DATA VALIDATION RESOURCES

**RCHC Data Group Webinar**

By Ben Fouts MPH

November 14, 2017

Agenda

1. Documents on new RCHC Peer Collaboration web page

2. Data Validation Resources (Introduction to the new version of "Instructions for Using BridgeIT Reports to Regularly Validate and Clean eCW Data")

3. General Discussion of Data Validation Theory and Practice

DOCUMENTS ON THE NEW RCHC PEER COLLABORATION WEBPAGE

Replaces the old IHIT Portal

www.rchc.net

Bookmark the Direct Link:
https://www.rchc.net/peer-collaboration/#Data

Locked Content

Additional Resources and Companion Documents

If you need a password for the locked content please contact us.

- Comparison of Annual Reports Measures – v14 – July 2017
- **Data Quality Assurance**
  - Benchmarking Basics – April 2017
  - Clinical Benchmark Examples – August 2017
  - Training – Clinical Benchmarking (video)
  - Validating Reporting Instructions – v4

Contact Colleen for the password

Categories Under Additional Resources and Companion Documents

- Data Quality Assurance

- UDS Federal Reporting (2016)

- UDS Federal Reporting (2017)

- OSHPD State Reporting (2016)

- BridgeIT Training

- QIP Reporting (Quality Improvement Program)

- PIP Reporting

- PHASE Program Reporting

Main RCHC BridgeIT Documents

- **BridgeIT Training**

  - BridgeIT Report Index – July 2017 ⇐

    🔒 BridgeIT Report Updates-July 2017 (Depression Screening and Follow-up, Cervical Cancer
  - Screening, Blood Pressure Calculation and more) (video)

  - 🔒 Report Update – OSHPD – Cirrhosis – QIP 2018 (video)

  - Report Update – OSHPD – Cirrhosis – QIP 2018 (slides)

  - Report Instructions – BridgeIT Annual Clinical Reports – v13 ⇐

  - System Setup – BridgeIT Annual Clinical Reports – v6 ⇐

  - Technical BridgeIT Clinical Annual Reports –v13 ⇐

RCHC DATA VALIDATION RESOURCES

New Instructions for Using BridgeIt Reports
to Regularly Validate and Clean eCW Data

Data Peer Workgroup Document Section

- **Data Quality Assurance**
  - Benchmarking Basics – April 2017
  - Clinical Benchmark Examples – August 2017
  - 🔒 Training – Clinical Benchmarking (video)
  - Validating Reporting Instructions – v4 ⬅ **Version 5 this week!**
  - 🔒 RCHC Data Workgroup – Validation (not specific to a tool) – March 2016
  - 🔒 RCHC Data Validation and Cleaning (BridgeIT Reports) – April 2016
  - Using BridgeIT Reports for Validation and Cleaning – April 2016 (slides)
  - 🔒 Quality Assurance of EHR Data – March 2016 (slides)

Some validation documents and slideshows also exist for specific reports (like for UDS and PIP)

New Version of Main Validation Document

- Will be placed in the Data Quality Assurance section of the Data Peer Workgroup Document Section this week
- This version will replace version 4.
- This slideshow and webinar recording will also be placed on the website

Instructions for Using BridgeIt Reports to Regularly Validate and Clean eCW Data (Version 5)

REDWOOD COMMUNITY
HEALTH COALITION

Serving Sonoma, Napa, Marin & Yolo Counties

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The Validation Document is Integrated with Other Documents

- More detailed instructions for the validation reports appear in the larger Instructions manual

- Detail on appropriate system set-up appears in the System Setup Document

- The large Technical Document contains all of the detail on how the RCHC clinical reports were designed

- The instruction documents for the UDS and QIP BridgeIT reports have paragraphs on validation

Validation Instruction Sections

- The Data Validation Cycle

- System Set-Up Reports

- Record-Level Reports for Rarer Events

- Record-Level Reports for More Common Events

- Appendix: Mapping in the BridgeIT UDS Mapping Database

Section: The Data Validation Cycle

- We will talk some more about this later in this presentation
- The section in the validation document provides more detail on the context and theory of the cycle

Section: System Set-Up Reports

- These reports display how eCW is configured

- The configuration must match the description in the Setup Document

- For example, lab tests (LOINC codes), medication groups, immunizations (CVX codes), structured data elements, etc.

