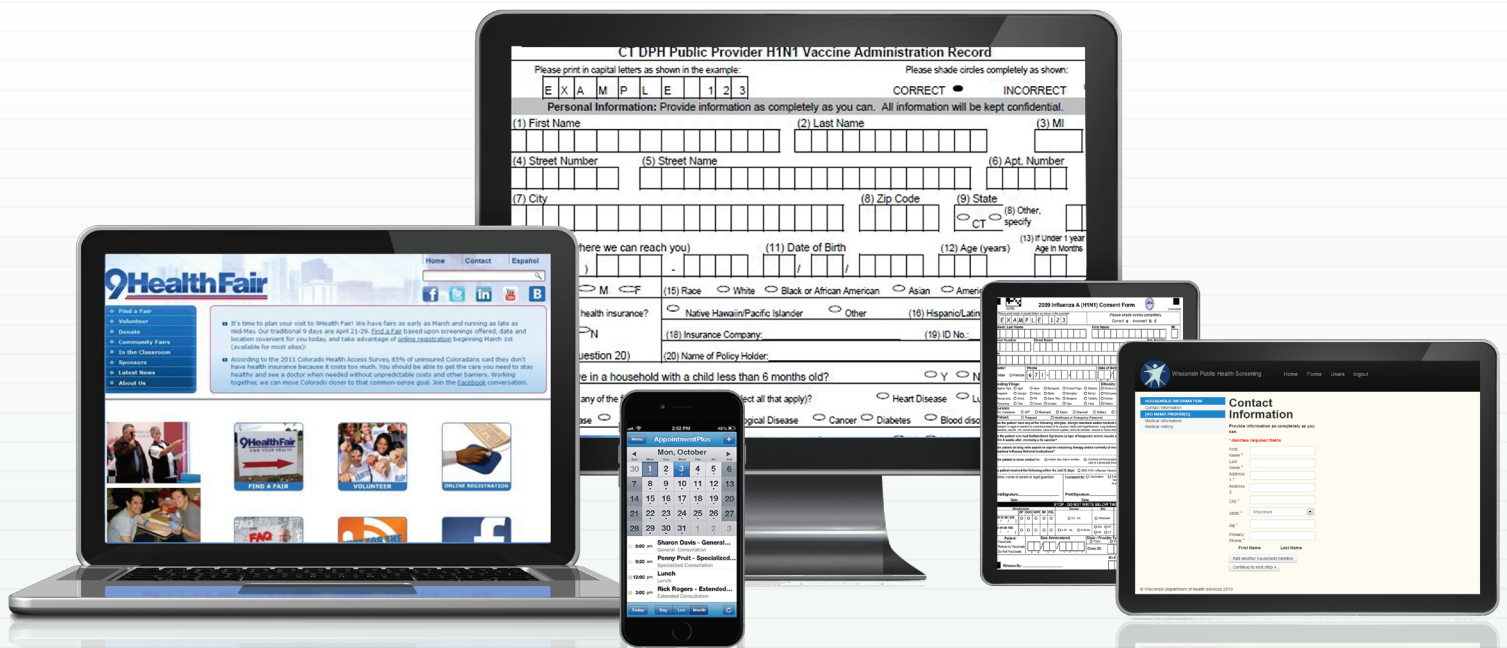


Catalog of Electronic Technologies Used for Data Collection at Vaccination Clinics

A Helpful Guide for Health Departments, Employee Health Clinics, and Others Who Are Implementing Vaccination Clinics



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Background

During an influenza pandemic or other vaccine-preventable disease outbreak, it will be essential to vaccinate many people as quickly as possible. Tracking vaccination status will be particularly important in order for public health officials to manage the pandemic or outbreak effectively. This ability to track is especially important if there are multiple vaccine products, a need for multiple vaccine doses with adjuvant in each dose, and/or a need to match vaccine and adjuvant type between doses. Vaccination administration information (i.e., patient and vaccine information) would need to be collected quickly, recorded into an electronic system, and reported to the jurisdiction's Immunization Information System (IIS).

For many health departments, data collection during mass vaccination clinics is often done manually, which can be time-consuming and labor intensive. In addition, transferring clinic data to the IIS manually allows for susceptibility to data entry errors and delayed entry. Simplifying the process of information entry into systems such as an electronic health record (EHR) system or IIS is an important part of preparing for the next pandemic. Health departments use a variety of methods and technologies to collect patient and vaccine information during routine vaccination clinics and during mass vaccination clinics and/or points of dispensing (PODs) conducted during influenza pandemics and other public health emergencies. Prior to this project, a comprehensive catalog describing these technologies did not exist.

Methods

The Immunization Services Division (ISD) in the National Center for Immunization and Respiratory Diseases (NCIRD) at the U.S. Centers for Disease Control and Prevention (CDC) contracted with ORAU to identify different methods used for collecting patient and vaccine information during mass vaccination clinics and develop a catalog of the existing technologies. As a first step, ORAU conducted an environmental scan, which included literature and internet searches, as well as key informant interviews. The scan identified different types of technologies used to collect patient and/or vaccine information during mass vaccination clinics and helped inform future project information collection activities (e.g., survey development, identification of technology evaluative criteria). Next, CDC collaborated with the National Association of County and City Health Officials (NACCHO), the Association of Immunization Managers (AIM) and ORAU to conduct a survey to identify electronic technologies used to collect patient and/or vaccine information during vaccination clinics. Lastly, follow-up interviews were conducted with survey participants to elicit detailed information to complete the technology catalog (e.g., technical requirements, costs, training). In addition, time motion analyses were conducted with five different technologies.

Results

There were seven different technology types identified through the project: barcode scanners, digital pens, magnetic card swipers, mobile, scanning, and web-based technology. A total of 16 technologies were identified and are displayed in the following pages.

Limitations

Although an extensive search was conducted using the methods outlined above, the list of technologies is unlikely to include every electronic technology available to collect patient and/or vaccine information during vaccination clinics. The information listed about the organizations that have used or are currently using these technologies are based on organizations that provided information and approval to be listed in the catalog.

Instructions on How to Use the Catalog

This catalog is intended to assist health departments and others interested in improving the efficiency of their vaccination clinics. This catalog is laid out by technology type with a brief description, summary of features and capabilities, and type of data collected by each technology. The reported data collected by the technology is based on how it was used by the organization that provided the information. Data elements for the data each technology collected are based off of CDC's NCIRD and American Immunization Registry Association's IIS recommended core data elements. Technology requirements such as software, hardware, and internet connection are listed when applicable. The training and technical support elements are based on if they were offered by manufacturer. The catalog also provides information on whether or not the technology imports data electronically to a database such as IIS, EMR, etc. The information in this catalog is not intended to endorse any specific product or brand, but rather to provide information on the types of technologies available. Products are listed in alphabetical order by technology type.



Glossary

This section defines terminology for how they are used for the purpose of this catalog.

