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## ***CASE STUDY: PROCESSING H1N1 FLU VACCINE FORMS***

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### ***QAI Utilizes A2iA FieldReader™ to Help Providers in the Public and Private Sectors Capture Demographic and Health Information from H1N1 Vaccine Consent Forms***

#### **OVERVIEW**

Millions of H1N1 swine flu vaccines became available during the Fall of 2009, and while many contemplated whether or not to get the vaccine, government health officials had a different issue on their hands -- what to do with the millions of pages of healthcare forms that piled up once the shot became available. These consent forms were to be completed by each patient, by hand, prior to receiving the shot.

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***THOUSANDS OF HANDWRITTEN FORMS, IN BOTH ENGLISH AND SPANISH, WERE CONVERTED INTO SEARCHABLE AND ACCESSIBLE ELECTRONIC FILES.***

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In response to this logistical nightmare, Quality Associates, Inc. (QAI), a provider of services and solutions for large-scale document management, imaging, and archiving, launched its H1N1 Flu Vaccine Forms Processing Service. The service utilized *A2iA FieldReader™*, a proprietary toolkit that captures handwritten- and machine-printed information from documents and forms. These comprehensive approaches helped states, cities, counties, and providers in the private sector successfully and accurately capture and record essential demographic and health data from medical consent forms.

By converting thousands of handwritten forms in both English and Spanish into searchable and accessible digital electronic files for use by state

health officials, this integrated solution minimized data entry and provided a high level of accuracy of the information captured from the documents.

#### **CHALLENGE**

The availability of over 100 million vaccines created a serious and urgent need for states, municipalities and the private sector to immediately develop a clear strategy to effectively capture vital personal and healthcare-related information. Since the majority of these forms were handwritten, the situation became even more complex due to difficulties capturing the patient data with traditional recognition technologies like optical character recognition, OCR, or intelligent character recognition, ICR. This added to the challenge of providing valuable information back to the healthcare providers and officials in a timely manner, as well as maintaining patient confidentiality if a human data-entry operator was utilized.

Once information from the forms was collected, it had to be converted into a useable electronic format for insurance, reporting, and statistical needs. Without a digital capture methodology in place, municipalities and private healthcare providers risked losing funds due to lost or inaccurate recipient insurance information. Government agencies, such as the Centers for Disease Control and Prevention, also risked losing important data regarding vaccine distribution and efficacy.

Adding to the complexity of the situation, only a narrow window was allowed for information to be provided to insurance companies and to help federal government agencies understand the spread of the virus. There was also an element of disaster

mitigation: If a batch, or lot, of flu vaccine was ineffective or contaminated, individuals would need to be contacted quickly. Therefore, patient information had to be accessible in a timely manner.

### SOLUTION

QAI unveiled its H1N1 Flu Vaccine Forms Processing Service to assist the Maryland Department of Health and Mental Hygiene, which expected to receive more than 1.5 million forms, most of which were to be completed by hand in either English or Spanish. These forms were distributed by public and by private providers, schools, physicians' offices, and in stores/pharmacies at more than 1,800 sites in Maryland.

The service consisted of a four-step process:

- **Step 1 - Consultation:** QAI worked closely with vaccine administrators to understand the scope of the project, and then helped guide the entire process.
- **Step 2 – Forms Design:** Using experience gained by processing millions of healthcare forms collected during the administration of the yearly flu vaccine, QAI worked with state officials to design a streamlined, easy-to-use form for each vaccine recipient to complete prior to receiving the shot.
- **Step 3 – Forms Processing:** The service involved scanning and extracting data from the forms, utilizing high speed scanners and *A2iA FieldReader's* proprietary artificial intelligence and image analysis capabilities, including Intelligent Word Recognition (IWR) and cursive handwriting recognition. Since *A2iA FieldReader* does not require character separators, the absence of all constrained handprint boxes enabled the patient to complete the consent form faster. *A2iA FieldReader* also has the ability to recognize entire words, which eliminated character-based recognition errors and resulted in higher accuracy levels. By combining the most advanced OCR, ICR, IWR and proprietary cursive handwriting recognition technology to capture data from any paper form, *A2iA FieldReader* easily extracted the patient information, creating a more efficient workflow and a faster throughput.

Quality assurance steps, or 'verification', ensured the accuracy of all captured data and QAI's controlled, on-shore processing protected sensitive patient information.

- **Step 4 – Data Integration:** QAI submitted all original documentation and captured data to the state. Data could then be provided in one of several formats to ensure compatibility with the provider's own systems, and included all information required by the Centers for Disease Control and Prevention.

### RESULTS

Because minimal training was required for users of the H1N1 Flu Vaccine Forms Processing Service, forms were processed quickly. Since its rollout, the anticipated amount of data entry was dramatically reduced.

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***THERE HAS BEEN A CONSISTENTLY HIGH LEVEL OF ACCURACY, AND NEARLY NO RECOGNITION ERRORS, BECAUSE OF A2iA FIELDREADER'S ABILITY TO READ ENTIRE WORDS AND PHRASES RATHER THAN JUST CHARACTERS.***

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QAI's faster, more efficient workflow has enabled the State of Maryland to quickly capture vital personal and health-related data, while still maintaining patient confidentiality.