- Some of these reports were mentioned in the September Data Group webinar ("Early Preparation for the UDS Report: Beginning the Data Validation Process")

Section: Record-Level Reports for Rarer Events

- Once set-up is complete, you can then use the other validation reports for identifying patient records that may have missing or erroneous data

- Reports split according to the recommendation that they be run less frequently (for rarer events) or more frequently (for more common events)

- Rare events: problem list codes, obstetric record completion

Section: Record-Level Reports for More Common Events

- More common events: lab records, image records, demographics, claims

- Choose when to actually run the reports based on the observed error rate (i.e., errors per unit of records, or errors per unit of time) at your health center

- You do not want to wait until the end of the year to run all of the record-level validation reports at the same time (it could be a lot of data!)

Appendix: Mapping in the BridgeIT UDS Mapping Database

- Written instructions on using the Heckman database

- More detail than given in the Heckman instructions

- Will be covered in the UDS training in December 2017
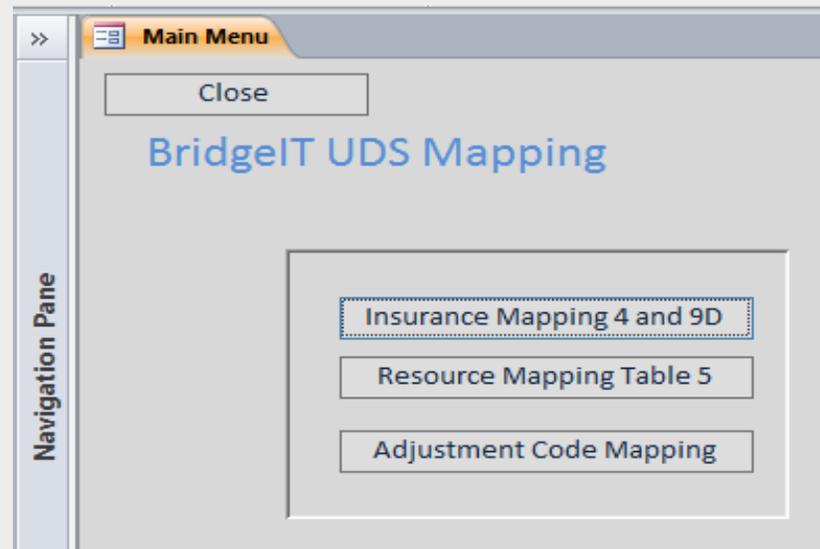
New Validation Report: Identifies Unattached Documents
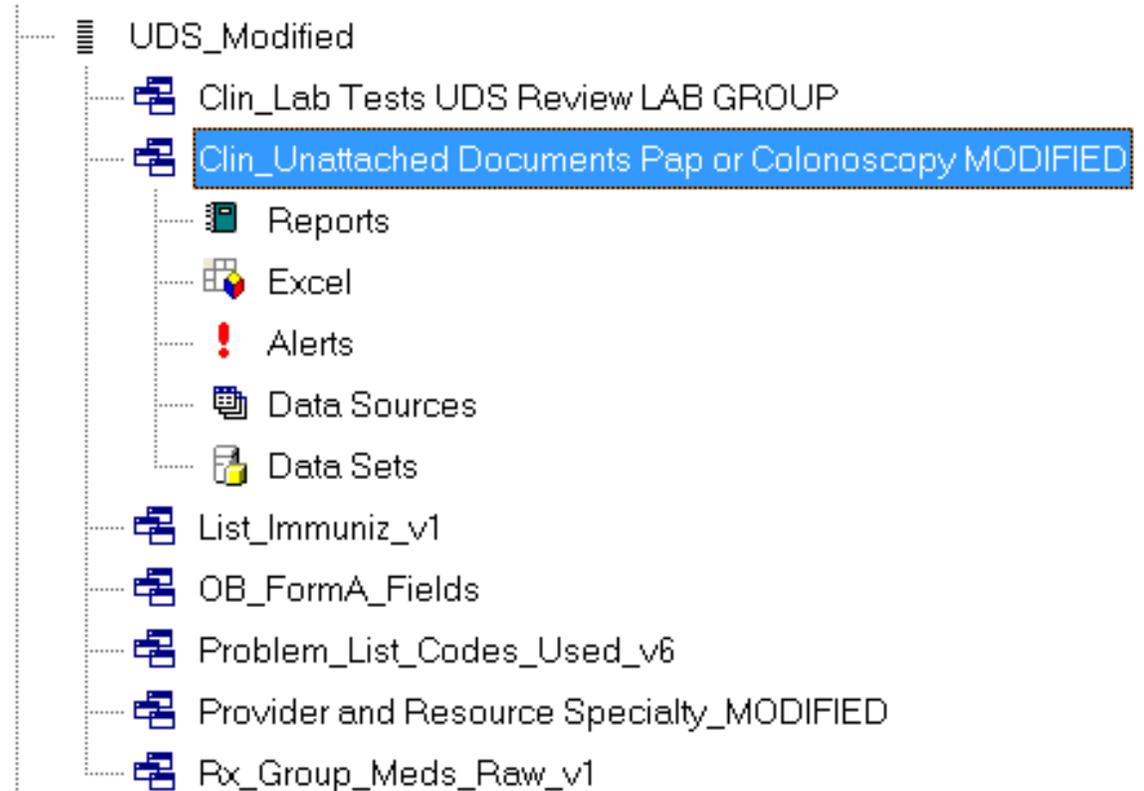
Will be demonstrated during the UDS Clinical webinar in December 2017