Barcode Technology - a barcode scanner that reads digits, characters, or images that are in 1 dimensional (1D) or 2 dimensional (2D) patterns.

Electronic Medical Records (EMR) - digital version of traditional paper-based medical records for an individual.

Immunization Information System (IIS) - confidential, population-based, computerized databases that record all immunization doses administered by participating providers to persons residing within a given geopolitical area.

Magnetic Card Swipers - a device that reads the information encoded in magnetic stripes located on the back of credit cards, IDs, etc.

Mass Vaccination Module - a module within an Immunization Information System that is used for data collection only for mass vaccination and not for everyday vaccination information.

Mobile Technology - a portable device that can store data and applications, scan barcodes, capture photos, and can be used to transmit information using wifi.

Online registration - an online based software that utilizes a web browser and allows for patient registration and/or medical screening and information to be collected.

Patient information - was defined to include (but not limited to) demographic information (e.g., name, date of birth, race/ethnicity, gender, and contact information), medical history, and health insurance information.

Scanning Technology - software where paper forms are scanned and data are transmitted electronically to populate electronic databases.

Vaccine information - was defined to include (but not limited to) date of vaccination, lot number, vaccine expiration date, type of vaccine, and vaccinator name

Vaccine Information Statement (VIS) - is a documents, produced by CDC that informs vaccine recipients about the benefits and risks of the vaccine they are receiving.

Web-based technology - a software application that allows for storing, managing, and tracking of information. The software can also be used to capture patient and vaccine information during vaccination clinics.



Barcode Scanners



Honeywell 4600G

The Honeywell 4600G is a barcode scanner that can help speed up the process for entering data during vaccination clinics. Patient demographics can be scanned from linear and 2D barcodes on driver’s licenses or state identification cards and vaccination information can be captured from vaccine vials or generated barcodes. Currently, the barcode scanners can only scan driver’s licenses from Wyoming and some neighboring states (i.e., South Dakota, Montana). Scanning function does not require internet connection and scanners connect to the computer via USB ports. The Honeywell 4600G is currently being used by Washington State’s Department of Health and Campbell County, Wyoming local health department. Data is populated directly into Washington’s IIS (WAIS) and Wyoming’s IIS (WYIR) real time during vaccination clinics. Data that populates into the IIS is not encrypted.

Technology Details

Manufacturer	Honeywell	Technical support	Y
		online	www.honeywellaidc.com
Model	4600	Cost per device	\$200-\$450
Website	www.honeywellaidc.com/CatalogDocuments/4600G_DS_RevH_0110_EN.pdf	Imports data electronically to database	Y
Technical requirements		database type	IIS
platform	N	Barcode type	
internet connection required	N	linear	Y
software	compact disc to sync barcode to IIS	2D	Y
Manufacturer training	N	Barcode scanner power source	
user manual available	Y	corded	Y

Type of Information Collected⁺

PATIENT INFO	Address	Y	VACCINE INFO	Vaccination date	Y	Vaccine manufacturer (MVX code)	Y
	Birth date	Y		Vaccine expiration date	Y	Vaccine provider	Y
	First name	Y		Vaccine injection site	Y	Vaccine type (CVX code)	Y
	Last name	Y	Vaccine lot number	Y			
	Middle name	Y					
	Sex	Y					

⁺Device may have the capability to collect additional information that is not reported here.



Mass Vaccination Modules

CASE STUDY

HONEYWELL 4600G

Mass Vaccination Modules

Mass vaccination modules are additional components of some Immunization Information Systems that is used for data collection only for mass vaccination and not for everyday vaccination information. Mass vaccination modules may have more extensive capabilities than reported in this catalog but for our purposes we only focused on patient and vaccine information data collection during vaccination clinics. Currently, Washington State Department of Health and Campbell County, Wyoming local health department are using their mass vaccination modules during mass vaccination clinics along with barcode scanners (Honeywell 4600G) to scan patient demographic information from drivers licenses and vaccine information from vaccine vials and/or generated barcodes.

Campbell County, Wyoming: Barcode Scanner with Mass Vaccination Module

The mass vaccination module is used for seasonal influenza vaccinations when knowing patients' vaccination history is not necessary. The mass vaccination module has the capability to allow users to pre-load vaccine lot numbers prior to clinic and click the appropriate lot number during data collection instead of typing the information when using standard IIS mode. This saves time because the lot numbers are pre-populated and faster to collect data during the clinic because the vaccinator can enter in patient information without opening the entire patient record.

Vaccination default settings (e.g., vaccinators, lot numbers, manufacturers, clinic dates) can be manually entered prior to clinic to help save time by allowing vaccinators to use drop-down menus of pre-populated information at the time of vaccination and helps patients move through the vaccination process quickly.

When the barcode scanner is used, patient's demographic information from driver's licenses is populated directly into the IIS mass vaccination module (those without driver's licenses are manually entered). The use of barcode scanners reduces data entry of patient demographics and data entry errors. All information is completed real time during the vaccination clinic. Currently, the barcode scanners can scan Wyoming driver's licenses and some neighboring states, including South Dakota and Montana.

During patient registration, the IIS is capable of forecasting needs for future doses (such as pneumococcal, HPV, and pandemic influenza vaccine) and can be provided if they are being offered during the mass vaccination clinic. This capability can help reduce missed vaccination opportunities.

The mass vaccination module contains a "waiting room" feature which allows you to pre-enter a list of patients waiting to be vaccinated. This feature could be used to create a list of patients who have appointments for vaccines prior to the start of a mass vaccination clinic. Staff can select patients from the waiting room list and complete vaccination information. The feature can also be used to hold patients in que if the patient requires multiple vaccines and are given at different stations at the clinic.

Washington State: Barcode Scanner with Mass Vaccination Module

Vaccination default settings (e.g., vaccinators, lot numbers, manufacturers, clinic dates) can be manually entered prior to clinic to help save time by allowing vaccinators to use drop-down menus of pre-populated information at the time of vaccination and helps patients move through the vaccination process quickly. A barcode scan sheets containing vaccination information and barcodes for vaccinators can be created in the mass vaccination module to use during the mass vaccination clinic.

When the barcode scanner is used, patient's demographic information from driver's licenses are populated directly into the IIS mass vaccination module. The barcode scanner is also used to scan barcode sheets created for vaccination information and vaccinators.

The mass vaccination module contains a "waiting room" feature which allows you to pre-enter a list of patients waiting to be vaccinated. This feature could be used to create a list of patients who have appointments for vaccines prior to the start of a mass vaccination clinic. Staff can select patients from the waiting room list and complete vaccination information. The feature can also be used to hold patients in que if the patient requires multiple vaccines and are given at different stations at the clinic. Washington State developed just-in-time training videos on the use of mass vaccination modules <http://jitt-wa.stchome.com>.



