



Bridging the Gap between Pharmacy Cross Reference files and & Bedside Barcode Scanning

Bridging the Gap between Drug Dictionaries & Bedside Barcode Scanning

A source of frustration for the nursing staff is when the bedside scanning system cannot identify the medication from the data in the medication's barcode. Inaccurate error messages lead to "work-arounds" which put patients at risk. The issue is that not all medication barcodes are created equal. They may contain more information than just the FDA's 10-digit NDC number, such as lot numbers, expiration dates and other manufacture data. This information can change regularly.

In order for accurate bedside scanning to take place, drug dictionaries must be built and properly maintained to correctly identify medications in the bedside scanning system. *NDC Translator is the bridge between the barcode scanner and the bedside scanning system.* It will save you hundreds of hours setting up and maintaining your hospital's drug dictionary.

For a medication to be correctly identified during the bedside scanning process, the "ever-changing data" in the barcode must always be entered into the bedside scanning system. When scanning a drug manufacturer's barcode, NDC Translator evaluates the data for the presence of an NDC number. If it finds one, the scanner outputs the 11-digit NDC number which is a standard component of a bedside scanning system's drug dictionary.

History behind NDC numbers

The National Drug Code (**NDC Number**), is a unique 10-digit identification number, assigned by the Food and Drug Administration (FDA), to all prescription medications. This number is the *only* mandated component of the medication's linear barcode.

NDC numbers are comprised of three parts;

- 4 or 5 digit manufacturer identification number
- 3 or 4 digit product ID made by the manufacturer
- 1 or 2 digit product container size code

For example NDC number: **63653-1171-1**

63653 = BMS & Sanofi manufacturer ID

1171 = Plavix 75mg product ID

1 = container size code

Because of the variations that can exist in each part of the NDC number, three possible 10 digit number sequences are produced.

1234 -1234 -12

12345 -123 -12

12345 -1234 -1

Note: The dashes are only space holders used to aid in visualization of the three parts. They are not actually in the bar code data

The variations in formatting came about because the FDA ran out of four digit manufacturers ID numbers. To maintain the original 10 digit length, the FDA lets the manufacturer choose to shorten the product ID or container size code by one character. The health care industry has standardized to the 5-4-2 format by adding a zero into the part of the 10 digit NDC that does not match a full 5-4-2 sequence. To demonstrate this point, below is what the new sequences look like:

1234 -1234 -12 ⇒ **0**1234 -1234 -12

12345 -123 -12 ⇒ 12345 - **0**123 -12

12345 -1234 -1 ⇒ 12345 -1234 - **0**1

Transformations of Pharmaceutical Manufactures Barcode Symbologies:

Original NDC bar code symbology: *UPC-A symbology*



Scanner output **without** NDC Translator: 359911325413
Scanner output **with** NDC Translator: 59911325401

Later adding lot number and expiration dates to the *EAN/UCC-128 symbology*



Scanner output **without** NDC Translator: 011035991132541317050101301210ZXY987
Scanner output **with** NDC Translator: 59911325401

To decrease the size of the barcode the symbology is changed to *GS1-128 Composite*



Scanner output **without** NDC Translator: 011035991132541317050101301210ZXY987
Scanner output **with** NDC Translator: 59911325401

☆ NDC Translator can output the **10 digit NDC number**: 5991132541 *or* the **11 digit NDC number**: 59911325401

Hospitals across the country are working toward having an eMAR and bedside scanning system. *NDC Translator is the bridge between the barcode scanner and the bedside scanning system.* It will save you hundreds of hours setting up and maintaining your hospital's drug dictionary.

For over 15 years RxScan has been providing healthcare facilities with solutions to assist in the preparation, administration and dispensing of medications. Our products are used across the entire country including Puerto Rico. Over the past several years, we conservatively estimate that several billion medications have been scanned using our solutions.

If you have questions or for more information contact us:

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