



Saving Time with Electronic Medical Records & Forms

Workflow. Like most buzzwords, the term is used more times in a day than the coffee machine. But what does it really mean? Generally associated with administrative processes, “workflow” hints at those vital enabling technologies deployed to automate the administrative aspects of business. In health care, as in any industry, workflow ensures that the appropriate individuals, in the appropriate sequence, will carry out the necessary actions pertaining to the business processes critical to supporting the organization. Paper workflow achieves this by mapping where information needs to go, but is inherently inefficient. New solutions in workflow turn instead to executing software to sequence the business process and then to mimic it so that information can be handled more flexibly on the computer screen instead of in a stack of disparate paper forms.

Perhaps the bulkiest stoppage in paper workflow is the slow and redundant entry of medical data. Most ophthalmologic procedures, for example, take an average of only 20 minutes. By comparison, completing the accompanying form package takes, on average, twice as long. Much of the data is repeated information, having already been entered into the hospital’s mainframe computer when the patient first checked in. In many hospitals, the redundancy runs deep, requiring patients to complete similar or identical forms in every office visited. A software solution would superimpose this data onto each department’s forms, onscreen, directly from the hospital’s mainframe computer. The software needed to achieve this would “remember” all of the data entered and would automatically place this information into the appropriate fields. The idea is that staff should only have to enter the patient’s information once, saving time and eliminating errors. When such an implementation was undertaken at the Jules Stein Eye Institute, the time required to fill form packages dropped from 40 minutes per package to a mere five. Some other benefits include a drastic reduction in storage requirements, instantaneous retrieval of patient records, and virtual elimination of clerical errors. The figures below illustrate the system currently deployed at UCLA.

UCLA DEMO
Create Profile [MAIN MENU](#) [LOG OUT](#)

Patient Name: (Last Name) (First Name) (Middle Name) Patient SSN: Eg: 123-45-6789

Patient Birth Date: Eg: mm/dd/yyyy Surgery Date: Eg: mm/dd/yyyy Cataract:

KPE W/IOL:

Patient Name	Patient SSN	Patient Birth Date	Surgery Date	Cataract	KPE W/IOL	Edit	Delete
Neil Fred F	123-99-8987	7/25/1980	7/20/2003			Edit	Delete
Waingraw David A	123-67-9087	7/11/1972	7/11/2003	Right Eye		Edit	Delete
Gálvez Javardo P	123-45-4779	1/1/2001	1/1/2001	ou		Edit	Delete
peanuts billy bob	101-01-1513	12/3/1950	5/30/2003	ou	od	Edit	Delete
Doe Jane R	111-11-1111	1/4/1945	5/28/2002	right eye	right eye	Edit	Delete

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1 The user submits a patient’s profile to eliminate redundant data entry and shorten document retrieval time.

A profile saves organizations time by eliminating redundant data entry. The profile also acts as an organizing tool. The system grants authorized users access to patient charts at the click of the mouse, relieving the user of the burden of constant paper shuffling and file searching. Patient information is entered only once; from there, it is applied directly to any form or chart within the organization as needed.

2 *The user can query through patient profiles. Once found, the link takes the user to the patient's full records...*

The system enables the user to search for patient form packets or charts using a variety of criteria such as first, last, or middle name, social security number, or other identifying information. The application is customizable to the organization's specific workflow, terminology and any pre-existing line-of-business applications. Form fields and keywords can be added or deleted to the database on the spot, by the average user, without the need for a database expert to code deep within the program.

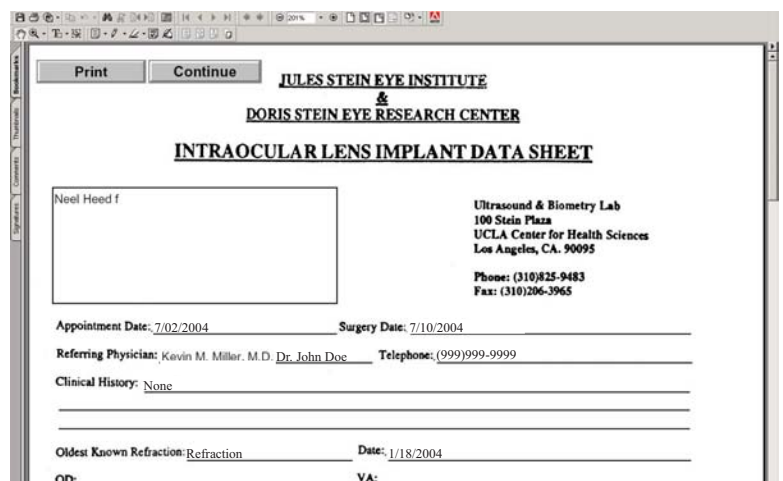


3 *... The patient's form packet appears. This packet is fully customizable.*

The user decides which document to use to create the patient's medical record. Each document is completely interactive, allowing the user to make changes to each field. The profiling feature and direct integration with the user's database work together to provide the data needed on the form. The application can easily be customized to work with any line-of-business application, from insurance processing, to medical records, to purchasing.