New Validation Report:
Displays Setup for Immunizations

Project Note

List all immunizations names, CVX codes and CPT codes

- UDS_Modified
  - Clin_Lab Tests UDS Review LAB GROUP
  - Clin_Unattached Documents Pap or Colonoscopy MODIFIED
  - List_Immuniz_v1
    - Reports
    - Excel
    - Alerts
    - Data Sources
    - Data Sets
  - OB_FormA_Fields
  - Problem_List_Codes_Used_v6
  - Provider and Resource Specialty_MODIFIED
  - Rx_Group_Meds_Raw_v1

Other RCHC Documents:
Feel Free to Modify to Suit you Own Needs

- Note that all the documents also exist in a Word or Excel format (they are normally in PDF on the RCHC Portal). If you need them in a Word or Excel format, just request it from Colleen or Ben

- Example: Santa Rosa added goals and current performance to the Measure Comparison Document*, plus another tab

Note that the comparison document might have a new version before the end of the year

DATA VALIDATION THEORY AND PRACTICE

Resources That Can Help You Understand What Data Validation is All About, Put it Into Use, and Explain it to Others
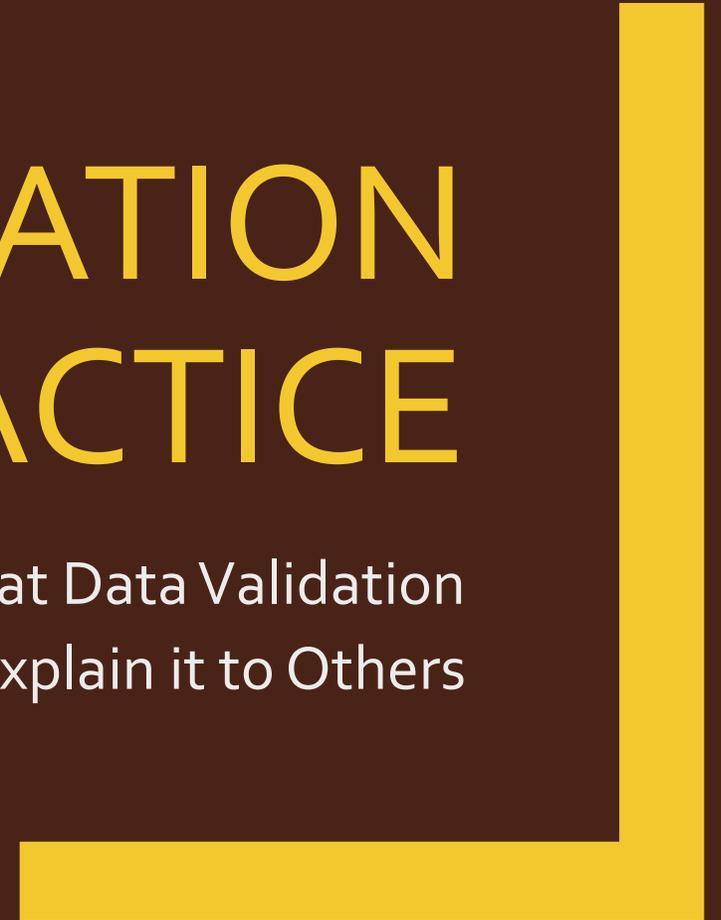
Definition of Data Validation