Motorola DS4208

Motorola DS4208 is a barcode scanner that can help speed up the process for entering data during vaccination clinics. Patient demographics can be captured from driver’s licenses and vaccination information can be captured from vaccination vials or created barcodes. The device has the ability to scan linear and 2D barcodes on paper, mobile devices, and computer screens. Scanning function does not require internet connection and scanners connect via USB ports. Data on this barcode scanner was provided by Wisconsin’s immunization program from a pilot project with eight sites. Data that populates into the IIS is not encrypted.

Technology Details

Manufacturer	Motorola	Technical support	Y
		online	www.portal.motorolasolutions.com/Support/US-EN/
		phone	800.653.5350
Model	DS4208	Cost per device	\$150-\$200
Website	www.atgsupportcentral.motorolasolutions.com/content/emb/docs/manuals/13923205a.pdf	Imports data electronically to database	Y
Technical requirements		database type	IIS
platform	N	Barcode type	
internet connection required	N	linear	Y
software	N	2D	Y
Manufacturer training	N	Barcode scanner power source	
user manual available	Y	cordless	Y

Type of Information Collected⁺

PATIENT INFO	Address	Y	VACCINE INFO	Vaccine dose volume and unit	Y	Vaccine route of administration	Y
	Birth date	Y		Vaccine expiration date	Y	Vaccine type (CVX code)	Y
	First name	Y		Vaccine injection site	Y		
	Last name	Y		Vaccine lot number	Y		
	Middle name	Y		Vaccine manufacturer (MVX code)	Y		
	Sex	Y		Vaccine provider	Y		

⁺Device may have the capability to collect additional information that is not reported here.



Digital Pen



Capturx

Capturx is a battery operated computing device that converts handwritten information on paper to electronic data that can be modified and formatted. The digital pen is used like an ordinary pen. Internet connection is not required; data are stored on password protected digital pen and uploaded to database once placed on docking station. Capturx has the ability for data to be uploaded to a secure SharePoint site via wifi.

Capturx is an add-in that is capable with Microsoft Office (e.g., Excel) and allows for customization of forms to capture desired fields for patient and/or vaccine information. It allows for coding of fields for type of information to collect (e.g., numbers, text). Forms are printed on ordinary paper with a special watermark that enables them to be used with digital pen. Capturx automatically uploads the data and inserts into the correct formatted cells and allows for information to be verified. Capturx has the capability to view a digital text or the original handwritten version of the form once it has been uploaded.

This technology allows for the user to obtain a paper and electronic form of the information collected. Capturx reduces data entry and allows immediate access to data after it is collected. In addition, Capturx also offers a summary table view which aggregates all entries on each form for analysis as well as a link to the original form to simplify searching of forms. Currently, Capturx is being used by New Hampshire Division of Public Health for field surveys, not for data collection of vaccination information.

Type of Information Collected⁺

PATIENT INFO	Address	Insurance status	Other information**
	Assigning Authority ID***	Last Name	Patient multiple birth indicator
	Birth date	Middle name	Phone Number
	Ethnicity	Mother's first name	Race
	First name	Mother's last name	Relationship to Patient
	ID Type*	Mother's maiden name	Sex

Technology Details

Manufacturer	Adapx	Manufacturer training	Y
		online	www.adapx.com/support/tutorials
Technology name	Capturx	Technical support	Y
		online	www.adapx.com/support/contact
Website	www.adapx.com	Cost per device	
		unit	\$300
Technical requirements		additional software	\$3,000
platform	Microsoft Excel	Imports data electronically to database	Y
internet connection required	Y	database type	other electronic database
hardware	N		
software	Y		

VACCINE INFO

Contraindication(s)/precaution(s)	Vaccine injection site
Contraindication(s) precaution(s) observation date(s)	Vaccine lot number
Date of history of vaccine preventable disease	Vaccine manufacturer (MVX code)
Exemption(s)/parent refusal(s) of vaccine	Vaccine provider
Vaccination date	Vaccine reaction(s)
Vaccine dose number	Vaccine route of administration
Vaccine dose volume and unit	Vaccine type (CVX code)
Vaccine expiration date	VIS date given to patient
	VIS type & publication date

Software can be customized to include desired patient and vaccine information.

* (e.g., medical record number, IIS ID) ** (occupation, medical history) *** (i.e., owning source)
 +Device may have the capability to collect additional information that is not reported here.



Magnetic Card Swipers



IDWedge

IDWedge swipes driver’s licenses or state identification cards to collect patient identification information and prefills into a customized Microsoft Access database real time; vaccination information (e.g., lot number, vaccination date) is manually entered for each patient during the time of vaccination. Prior to the clinic, a simple user defined formula is generated to specify the field order (first, last, etc.) and the keystrokes (tab, arrow up, enter) which are sent to a database. Internet connection is not required and the device is connected via USB ports. IDWedge can be used to fill any form on a computer that accepts keyboard input but data is not encrypted. IDWedge makes data collection faster and accurate and reduces data entry for patient information. Currently, Philadelphia Department of Health is using IDWedge.

Technology Details

Manufacturer TokenWorks

Technology name IDWedge

Website www.tokenworks.com/products/idwedge

Technical requirements

platform	N
internet connection required	N
software	compact disc

Manufacturer training Y

Technical support Y

online	support@tokenworks.com
phone	800.574.5034

Cost per device **\$700**

Imports data electronically to database Y

database type	other electronic database
---------------	---------------------------

Type of Information Collected⁺

PATIENT INFO	Address	Y
	Birth date	Y
	First name	Y
	Last name	Y
	Sex	Y

VACCINE INFO Vaccine information is not captured using device, information is manually entered at the time of vaccination.

⁺Device may have the capability to collect additional information that is not reported here.



MagTek Mini Swipe Card Reader

The mini swipe card reader assists with registering patients during vaccination clinics by swiping patients' driver's license or state identification card to collect demographic information. The information from the driver's license prepopulates into EMR using software that allows the user to code and specify how the fields populate into the database. Data that populates into the EMR is not encrypted. Internet connection is not required to use the device but necessary if the electronic database the information is importing into requires an internet connection. The mini swipe card reader connects via USB port and allows for bi-directional swiping of IDs. Magtek is currently being used by Erie County Health Department in Pennsylvania.

Technology Details

Manufacturer	MagTek	Manufacturer training	N
		user manual available	Y
Technology name	Mini reader	Technical support	Y
		online	support@magtek.com
Website	www.magtek.com/V2/products/secure-card-reader-authenticators/magnesafe-mini.asp	phone	888.624.8350
Technical requirements		Cost per device	\$85
platform	N	Imports data electronically to database	Y
internet connection required	N	database type	EMR
software	Y		

Type of Information Collected⁺

PATIENT INFO	Address	Y
	Birth date	Y
	First name	Y
	Last name	Y
	Middle name	Y

VACCINE INFO
 Vaccine information is not captured using device, information is manually entered at the time of vaccination.

