



# Adopting 2D Barcodes

## Information for Healthcare Providers

### 2D Barcodes on Vaccine Products

Two-dimensional (2D) barcodes are an important part of the United States' drug and patient safety infrastructure. They can facilitate the accurate tracking of product identifiers (ID) by the Food and Drug Administration (FDA) as well as help healthcare providers to capture accurate and complete data about vaccine inventory and administration.

The data elements of interest on the vials and syringes are the product identifier, such as the National Drug Code (NDC), lot number, and expiration date. In most instances today, these data elements are manually typed or selected from a preset list of data populated from inventory, which can reduce the overall reliability of the data resulting in limitations in how the data can be used. 2D barcodes contain more data elements and occupy less space than linear barcodes. When scanned, they can improve accuracy and completeness of data captured, may contribute to the reduction in time it takes to record vaccine data at inventory and administration and, with a fully integrated electronic system, can provide recommendations and alerts for increased patient safety.

### Industry Investment in 2D Barcoding

For the last several years, stakeholders across government, provider practice, and technology have worked together to promote the use of 2D barcode scanning. In 2011, the FDA issued guidance that opened the door for placing 2D barcodes on vaccine products, allowing manufacturers to replace linear barcodes with alternative symbology that captures product identifier, expiration date, and lot number. In 2013, the Drug Supply Chain Security Act (DSCSA) was introduced, which requires all manufacturers to affix 2D barcodes on vaccine exterior packaging in the next couple of years; this may result in an electronic system that has 2D barcoding functionality integrated within an inventory module, enabling providers to scan vaccine packaging for inventory management.



#### FDA

Issue regulations to improve track and trace at the individual package level by requiring the 2D barcode on the unit of sale

#### Vaccine Manufacturers



Include product identifier, lot number, and expiration dates on their vaccine products' unit of use



#### Patients

Electronic health records are updated with accurate data that can facilitate the identification of recalled lot numbers



#### Providers

Scan the 2D barcode when entering vaccines into inventory and when administering them to patients



## Benefits of Scanning Products with 2D Barcodes

The majority of US vaccines are currently produced with 2D barcodes on the vials and syringes. This has prompted interest among health information system vendors to increase compatibility with 2D barcodes and scanners in order to help providers more quickly and accurately capture important data about administered vaccines.

Over the last four years, the Centers for Disease Control and Prevention (CDC) conducted two 2D Vaccine Barcode Pilot projects to assess the quality of the data collected through the scan of 2D barcoded vaccines as compared to other data collection methods. The overall findings of the pilot demonstrated that 2D barcode scanning was associated with an improvement in the accuracy and completeness of both lot number and expiration date in vaccine administration records.

Additionally, providers in primary care practices, community health centers, and pharmacies reported positive user experiences with 2D barcode scanning to enter vaccine data into both inventory and administration records. These findings are a clear indication that 2D barcodes are becoming more prevalent, and will soon become an accepted mechanism by which data are entered into electronic systems.

## Adopting 2D Barcoding in Your Practice

Providers as users of EMR systems and buyers of vaccine products have an interest in patient safety, which makes them uniquely positioned to facilitate the adoption of 2D barcoding technology. In addition to increasing the number of 2D barcoded vaccines and requiring 2D barcode software functionality, providers can plan to improve data quality at their practices by taking steps to incorporate 2D barcoding into their workflow and to support the continued adoption of 2D barcode scanning at the point of care. A Summary Report is available for reference and provides further detail on potential improvements in data quality. Below is a list of activities to promote the adoption of 2D barcodes.

- Recognize the importance and utility of EMR systems with 2D barcode scanning functions; this can include capturing all data elements within the 2D barcode, population of additional data elements, and consideration of alerting functions.
- Recognize the value of having 2D barcodes on all vaccine products.
- Develop a 2D barcode scanning protocol for workflow at the site to include:
  - Staff training on the use of 2D barcode scanners
  - Regular testing to ensure that scanners are working properly (e.g., scan 2D barcode into a word document to validate output)
  - Support scanner configuration, troubleshooting, and continuing education as needed
- Encourage scanning of 2D barcodes on vaccines and promote consistency of use among staff



### Interested in learning more?

To find out more about how adopting 2D barcode functionality can benefit your organization, please scan the barcode above or visit the CDC's Two-Dimensional Vaccine Barcoding website at:

<http://www.cdc.gov/vaccines/programs/iis/2d-vaccine-barcodes/>