■ "Confirming a product or service meets the requirements for which it was intended." – The American Society for Quality (https://asq.org/quality-resources/quality-glossary)

■ Used to prepare data for internal consumption (like performance improvement activities, clinical use, executive decision-making, etc.) and external consumption (like reporting to funders and the public, examination by auditors, etc.)

Data Validation Process

- Learn from the data so that a specific process can be targeted that will reduce data errors over the long-term, or make the data entry process more time-efficient

- Some data entry processes will be fine and other will need attention

- As staff come on board, new procedures instituted, or people just forget best practices, you may find that some previously okay processes later need attention

- Therefore, continually monitor data quality

Data Validation: Step #1

- Intrinsic Validation – EHR configuration

- This focuses on the system set-up. Some of the BridgeIT reports display how the system is configured (as opposed to problems with individual records)

- Data Validation Document Section: System Set-up Reports

Data Validation: Step #2

- <u>Internal</u> Validation – record-level validation.

- Data preparation for clinical use, decision-making or reporting. This is the bulk of time used in validation.

- Data Validation Document Sections: Record-Level Reports (Rare and Common Events)

Data Validation: Step #2 (continued)

- There are lots of data validation reports in BridgeIT. You should decide which to prioritize.

- Do you already know of a process where there are problems with data entry or quality?

- Does the summarized data seem low compared to benchmarks from other health centers or from your own past performance?

- Is there already a focus on a particular measure, like hypertension blood pressure control or cervical cancer screening? If so, integrate appropriate data entry methods and feedback into the performance improvement process

Monitoring Data Quality by Focusing on Systems

- The SYSTEM. You must understand the data sources, clinical and operational processes, data entry workflow during the process, and how the BridgeIT reports are designed to organize, manipulate and display the data

- The RULES. If data entry is done according to rational rules, and staff are trained on those rules, then you can use validation reports to identify records that do not conform to those rules.

The System and the Rules

- What goes into eCW according to rules comes out with BridgeIT according to rules, and those rules are aligned

- Clinical, operations and financial workflow should match informatics workflow

- Communicate data capture rules and data reporting rules to staff. A good idea is to create a Data Dictionary.

- The rules should be specific because data entry must be completed in specific fields at expected times. The data must have particular qualities (i.e., contain numbers, key words, come from a pick list, etc.) depending on the field.

The Final Destination: Accurate Data

- Accurate, that is… correct, reliable, trustworthy, truthful, complete, expected, and relevant

- This is usually the highest priority, or at least the initial priority, among the ultimate end-users of the data, like providers or executive staff

- It also takes considerable understanding and work to achieve!

Note on BridgeIT vs. Relevant

- Some health centers are transitioning to Relevant in 2018 and beyond

- It is important to continue to ensure that your eCW is configured in a standard manner and that the BridgeIT reports are displaying the same data as you see in eCW

- The BridgeIT reports should be the 'standard of truth' and used as a yard stick to test the validity of the Relevant reports when they are available for your health center

- In other words, the BridgeIT reports should be run side-by-side with the Relevant reports and both should show the same numerator and denominator

HITEQ Website : Validating Data Accuracy

- http://hiteqcenter.org. Hover over Resources to get drop down menus

Example of Data Validation and Data Organization Documents from HITEQ

- Checklist For Analyzing Performance Measure Data (HITEQ_HIT_QI_Guide_Checklist_for_Analyzing_Performance_Measure_Data)

- Example of a Data Validation Tool (HITEQ_Data_Validation_Tool_Build_AdultWeight_BLANK_v3_2017)

- Report Inventory Tool (HITEQ_ReportInventoryTool_2017)

- Measure Dashboard Example (HITEQ_Data_Dashboard_CY2016_UDSClinical+Measures_June2017 Update_V3)

Visualizing Internal Validation Data: The Pareto Chart

"The purpose of the Pareto chart is to highlight the most important among a (typically large) set of factors. In quality control, it often represents the most common sources of defects, the highest occurring type of defect, or the most frequent reasons for customer complaints, and so on." (SOURCE: Wikipedia)