⁺Device may have the capability to collect additional information that is not reported here.



Mobile Technology

Handheld Automated Notification for Drugs and Immunizations (HANDI)

Handheld Automated Notification for Drugs and Immunizations HANDI is a paperless mobile device that supports efficient public health immunization and prophylaxis activities through rapid collection and transfer of standardized data. The mobile application software (MI Clinic) automates patient processing and data collection for health campaigns and reduces manual data entry. HANDI can operate in several network environments: 1) a disconnected environment (no wireless internet connection) where data are collected on the device and uploaded once internet connection is established, 2) HANDI designated network where wifi hotspots can be used to connect a laptop with HANDI server and device and information is pushed from device to server, 3) existing network where devices are connected to existing server and information is transferred. The data are transferred in real-time when the device is connected to the internet.

HANDI has a server for defining campaigns and collecting data captured by the mobile devices. Campaigns are created on the server to define patient demographic fields (e.g., name, birth date, sex) to capture vaccine information (e.g., vaccinator, lot number, manufacturer) that will pre-populate in application on device. Fields can be created to capture insurance information (drop down menu of insurance types) and patient specific policy numbers and be manually entered during clinic.

HANDI utilizes barcode/magnetic stripe scanning technology through a “sled” accessory. If a sled is not available, newer versions of iPod touch and iPhones can capture IDs and prepopulate desired fields via the camera on the device. Also, images of insurance cards and electronic signatures can be captured. The data are stored in encrypted format on the device to ensure patient privacy and HIPAA compliance and then securely transferred to the server database (real-time with wireless internet connection).

HANDI is designed for a three-station workflow (patient registration, medical screening, and vaccination) where the device is used at each station. When workflow is separated, a mobile printer is used to print a patient-specific barcoded label and patient takes that to the next stations to be scanned. In addition, HANDI was the only technology assessed that had the capability to provide patients with a printed proof of vaccination at the end of the clinic. The server bundles the data from each station and the complete patient record is transferred to a designated database. The workflow could be conducted by a person on one device.



HANDI has the ability to securely transfer data to repositories (e.g., immunization registries) using HL7 standards. Also, rapid electronic data storage allows for real-time reporting and data analysis (e.g., number of people served, demographic characteristics, risk factors and geo-locatable information). HANDI is currently being used by Denver Public Health.

Technology Details

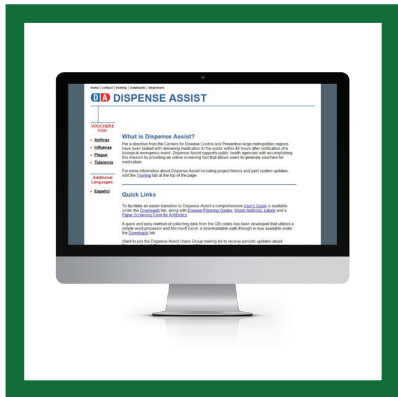
Manufacturer	
software	Countermind, LLC
iPod touch, iPhone	Apple
sled	Honeywell/Infinite Peripherals
mobile printer	Zebra
Technology name	
HANDI (Handheld Automated Notification for Drugs and Immunizations)	
Website	
www.countermind.com	
www.denverhealth.org/for-professionals/clinical-specialties/public-health/public-health-informatics-and-technology/handi	
Technical requirements	
platform	iOS
internet connection required	N
software	HANDIMI clinic

Manufacturer training		Y
onsite		available
phone		available
Technical support		Y
online	www.countermind.com	
phone		720.708.4400
Cost per device		
iPod touch,iPad, iPhone		\$200-\$500
Captuvo sled		\$600
mobile printer		\$330-\$1000
other costs	may be subject to maintenance fee if hosted on Countermind server.	
Imports data electronically to database		Y
database type		other electronic database, IIS

Type of Information Collected⁺

PATIENT INFO	Address	Y	VACCINE INFO	Vaccine date	Y	Vaccine manufacturer (MVX code)	Y
	Birth date	Y		Vaccine dose number	Y	Vaccine provider	Y
	Email	Y		Vaccination dose volume and unit	Y	Vaccine route of administration	Y
	First name	Y		Vaccine expiration date	Y	Vaccine type (CVX code)	Y
	Last name	Y		Vaccine injection site	Y		
	Middle name	Y		Vaccine lot number	Y		
Sex	Y						

⁺Device may have the capability to collect additional information that is not reported here.



Online Registration Technology



9HealthFair

9HealthFair is a non-profit health fair program where organizations can coordinate their vaccination events. It allows for people to register online and print off a ticket to bring to the clinic. If additional health screenings are offered (e.g., hemoglobin A1C), 9HealthFair has a secure website where people can review their results. 9HealthFair is currently being used by a local health department in Colorado.

Technology Details

Manufacturer	N/A	Manufacturer training	N
Technology name	9Health Fair	Technical support	Y
Website	N/A	phone	800.332.3078
Technical requirements		Cost per device	N/A
platform	web browser	unit	
internet connection required	Y	Imports data electronically to database	N
hardware	N		

Type of Information Collected⁺

PATIENT INFO	Assigning Authority ID***	Y
	Birth date	Y
	Email address	Y
	First name	Y
	Insurance status	Y
	Last Name	Y
	Middle name	Y
	Phone Number	Y
Sex	Y	

VACCINE INFO
 Vaccine information not captured using software, information recorded manually on paper form during clinic.

* (e.g., medical record number, IIS ID) ** (occupation, medical history) *** (i.e., owning source)
 +Device may have the capability to collect additional information that is not reported here.



AppointmentPlus

AppointmentPlus is an online scheduling software that allows for patient pre-registration, scheduling vaccination appointments online, inventory management, vaccination appointment reminders and staff scheduling. It saves patients and clinic staff time and assists with managing clinic resources. Patients are able to go online and schedule their appointment, complete patient demographic and medical screening questions, and print out to bring to clinic.

AppointmentPlus users can view the number of people registered prior to the vaccination clinic and appointment times can be changed real-time. During the clinic, AppointmentPlus software helps with clinic flow by eliminating the time-consuming tasks of completing paperwork onsite. Appointment Plus is cloud-based and housed on a secure server with a backup system. Users pay a monthly fee to use the software located on AppointmentPlus server. The software also allows for reports to be generated and exported to Microsoft Excel or HTML. Data from clinic is manually entered into IIS. Currently, a local health department in New Jersey uses AppointmentPlus.

