University of California, San Francisco (UCSF)

Organization
University of California, San Francisco (UCSF)
The Prevention Sciences Group (PSG) was created in November 1988 with the opening of the downtown San Francisco offices that brought together faculty and staff from several UCSF departments. PSG is a confederation of health scientists conducting research on the prevention of AIDS, osteoporotic fractures, cardiovascular disease, breast cancer, health and aging, and other global health projects.

Industry
Education

Application
Automated Data Collection; Medical research; Clinical studies

Situation
UCSF studies can last several years, involve participants and clinicians from dozens of remote locations all over the world, and include an overwhelming volume of information. Prevention Sciences Group relies extensively on HP Autonomy Capture TeleForm to automatically capture and process critical content. With TeleForm's help, UCSF generates medical research that is accurate, timely and useful in the prevention and treatment of disease

Solution
Autonomy Capture TeleForm

Integrations
Legato ApplicationXtender®; Microsoft SQL; HP Digital Sender 9100C; Fujitsu 4097D Scanners; Lexmark FTP AptraImage

"As far as we're concerned, there isn't another product on the market that can do what Autonomy Capture TeleForm does. TeleForm has been a key piece of our successful medical research efforts at University California, San Francisco since 1997."

– Alaric Battle, Network Administrator, Prevention Sciences Group at UCSF

Overview
The University of California, San Francisco (UCSF) is the smallest of the 10 UC campuses. But, its relative size belies its distinction as one of the leading biomedical research and health science education centers in the world. In the past 15 years alone, three pioneering UCSF researchers have been named Nobel laureates. The school ranks fourth nationally in National Institutes of Health research funding, first for active patents in the UC system, and supports 16 Howard Hughes Medical Institute investigators—the largest group of any medical school in the United States.

UCSF's Prevention Sciences Group carries out some of the university's most notable research, including landmark studies on the prevention and treatment of cancer, AIDS and cardiovascular disease. These studies, frequently conducted in collaboration with the Department of Epidemiology and Biostatistics, the Department of Medicine and other departments, institutions and pharmaceutical companies, are used to guide clinical practice, drug research and development, and public health policies.

The Prevention Sciences Group relies extensively on the latest information technology to steer its research from creation to completion. For example, UCSF deploys Autonomy TeleForm, part of Autonomy Capture to automatically capture and process critical content from clinicians and study participants across the world. With TeleForm's help, UCSF generates medical research that is accurate, timely and useful in the prevention and treatment of disease.

The challenge: Maintaining research excellence

Overseeing some of the nation's largest collaborative studies and clinical trials, UCSF's Prevention Sciences Group faces three serious challenges in its quest for continued excellence in medical research:

1. Managing complexity:
UCSF studies can last several years, involve participants and clinicians from dozens of remote locations all over the world, and include an overwhelming volume of information. Contributing to this complexity is the random fashion in which critical research questionnaires are sent to the UCSF Coordinating Center for processing. As many as 3,000 forms—anywhere from one to 50 pages in length—are received each day. They arrive in no particular order, and from any one of several research projects that the Prevention Sciences Group manages concurrently.

2. Ensuring accuracy:
UCSF is world-renowned for its high-quality biomedical research. The university's commitment to research excellence hinges on the attention it pays to detail at every stage of a study. There is little room for error as information is captured from study participants, verified, and processed for research on serious health issues such as AIDS, osteoporotic fractures, cardiovascular disease, breast cancer, and aging.

3. Staying agile:
UCSF occasionally needs to roll out new studies under extremely tight deadlines. As a result, the university requires robust technology that can quickly create and deploy new forms or adapt existing forms to the precise specifications of a clinical trial or collaborative study.

The solution: Autonomy Capture TeleForm

The Prevention Sciences Group at UCSF selected TeleForm technology in 1997—and hasn't looked back since. TeleForm is a powerful, high-volume information capture solution that is capable of processing

thousands of paper forms per day with superior accuracy, speed and efficiency. "As far as we're concerned, there isn't another product on the market that can do what TeleForm does for us," says Alaric Battle, Prevention Sciences Group network administrator. "TeleForm has been a key piece of our successful medical research efforts at University California, San Francisco since 1997."

Digital Documents, an Autonomy partner, integrated TeleForm into the existing business systems infrastructure at UCSF. Today, TeleForm supports more than 30 UCSF-managed studies, including many multi-year projects that require ongoing and detailed input from thousands of clinicians and participants in locations across the world. The Osteoarthritis Initiative (OAI), sponsored by the National Institutes of Health and a consortium of pharmaceutical companies, is one of the best examples of TeleForm in action for UCSF. OAI is a major four-year nationwide research study on how to prevent and treat knee osteoarthritis. From six clinical sites across the U.S., 5,000 participants securely provide patient data, radiological information and other relevant medical details in multi-page questionnaires that have been created with TeleForm Form Designer. The questionnaires are then scanned from each of the six sites before being electronically transmitted to a centralized TeleForm server at the UCSF Coordinating Center.

The forms can be faxed, emailed or sent over the Internet with the TeleForm eForm option. Some sites rely on the HP Digital Sender to scan and fax the forms. Once the questionnaires arrive at the UCSF Coordinating Center, TeleForm's advanced recognition and verification engines convert the data at accuracy rates approaching 100%. TeleForm automatically identifies and corrects questionable data entries. A small team of verifiers at Prevention Sciences Group, who review as many as 3,000 forms on any given day from numerous research projects, then validate the corrections before the completed forms and documents are automatically delivered into the appropriate Microsoft SQL database for analysis. A copy of the completed questionnaires are also stored in a Legato

ApplicationXtender ® content management system that uses Autonomy Capture technology to index the information so UCSF researchers can quickly retrieve it at any time over the course of the four-year study..

The benefits of Autonomy: UCSF doing more with less

The Prevention Sciences Group at UCSF credits Autonomy Capture TeleForm for stretching its IT resources and jumpstarting employee productivity—a feat that otherwise would have taken a hiring spree to achieve. "TeleForm was a huge improvement over the slow, inaccurate and inelegant method we had in place," says Battle. "Every study meant development and implementation of a custom application. TeleForm allowed us to standardize, use a single program to quickly, accurately capture all of the incoming data. It also meant we could standardize on form design, speeding and simplifying the process. Most important, the software has allowed us to easily handle more studies, with a smaller commitment of personnel." Prior to the implementation of TeleForm, UCSF required three programmers to perform many of the crucial data management tasks related to a single research project.

Today with TeleForm, UCSF employs only six programmers to oversee as many as 30 major research projects concurrently. That's a productivity boost of 1500%. UCSF realizes these gains because TeleForm automates the capture of critical research information and processes high volumes of data accurately—with minimal ongoing maintenance required. TeleForm's form design capabilities also pay big dividends for UCSF. To date, the university has created more than 1,000 unique questionnaires for use in its research studies. The ability to design questionnaires quickly and easily has helped UCSF roll out new research projects even faster—with some studies taking only a few weeks to launch. The value of accelerating the launch of a major, multi-year medical research project is significant, particularly for study sponsors in the pharmaceutical industry—where blockbuster drugs can generate millions of dollars a day.

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