Colonoscopy and Sigmoidoscopy Documents That are Not Properly Attached and Entered Into Structured Image Data
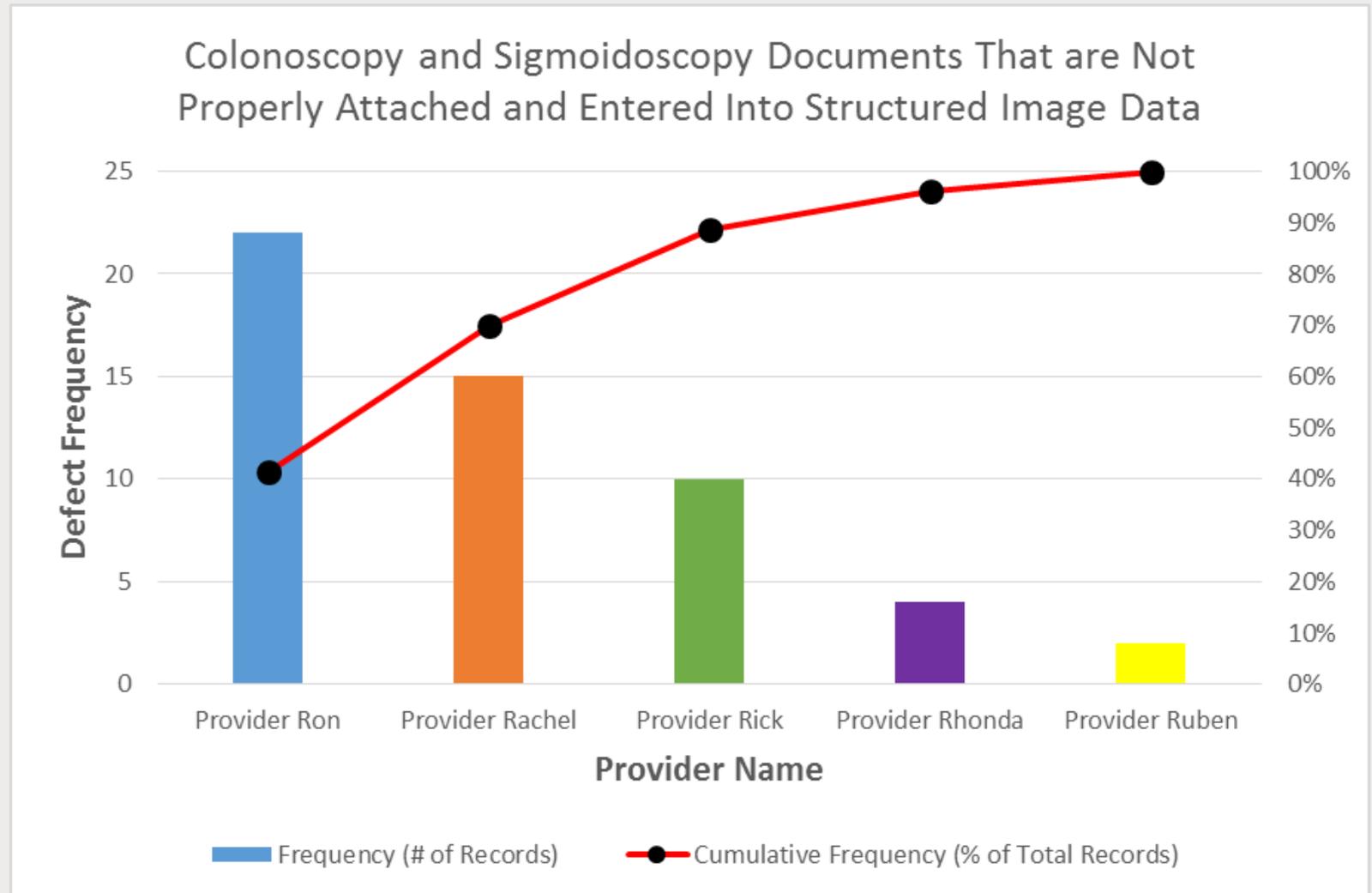
Visualizing Internal Validation Data: Health Centers Can Create Their Own

