseline Value (Before Deployment)	Measurement Value (After Deployment)	Improvement
Increase the efficiency of survey resources	Average survey preparation time for a heart program	15 days	3 days	80% (12 days) of work manually assembling survey documents eliminated for each survey eliminated
Increase the efficiency of survey resources	On-site survey time for a heart program	5 days	5 days	No change: However, this on-site time is more effectively spent due to the ability to commence data analysis during the survey.
Increase the efficiency of survey resources	Post-survey documentation time for a heart program	5 days	3 days	2 full days of manual data entry eliminated for each survey
Increase the time spent on-site versus preparation	On-site time as a percentage of total time spent on survey	20%	44%	Time spent on-site relative to other activities has more than doubled, enabling UNOS to maximize the skills of its skilled personnel in the field. In addition, employee satisfaction is increased through reduced emphasis on administrative activities.
Reduce manual document handling in the survey process	Number of paper documents assembled, transported, and annotated during a typical survey	Approximately 5 sheets per record x 89 records per center = 445 sheets	0 sheets (All documents encrypted on a Tablet PC)	Significant paperwork reduction: 100% elimination of paper documents required to be created, carried into the field, and then archived following each survey.

For More Information

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For more information about SyCom Technologies products and services, call (804) 262-7100 or visit the Web site at: www.sycomtech.com

For more information about The Computer Solution Company products and services, call (804) 794-3491 or visit the Web site at: www.tcsc.com

For more information about United Network for Organ Sharing products and services, call (804) 782-4800 or visit the Web site at: www.unos.org

Microsoft Office System

The Microsoft Office system is the business world's chosen environment for information work, providing the programs, servers, and services that help you succeed by transforming information into impact.

For more information about the Microsoft Office system, go to: www.microsoft.com/office

Windows Vista

Windows Vista can help your organization use information technology to gain a competitive advantage in today's new world of work. Your people will be able to find and use information more effectively. You will be able to support your mobile work force with better access to shared data and collaboration tools. And your IT staff will have better tools and technologies to enhance corporate IT security, data protection, and more efficient deployment and management.

For more information about Windows Vista, go to: www.microsoft.com/windowsvista

About Business Value Assessment

This business value research study was developed by Capgemini using the Microsoft Rapid Economic Justification (REJ) Framework to assess the business value of the 2007 Microsoft Office system.

For information on how to repeat this study for your organization, contact your local Microsoft representative or go to: www.microsoft.com/value

Partner Profiles

SyCom Technologies is a Microsoft Gold Certified Partner. Client focused and rich in technical expertise, SyCom's core competencies are focused on improving business communications through effective design, integration, management, staffing, and life-cycle support of connected communication systems.



The Computer Solution Company, Microsoft's 2004 Worldwide Information Worker Partner of the Year, is an industry leader in the design, development and implementation of productivity-enhancing, business automation solutions. Proven experience and certified expertise enable TCSC to address the needs of customers in a timely manner by creatively leveraging Microsoft tools and technologies.



Software and Services

- Windows Vista
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