

# i-STAT<sup>®</sup> TECHNICAL BULLETIN

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## Using i-STAT<sup>®</sup> Analyzer Customization Features to Minimize ID Entry Errors

### INTRODUCTION

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This Technical Bulletin describes seven i-STAT Analyzer Customization features that can help minimize Patient and Operator ID entry errors.

#### **ID Entry on the i-STAT System and Sources of Error**

The i-STAT System offers the following options for entering Patient and Operator IDs:

- Manual ID entry using the analyzer keypad, and
- Barcode scanning using the laser barcode scanner.

As with any user-operated system, ID entry errors can occur using either of the above options. These generally occur in two ways:

1. Incorrectly entering an ID.
  - Mistyping an ID
  - Incorrectly reading an ID from a patient's wrist band
  - Entering no ID at all
2. Entering an ID that represents the wrong person (Patient or Operator).
  - Scanning the wrong barcode
  - Mistyping an ID that happens to be valid for another patient or operator

#### **i-STAT Analyzer Customization Features Used to Minimize ID Entry Errors**

The table below lists seven helpful Customization features and related information to support minimizing ID entry errors.

Customization Feature	Technical Bulletin Section	i-STAT 1 Analyzer	i-STAT Portable Clinical Analyzer (PCA)
Barcode Scanning	Section 1	X	
Use Operator List	Section 2	X	
Excluding Operator IDs from Analyzer Printout	Section 3	X	X
Set Max/Min ID Length	Section 4	X	X
Set Manual Entry Check Digits	Section 5	X	
Force Manual Repeat ID Entry	Section 6	X	X
Force Scanned Repeat ID Entry	Section 7	X	

## 1. Barcode Scanning

**How does this feature work?** Instead of users entering Operator and Patient IDs manually using the analyzer keypad, the i-STAT 1 Analyzer also accepts scanned Operator and Patient ID information from 6 valid barcode formats.

### What benefits does using barcode scanning provide?

- Using barcodes is the single most effective method of eliminating ID entry errors in the i-STAT System.
- It eliminates manual entry related errors (i.e. transposed numbers, repeated numbers, etc...).
- It provides faster ID entry.
- Customizing an analyzer to only accept a specific barcode type helps prevent users from scanning the wrong barcode type for Patient and/or Operator ID entry.

## 2. Use an Operator List

**How does this feature work?** Using an Operator List allows the Point of Care Coordinator (POCC) to maintain a list of up to 4000 operators. Each operator in the list can be certified for i-STAT and/or PCx Glucose Strip testing for a set time period defined by the POCC. Once the operator list is created, it is then uploaded to each analyzer.

### What benefits does using an Operator List provide?

- It prevents uncertified or untrained operators from running tests. If the Operator List does NOT contain the ID entered by the user or if the operator is not certified, the user can be warned or locked-out from running a test.

## 3. Exclude Operator IDs From Analyzer Printout

**How does this feature work?** Enabling this feature will exclude the operator ID from all Analyzer printouts.

**What benefits does this feature provide?** Disabling the printing of operator IDs can help prevent uncertified operators from learning the IDs of certified operators and using those ID numbers for Analyzer testing.

## 4. Set Max/Min ID Length

**How does this feature work?** The i-STAT System provides the ability for the POCC to set minimum and maximum ID lengths. The Default Choice settings for the Operator and Patient ID lengths for each i-STAT Analyzer type are described below:

Analyzer Default Choices for ID Length		
Analyzer Type	Operator ID	Patient ID
i-STAT 1 Analyzer	0-15	0-15
i-STAT PCA	0-7	0-12

Once the POCC defines the minimum and maximum limits through customization, the analyzer will then only accept ID numbers that contain the specified number of digits.

**What benefits does using Max/Min ID Length provide?**

- It forces users to enter a specific ID length.
- It does NOT allow blank ID numbers when Minimum Length is set to one (1) or greater.
- It helps prevent the user from making ID entry errors such as missing digits or repeating digits.

**5. Set Manual Entry Check Digits**

**What is a Check Digit?** A Check Digit is a decimal (or alphanumeric) digit added to a number for the purpose of detecting typical data entry errors.

**How does this feature work?** If a facility makes use of a supported Check Digit algorithm when creating Operator or Patient IDs, the i-STAT 1 Analyzer can verify the entered ID format by calculating the check digit and comparing it to the entered ID number. If the Check Digits don't match, the ID is rejected.

**Note:** The i-STAT System supports the **Mod 10** and **Mod 11** check digit algorithms described in the **HL7 Table 0061** (Check Digit Scheme) in the HL7 Specification (Rev 1.4). Please contact your LIS/HIS or IT departments to help determine if your facility uses Check Digits in the creation of operator and/or patient ID numbers, and if so, what algorithm is used.

**What benefits does using Manual Entry Check Digits provide?** It helps prevent users from making the following ID entry errors:

- Interchanging adjacent digits (i.e. 67 becomes 76)
- Doubling the wrong digit (i.e. 445 becomes 455)
- Thinking an 8 is a 0 when reading a number from a wristband
- Omitting or adding a digit

**6. Force Manual Repeat ID Entry**

**How does this feature work?** This feature forces a user to manually enter an ID number twice. If the two entries are not identical, the ID will not be accepted and the user must start again.