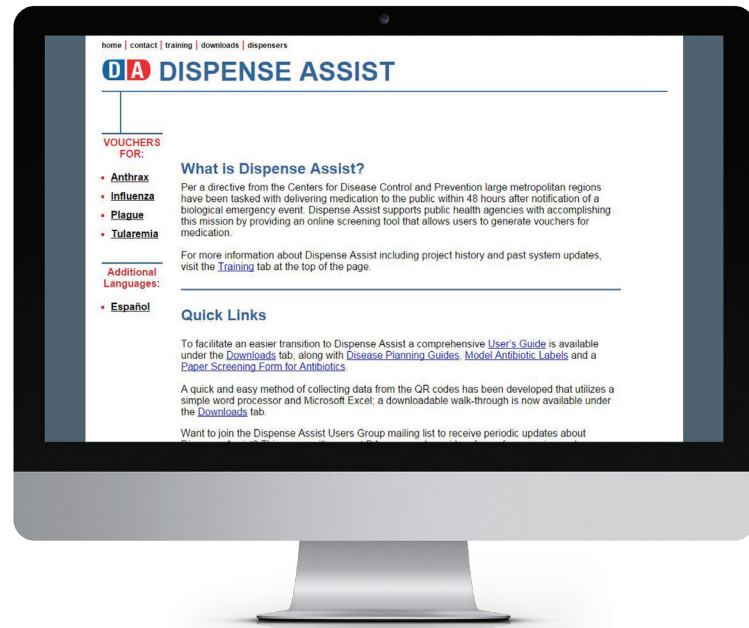
Technology Details

Manufacturer	StormSource	Technical support	Y
		phone	800.988.0061
Technology name	Appointment Plus	Cost per device	
		unit	\$49-\$99/month
Website	www.appointment-plus.com	other costs	required monthly fee to house information on Appointment Plus server
Technical requirements		Imports data electronically to database	N
platform	web browser		
internet connection required	Y		
Manufacturer training			
onsite	Y available		

Type of Information Collected⁺

PATIENT INFO	Birth date	Y	VACCINE INFO	Vaccine information not captured using software, information is captured manually on paper form during clinic.
	First name	Y		
	Insurance Status	Y		
	Last Name	Y		
	Middle name	Y		
	Sex	Y		

⁺Device may have the capability to collect additional information that is not reported here.



Dispense Assist

Dispense Assist allows for online patient registration and medical screening using a web browser. Dispense Assist is user-friendly for patients completing form online, person creating the form, and clinical staff. The software reduces data entry and speeds up vaccination because patients have the option to register offsite. The software creates a quick response (QR) code on vouchers that the patient can print and bring to the clinic. If patients do not have Internet access or printer capabilities, stations are available at clinic to allow for onsite registration. In addition to streamlining the vaccination process, Dispense Assist also determines what medication a person is eligible to receive based on the answers to the medical screening questions. Dispense Assists allows for information to be filled out for multiple family members.

Scanning of the QR codes does not have to be done in real-time at the clinic. There is the option to record vaccination information on the form and scan into the database later. Dispense Assist can be downloaded on a computer and be used without internet connection. DA is also available as a mobile application where barcodes can be scanned directly from the mobile device. In addition, DA has the capability to be translated to Spanish through a link provided on the website.

There is no registration required to use the software and it is free. It is non-proprietary because it does not store any information on the website. Also, an Excel datasheet is provided for data from the clinic to be collected. The data-sheet can be manipulated and imported into EMRs. Dispense Assist was created by Johnson County, Kansas and is currently being used by multiple health departments and hospitals in multiple states.

Technology Details

Manufacturer Johnson County Health Department, KS

Technology name Dispense Assist

Website www.dispenseassist.net

Technical requirements

platform web browser

internet connection required Y

software Microsoft Excel

Manufacturer training Y

online www.dispenseassist.net/Training.html

Technical support Y

online dispenseassist@jocogov.org

phone 913.477.8343

Cost per device

unit **free**

additional hardware barcode scanner that reads QR codes

Imports data electronically to database N

database type other electronic database

Type of Information Collected⁺

PATIENT INFO	Address	Y
	Birth date	Y
	First name	Y
	Insurance Status	Y
	Last Name	Y
	Middle name	Y
	Phone Number	Y
	Sex	Y

VACCINE INFO	Vaccination dates	Y
	Vaccine expiration date	Y
	Vaccine injection site	Y
	Vaccine lot number	Y
	Vaccine manufacturer (MVX code)	Y
	Vaccine provider	Y

Vaccine route of administration	Y
Vaccine type (CVX code)	Y
VIS date given to patient	Y

⁺Device may have the capability to collect additional information that is not reported here.



Public Health Event Web Registration (PHEWR)

Public Health Event Web Registration is a free software application that collects patient demographic information and medical screening questions prior to vaccination clinics. The software allows appointment times to be created and the patient can select the desired time and date. This helps manage clinic flow and staff resources. Vaccination appointment times can be adjusted in real time. Tickets are printed with registration, screening information, and time/date chosen. Public Health Event Web Registration data is stored on a secure server, from which users can create reports using reporting tools with support SQL database standards (e.g., Microsoft Server Reporting Services). Public Health Event Web Registration has the capability to download data from clinic into an EMR; data for IIS is manually entered. Public Health Event Web Registration was developed by Larimer County, Colorado and used by multiple health departments in Colorado.

Technology Details

Manufacturer	Larimer County Department of Health and Environment	Technical support	Y
		online	jschreurs@larimer.org
Technology name	Public Health Event Web Registration (PHEWR)	Cost per device	
		unit	free
Website	www.phethos.org/phewr-development.html	other costs	
		onsite training available for additional cost	
Technical requirements		Imports data electronically to database	Y
internet connection required	Y	database type	IIS
hardware	SQL Server 2005		
Manufacturer training			
onsite	available		

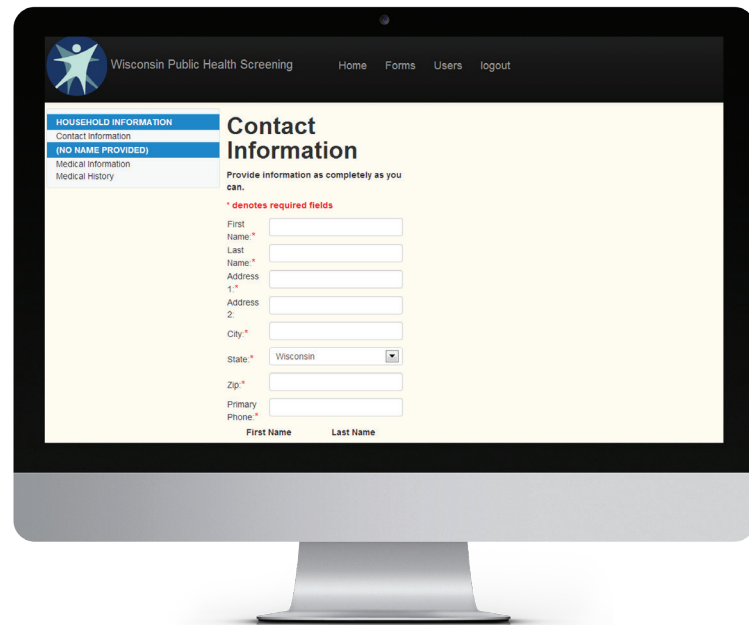
Type of Information Collected⁺

PATIENT INFO	Address	Y	Mother's first name	Y
	Assigning Authority ID***	Y	Mother's last name	Y
	Birth date	Y	Mother's maiden name	Y
	Email address	Y	Other information*	Y
	Ethnicity	Y	Phone Number	Y
	First name	Y	Race	Y
	Insurance status	Y	Relationship to Patient	Y
	Last Name	Y	Sex	Y
	Middle name	Y		

VACCINE INFO
Vaccine information not captured using software, information recorded manually on paper form during clinic or directly into EMR.