- Example from Santa Rosa Community Health
- Run charts for hypertension

RCHC Reporting Resources (All Revised in 2017)

System Set-Up For the BridgeIt Annual Clinical Report Set (Version 6)

Instructions for Using BridgeIt Reports to Regularly Validate and Clean eCW Data (Version 5)

Technical Documentation For the BridgeIt Annual Clinical Report Set (Version 13)

Instructions for Using the BridgeIt Annual Clinical Report Set (Version 13)

Specific Manuals

Validating and Reporting the 2017 UDS Clinical Measures (Version 1)

- **UDS**
- **QIP**
- **PIP**
- **PHASE**
- **ACO**

Accurate Data Flow (Ideal)

eCW

Correct Configuration

Correct Data-Entry

Correct Report Execution
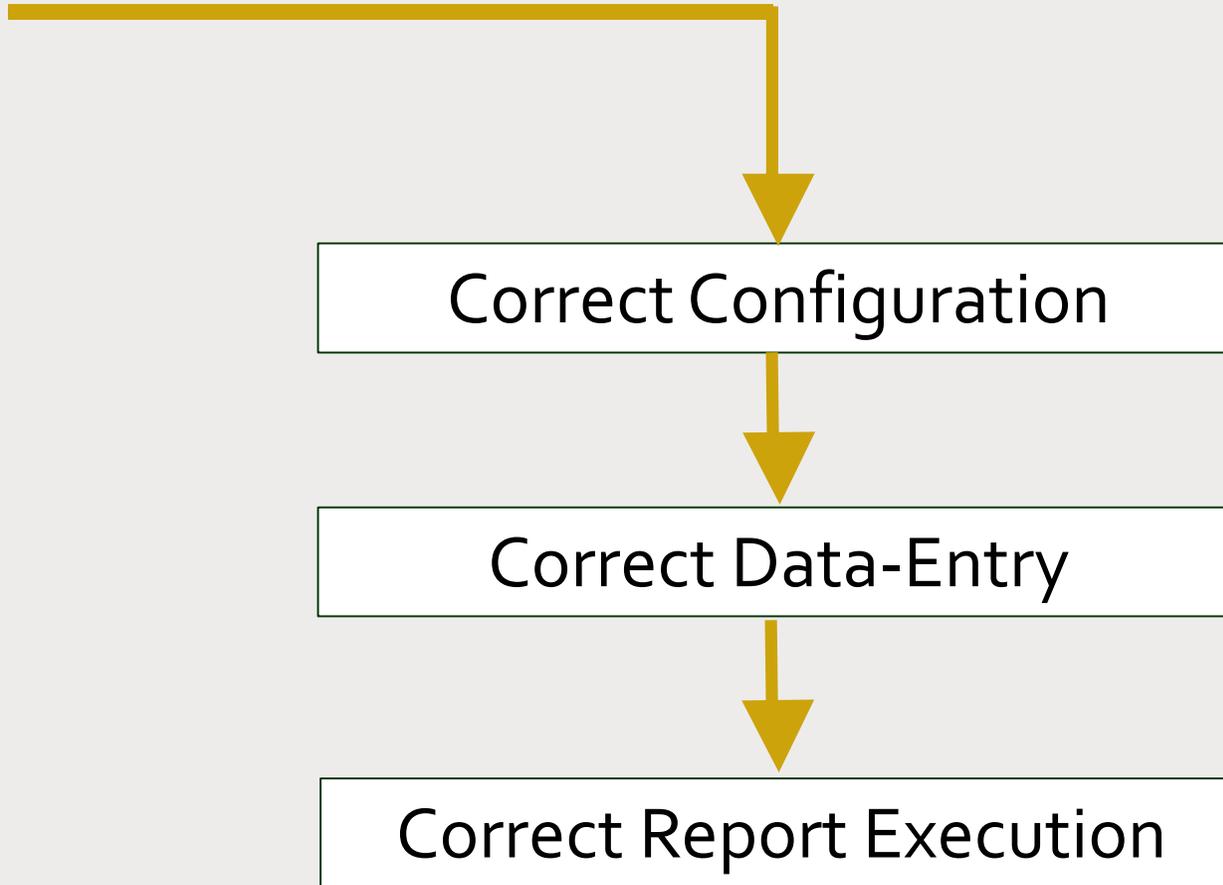
Complete and accurate reporting