**What benefits does Repeat Manual ID Entry provide?** The number of IDs to be corrected/edited by the POCC in the Data Management system should theoretically decrease, as a user is less likely to type an ID number wrong twice consecutively.

**7. Force Scanned Repeat ID Entry**

**How does this feature work?** This feature forces an i-STAT 1 analyzer user to scan an ID barcode number twice. If the two entries are not identical, the ID will not be accepted and the user must start again.

**What benefits does Repeat Scanned ID Entry provide?** The number of IDs to be corrected/edited by the POCC in the Data Management system should theoretically decrease, as a user is less likely to scan an ID number wrong twice consecutively.

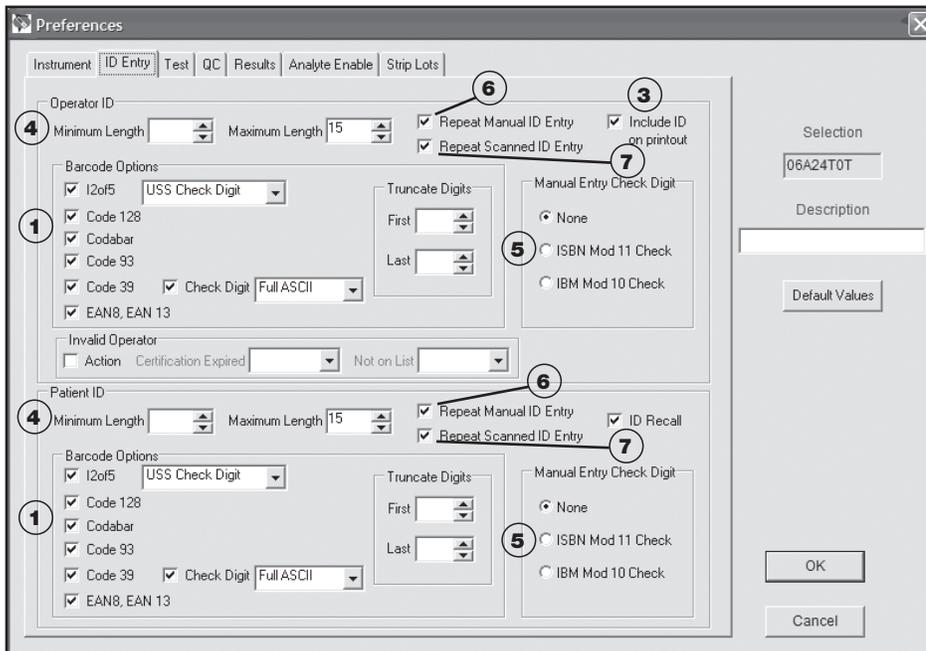
## NOTES:

1. Except for Operator List, all ID Entry Customization features described in this Bulletin are available on the i-STAT 1 Analyzer using:
  - Analyzer Keypad customization,
  - The i-STAT CDS Customization Workspace, or
  - Through i-STAT/DE.

The Operator List feature is only available through the i-STAT CDS Customization Workspace or through i-STAT/DE.

To customize for ID Entry via the i-STAT 1 analyzer keypad:

- select **4-Customization** from the Administration Menu,
  - select **2-Change**. If the analyzer has already been customized with a password, enter the password. If not, press the Enter key.
  - Select **2-ID Entry**, then make selections from the Customization menu.
  - After all items have been set, turn the analyzer off to save and activate the settings.
2. The individual features available on the i-STAT PCA are only available through:
    - The i-STAT CDS Customization Workspace or
    - Through i-STAT/DE.
  3. Figure 1 illustrates the i-STAT Analyzer ID Entry preferences tab in the i-STAT CDS Customization Workspace. The top half of the screen lists options for entering Operator IDs and the bottom half lists options for entering Patient IDs. Individual options discussed in this Technical Bulletin are marked by numbered circles indicating the section of the Bulletin where a particular feature is described.



**Figure 1**

4. Figure 2 illustrates the i-STAT CDS Customization Workspace main page. The Use Operator List feature, discussed in this Technical Bulletin, is marked by the numbered circle (2) indicating the section of the Bulletin where this feature is described.

Enable Customization

Default customization profile:      Location-based customization profiles:

	Location	Enable Updates	Use Default Profile	Update CLEW	i-STAT Analyzer CLEW	Philips BAM CLEW	Preferences	Chart Pages
Language: English	A_10.10.90.17	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	A13	H13	DEFAULT0	CHART0
Unit Set: UNITSET00	A_10.10.90.24	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	A13	H13	DEFAULT0	CHART0
I-STAT Analyzer CLEW: A13	A_10.10.90.26	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	A13	H13	DEFAULT0	CHART0
Philips BAM CLEW: H13	A_10.10.90.31	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	A13	H13	DEFAULT0	CHART0
I-STAT 1 Software: JAMS122B.BIN	A_10.10.90.33	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	A13	H13	DEFAULT0	CHART0
Preferences: DEFAULT0								
Chart Pages: CHART0								

Use Operator List

**Figure 2**

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