* (e.g., medical record number, IIS ID) ** (occupation, medical history) *** (i.e., owning source)

+Device may have the capability to collect additional information that is not reported here.



RightMed

RightMed is a free software that utilizes a web browser and allows for patient information to be collected, medical screening question to be answered, and drug interactions identified. Since screening and drug interactions are identified online, it allows for patients to skip registration/medical screening during the clinic and go directly to dispensing. Although the software is set up for countermeasure dispensing for Anthrax, it can be customized to be influenza specific. In addition, RightMed allows for customization of logo, unique URL, and name of organization using the software. RightMed has the capability to be coded for different languages (e.g., Spanish). Also, the software is non-proprietary because it does not store any information on the website. RightMed was developed by Wisconsin Department of Health and University of Wisconsin.

Technology Details

Manufacturer Wisconsin Department of Health and University of Wisconsin

Technology name RightMed

Website www.rightmed.org

NOTE: At time of publication url is not live

Technical requirements

platform	web browser
internet connection required	Y
hardware	compact disc with software on it to download

Manufacturer training Y
user manual available

Technical support Y
online available

Cost per device free
unit

Imports data electronically to database N

Type of Information Collected⁺

PATIENT INFO	Address	Y	Race	Y
	Birth date	Y	Relationship to Patient	Y
	Email address	Y	Sex	Y
	First name	Y		
	Last Name	Y		
	Phone Number	Y		

VACCINE INFO
Vaccine information not captured using software, information is captured manually on paper form during clinic.

⁺Device may have the capability to collect additional information that is not reported here.

This is a scanned image of a 2009 Influenza A (H1N1) Consent Form. The form includes a header with the CDC logo and the title '2009 Influenza A (H1N1) Consent Form'. It features a grid for patient information, a section for 'Medical History' with various conditions listed, and a 'Signature' section at the bottom. The form is marked with 'EXAMPLE' and 'Consent is required for:'.

This is a scanned image of an Influenza Vaccination Screening Form. The form has a header with the title 'Influenza Vaccination Screening Form' and a large 'DRAFT' watermark across the center. It includes a section for 'Patient Information' and a list of screening questions regarding medical conditions and allergies. The form is marked with 'EXAMPLE' and 'Consent is required for:'.

This is a scanned image of a C/DPI Public Provider H1N1 Vaccine Administration Record. The form is titled 'C/DPI Public Provider H1N1 Vaccine Administration Record' and includes a header with the CDC logo. It features a grid for recording vaccine administration dates and a section for 'Patient Information'. The form is marked with 'EXAMPLE' and 'Consent is required for:'.

Scanning Technology

Influenza Vaccination Screening Form

Please print clearly in blue or black ink, using CAPITAL LETTERS only, within the spaces provided.

Client Information: First Name, Last Name, Street Address (or Post Office Box), City, State, Zip Code, Telephone Number, Date of Birth, Age, Gender.

Clinic Code: AL

Answer YES or NO to each question below by marking with an X in appropriate box.

- Do you live with or provide care for infants under 6 months of age? YES NO
- Are you health care or emergency medical services personnel? YES NO
- If female, are you pregnant or might be pregnant? YES NO
- Do you have a long-term health problem such as heart or lung disease, asthma, reactive airways, kidney disease, metabolic disease (e.g., diabetes), blood diseases or are you on long term aspirin-therapy? YES NO
- Do you have an illness such as HIV/AIDS, lupus or cancer, or do you take any medication that might lower your body's resistance to infection? YES NO
- Do you have a severe allergy to eggs, gelatin or other components of flu vaccine? YES NO
- Are you feeling ill today or do you have a fever? YES NO
- Were you ever diagnosed with Guillain-Barre Syndrome (GBS)? YES NO
- Have you ever had a bad reaction to a flu vaccination in the past? YES NO
- Do you have close contact with immunosuppressed persons who require a protected environment? YES NO
- Have you received another vaccination in the past four weeks? YES NO
- Have you ever fainted after an injection in the past? YES NO

I have received, read and had my questions answered about the Vaccine Information Statement(s) for the doses to be given. I request that the dose(s) be given to me or the person named above, for whom I am responsible. My relationship to the patient is (e.g. Mother, Father, Guardian). I also allow release of any information needed to process insurance claims and request payment of medical benefits. I have received this clinic's HIPAA Notice of Privacy Practices information sheet, check here.

Signature: X Adult, parent, or guardian Date Signed: _____

V1.0 9/1/2009 Contact ALERT Customer Service at 800-960-9431. This is a double sided form, please mail completed original forms to Oregon Immunization ALERT. PAGE 1 of 2

Datacap

Datacap has the ability to create and customize forms in Microsoft Word to capture desired patient demographic information and vaccine information. The software is user-friendly for patients who are filling out the forms and the person creating the form.

The software allows for double-sided forms to be scanned and for scanned information to be reviewed and verified before accepting into database. When verifying, the software highlights required fields in yellow and fields with errors in red for easy review. Data is transmitted into a database which can aggregate data and be exported in various formats (e.g., Microsoft Excel). The data is converted using HL7 guidelines and imported into the IIS. Datacap was used by Oregon's immunization program during the 2009 H1N1 influenza season.

Technology Details

Manufacturer	IBM	Technical support	Y
		online	www.-01.ibm.com
		phone	877.426.3774
Technology name	Datacap	Cost per device	
		unit	\$5,000
		additional software	Y
		other costs	licensing, training, and scanners are additional costs.
Website	www-01.ibm.com/software/info/datacap	Imports data electronically to database	Y
		database type	IIS, other electronic database
Technical requirements		Scanning technology output format	
platform	Microsoft Office	PDF	Y
internet connection required	Y		
hardware	scanner		
software	Y		
Manufacturer training	Y		

Type of Information Collected⁺

PATIENT INFO	Address	Y	VACCINE INFO	Vaccination date	Y
	Assigning Authority ID***	Y		Vaccine dose number	Y
	Birth date	Y		Vaccine dose volume and unit	Y
	First name	Y		Vaccine expiration date	Y
	Last Name	Y		Vaccine injection site	Y
	Middle name	Y		Vaccine lot number	Y
Other information**	Y	Vaccine manufacturer (MVX code)		Y	
Phone Number	Y	Vaccine provider		Y	
Sex	Y	Vaccine type (CVX code)		Y	
		VIS type & publication date		Y	

* (e.g., medical record number, IIS ID) ** (occupation, medical history) *** (i.e., owning source)

+Device may have the capability to collect additional information that is not reported here.