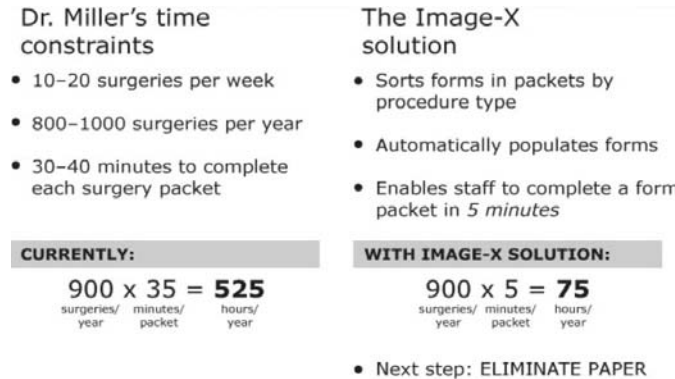
4 *Much of the data is automatically populated by the user's database.*

The user's database autopopulates most or all of the forms in the packet, eliminating tedious and repetitive data entry. These forms come standard with "type once" capabilities and a global corrections feature. If a field appears more than once throughout the packet, the user types the information once, and the system automatically autopopulates all of the corresponding fields. With global corrections, if a change is made to one field, that change will replicate in every field where the same information is required.



Filling out repetitive data, such as the patient's name, address, social security number, and other information on every form is time-consuming, forces staff to devote more of their attention to administrative tasks than to their patients, and could lead to tragic mistakes. By using a web-based electronic forms system, staff at UCLA can complete the needed forms in half the time, and then route the forms electronically to the correct department or doctor. Just as important, these forms are HIPPA-compliant. Providing password-protected viewing and an audit trail of recipients, these forms allow UCLA to implement new information management and exchange without raising new concerns about patient confidentiality.

Dr. Kevin Miller, Ophthalmologist at UCLA's Jules Stein Institute, was able to save his staff 450 hours of paperwork every year by implementing Image-X's electronic forms solution.



Features:

Form filler packages have captured niche markets by addressing the needs of users for repetitive form filling using a database or line-of-business application. Solutions like LiquidForms and JetForms address this need, but are costly. In recent years, a number of companies have begun offering an alternative: web-based electronic forms that allow form filling either on a local area network or over the Internet; these solutions also allow routing of forms to authorized parties for secure data sharing.

XForms use XML to combine these features in a comprehensive package while providing an open architecture to create, fill, route, integrate, import and export data with an organization's existing applications. The XForms technology allows the use of any word processor or graphics package that your organization is comfortable with to create the forms. These forms, once created, are equipped with full XML (eXtensible Markup Language) data-to-data software exchange capabilities. Image-X's Electronic Document Acceptance and Routing (EDAR) completes the solution to provide the most powerful data/document exchange system available.

XForms provides the following modules:

- 1) A form creation package to allow any organization's already-established Word, WordPerfect, PDF or TIFF-based form to be imported as a template or converted to PDF for XML tagging and used as a "smart form."
- 2) The XML Document Type Definition creation tool allows field tagging.
- 3) Button creation, e.g. Submit, Save, Clear, Print, and other functions as desired.
- 4) A form hosting module allows the forms to be hosted over an organization's own intranet or over the Internet, or provided as a stand-alone forms package.
- 5) A barcode creation module allows creation of a two-dimensional barcode upon printing the form. A special feature, the two-dimensional barcode can save 1880 characters of XML data per form.
- 6) A workflow module that allows routing of forms based on XML data.

XForms and **EDAR** are already serving health care organizations and government agencies to solve medical workflow, public health, and safety problems. These electronic solutions streamline organizations' existing workflow, resulting in rapid and significant return on investment. Image-X has launched the complete solution for agencies to create forms, update existing line-of-business database applications, catalyze workflow, and revise and add new forms easily and flexibly as organizations' needs evolve.

For more information about XForms or Image-X, please contact (805) 964-3535