The image shows a '2009 Influenza A (H1N1) Consent Form' with various fields for patient information, including name, address, phone, date of birth, gender, ethnicity, insurance, and vaccination status. It also includes a table for recording vaccine administration details like manufacturer, dosage, and date.

GoScan

GoScan allows for customization of forms and captures desired patient and vaccine information during vaccination clinics. The scanned information is transferred into a database and those data are converted to flat file and sent to IIS. The software works with any scanner or copier. GoScan is user-friendly and reduces data entry errors and increases productivity. GoScan provides both secure and encrypted transfer of information to the central server to ensure compliance with HIPPA privacy policies. GoScan was used by North Dakota's and Guam's immunization programs during 2009 H1N1 influenza pandemic.

Technology Details

Manufacturer	Formtran, Inc.	Technical support	Y
		online	support@goscan.com
		phone	858.240.2186
Technology name	GoScan		
Website	www.goscan.com	Cost per device	varies
		unit	
		other costs	\$45,000 price from 1 organization included software (GOIMAGE, GOSCAN, and FORMTRAN) licenses, services/online training; and 1 year support software maintenance. Subject to training and annual maintenance fee.
Technical requirements		Imports data electronically to database	Y
platform	web browser	database type	IIS
internet connection required	Y	Scanning technology output format	
hardware	scanner	PDF	Y
software	Microsoft.NET, GoScan, Golmage		
Manufacturer training	Y		

Type of Information Collected⁺

PATIENT INFO	VACCINE INFO
Address <input checked="" type="checkbox"/>	Mother's maiden name <input checked="" type="checkbox"/>
Birth date <input checked="" type="checkbox"/>	Other information** <input checked="" type="checkbox"/>
Birth state/country <input checked="" type="checkbox"/>	Phone Number <input checked="" type="checkbox"/>
Ethnicity <input checked="" type="checkbox"/>	Race <input checked="" type="checkbox"/>
First name <input checked="" type="checkbox"/>	Sex <input checked="" type="checkbox"/>
ID Type* <input checked="" type="checkbox"/>	Contraindication(s)/precaution(s) <input checked="" type="checkbox"/>
Insurance status <input checked="" type="checkbox"/>	Date of exemption/parent refusal of vaccine <input checked="" type="checkbox"/>
Last Name <input checked="" type="checkbox"/>	Vaccination date <input checked="" type="checkbox"/>
Middle name <input checked="" type="checkbox"/>	Vaccine dose volume and unit <input checked="" type="checkbox"/>
Mother's first name <input checked="" type="checkbox"/>	Vaccine injection site <input checked="" type="checkbox"/>
Mother's last name <input checked="" type="checkbox"/>	Vaccine lot number <input checked="" type="checkbox"/>
	Vaccine manufacturer (MVX code) <input checked="" type="checkbox"/>
	Vaccine provider <input checked="" type="checkbox"/>
	Vaccine route of administration <input checked="" type="checkbox"/>
	Vaccine type (CVX code) <input checked="" type="checkbox"/>
	VIS date given to patient <input checked="" type="checkbox"/>

* (e.g., medical record number, IIS ID) ** (occupation, medical history) *** (i.e., owning source)

+Device may have the capability to collect additional information that is not reported here.

Teleform

Teleform allows for customization of forms to capture desired patient and vaccine information during vaccination clinics. Teleform allows for forms to be created in both English and Spanish. Teleform automatically reads hand writing from the form, creates an image of the form, as well as the electronic populated form, and allows for data verification. When verifying, the software highlights fields with errors and allows for data to be corrected. The software assists with reducing manual entry. Teleform has the capability to securely export data in various file formats (e.g., Excel) allow for upload into other electronic repositories (e.g., IIS, EMRs). During the 2009 H1N1 influenza pandemic, New York City Department of Health and Mental Hygiene, as well as Michigan's and Connecticut's immunization programs used Teleform.

Technology Details

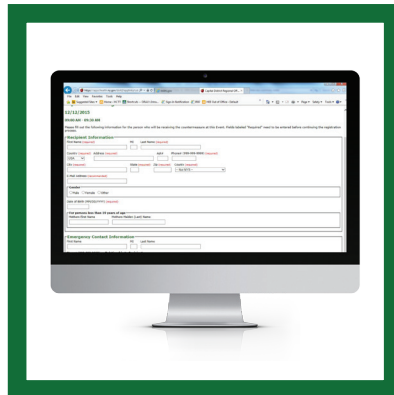
Manufacturer	HP	Technical support	Y
		online	info@hpteleform.com
		phone	949.829.5822
Technology name	Teleform	Cost per device	
		unit	N/A
		other costs	outsourced scanning and verifying: \$1/form for verifying; maintenance, enterprise platform; licensing, training, and scanners are additional costs.
Website	www.hpteleform.com	Imports data electronically to database	Y
Technical requirements		database type	IIS, other electronic database
internet connection required	Y	Scanning technology (output format)	
hardware	scanner, server to store data	PDF	Y
Manufacturer training	Y		
onsite	available		
online	available		

Type of Information Collected⁺

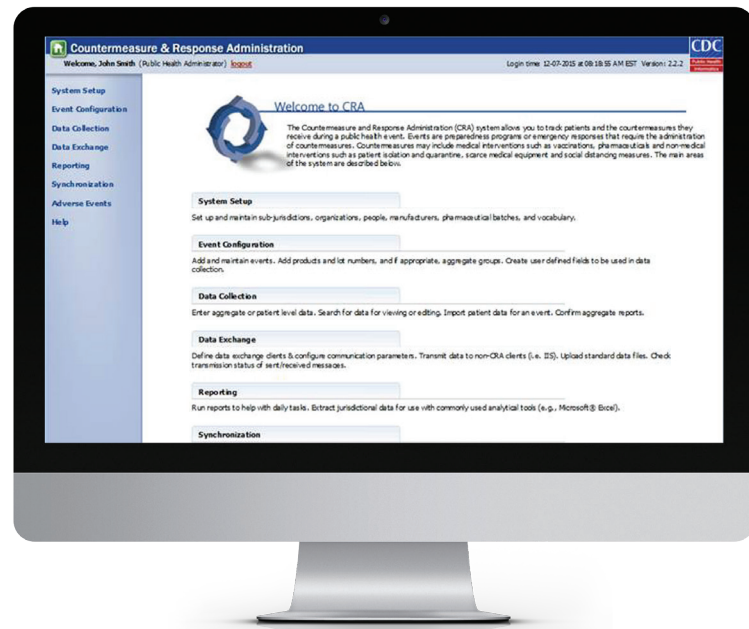
PATIENT INFO	Address	Y	Mother's maiden name	Y	Vaccine dose number	Y
	Assigning Authority ID	Y	Other information	Y	Vaccine dose volume and unit	Y
	Birth date	Y	Phone Number	Y	Vaccine expiration date	Y
	Ethnicity	Y	Race	Y	Vaccine injection site	Y
	First name	Y	Relationship to Patient	Y	Vaccine lot number	Y
	ID Type*	Y	Sex	Y	Vaccine manufacturer (MVX code)	Y
VACCINE INFO	Insurance status	Y	Contraindication(s)/precaution(s)	Y	Vaccine provider	Y
	Last Name	Y	Contraindication(s) precaution(s) observation date(s)	Y	Vaccine route of administration	Y
	Middle name	Y	Date of history of vaccine preventable disease	Y	Vaccine type (CVX code)	Y
	Mother's first name	Y	Vaccination date	Y	VIS date given to patient	Y
	Mother's last name	Y				

* (e.g., medical record number, IIS ID) ** (occupation, medical history) *** (i.e., owning source)

+Device may have the capability to collect additional information that is not reported here.



Web-based Technology



Countermeasure and Response Administration (CRA)

Countermeasure and Response Administration (CRA) is a free web-based application deployed centrally at CDC that uses CDC's secure data access method. CRA gives public health officials key information about the availability and dispensing of pharmaceutical and medical equipment. CRA can be customized to adapt fields for countermeasures administered and dispensed. CRA can be used to generate barcode labels for vaccine information (e.g., lot number, manufacturer) to be scanned during vaccination clinics or 2D barcodes directly from vaccine vials; currently patient demographic information is manually entered.

CRA can manage multiple public health events and countermeasures, reducing the need to develop a new tracking application for every new emergency. CRA has the ability to track vaccine administration and countermeasure dispensing at both the individual and aggregated levels. In addition, CRA makes it easy to report data to CDC and CRA can accept data from the state's IIS.

CRA has the capability to be downloaded on a computer to operate without internet connection. CRA allows for reporting of aggregated and patient-level information. Through analysis of CRA data, officials can gain insight into the scope and demographics of the populations served. CRA is only available to Public Health Emergency Preparedness (PHEP) grantees.

Technology Details

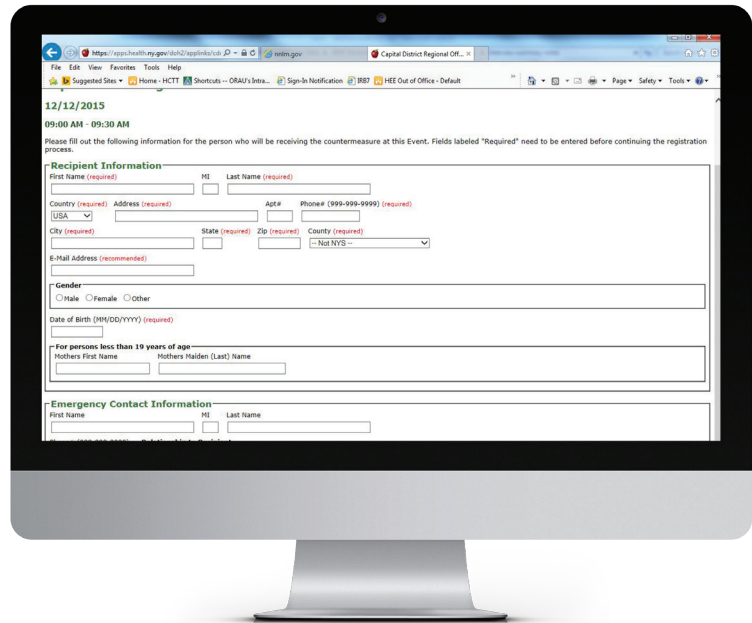
Manufacturer	Centers for Disease Control and Prevention (CDC)	Technical support	Y
		online	CRAHelp@cdc.gov
Technology name	Countermeasure response administration system (CRA)	Cost per device	
		unit	free
Website	www.cdc.gov/cts/cra/documents/cra-fact-sheet.pdf	Imports data electronically to database	Y
Technical requirements		database type	other electronic database
internet connection required	N	Additional Information	
Manufacturer training	Y		Only available to Public Health Emergency Preparedness (PHEP) grantees
online	available		

Type of Information Collected⁺

PATIENT INFO		VACCINE INFO	
First name	Y	Vaccination date	Y
ID Type*	Y	Vaccine injection site	Y
Last Name	Y	Vaccine lot number	Y
		Vaccine manufacturer (MVX code)	Y
		Vaccine provider	Y
		Vaccine type (CVX code)	Y
		VIS date given to patient	Y
		VIS type & publication date	Y

* (e.g., medical record number, IIS ID) ** (occupation, medical history) *** (i.e., owning source)

+Device may have the capability to collect additional information that is not reported here.



Clinical Data Management Systems (CDMS)

Clinical Data Management Systems (CDMS) is a customized secure web-based application that allows patients to register online, choose clinic location and complete medical screening questions. A campaign can be created to pre-populate clinic and target population (e.g., high risk, employees) information, desired patient fields and vaccination information. CDMS also allows for administration to set up intervals for vaccine appointments which allows for management of resources for a clinic based on the number of people registered. Patients print a form which has a barcode on it to take to clinic. During the clinic the workflow is separated and barcodes are used to retrieve/recall information at each station. If the e-mail address field is created, people can receive notification and reminders of their appointment. Primary care provider information can be entered by patient and data will be sent to notify provider of vaccination. CDMS has the capability to transfer vaccination information to immunization registry if people consent to information being reported. CDMS was created by information technology person at New York's State Department of Health and used throughout the state of New York by local health departments.

Technology Details

Manufacturer	New York State Department of Health	Technical support	Y
		phone	New York State Health Department
Technology name	New York Clinical Data Management Systems (CDMS)	Cost per device	
		unit	N/A
Website	N/A	Imports data electronically to database	Y
		database type	IIS
Technical requirements			
internet connection required	Y		
Manufacturer training	Y		
online	New York State Health Department		

Type of Information Collected⁺

PATIENT INFO		VACCINE INFO	
Address	Y	Mother's first name	Y
Birth date	Y	Mother's maiden name	Y
Email	Y	Phone Number	Y
First name	Y	Relationship to patient	Y
Last Name	Y	Sex	Y
Middle name	Y	Vaccination dates	Y
		Vaccine expiration date	Y
		Vaccine injection site	Y
		Vaccine lot number	Y
		Vaccine manufacturer (MVX code)	Y
		Vaccine provider	Y
		Vaccine type (CVX code)	Y
		VIS date given to patient	Y

⁺Device may have the capability to collect additional information that is not reported here.