RCHC BridgeIT Report Documentation

eCW

Technical Documentation For the BridgeIt Annual Clinical Report Set

System Set-Up For the BridgeIT Annual Clinical Report Set

Correct Configuration

Instructions for Using BridgeIT Reports to Regularly Validate and Clean eCW Data

Correct Data-Entry

Instructions for Using the BridgeIT Annual Clinical Report Set

Correct Report Execution

Complete and accurate reporting

How Errors Can Enter the System

eCW

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Correct Configuration
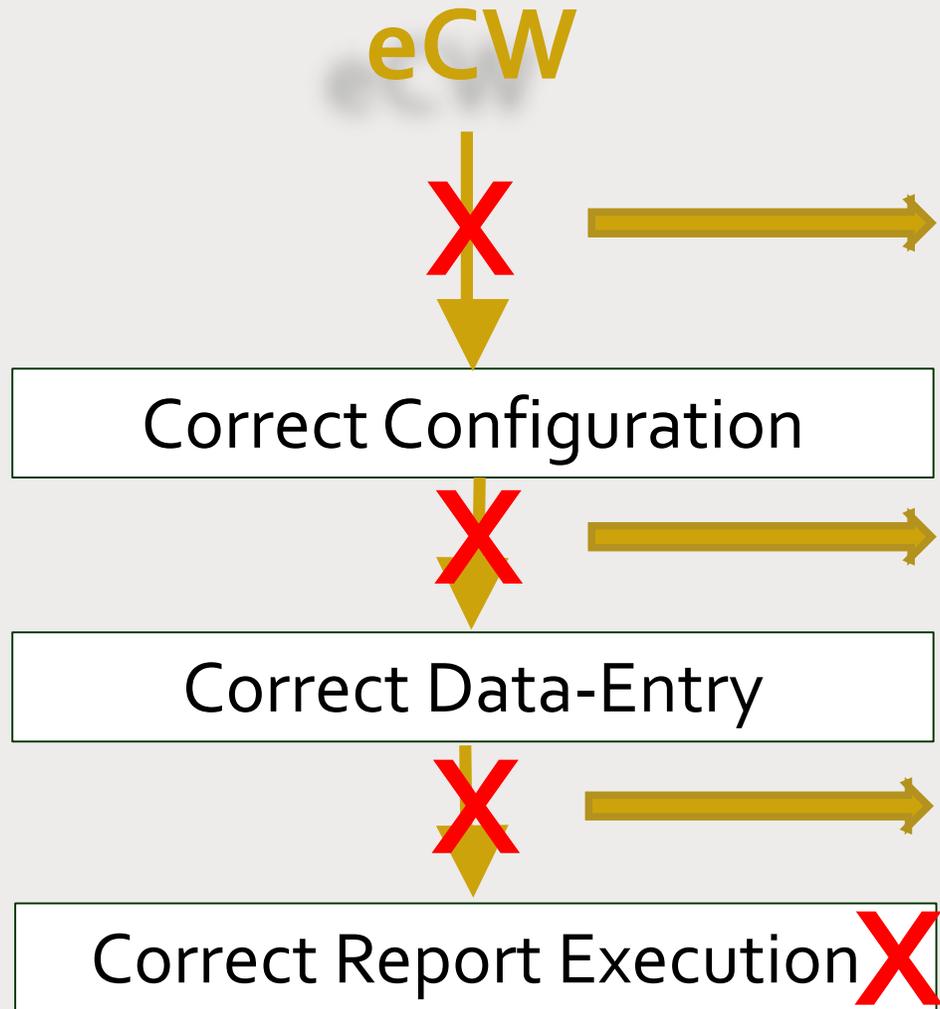
- New providers, medications, labs, immunizations, etc. missing set-up
- New and non-standard structured data elements used instead of standard elements

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Correct Data-Entry

- Staff not entering required data into electronic record
- Staff entering data but not in the standard location
- Staff entering data into standard location but with errors or using non-standard format

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Correct Report Execution ✗

- Wrong version of BridgeIT report used
- Wrong measurement period, filters or output

→ INACCURATE RESULTS

Another Way of Looking at It

4. Data Reporting: *Instructions for Using the BridgeIT Annual Clinical Report Set*
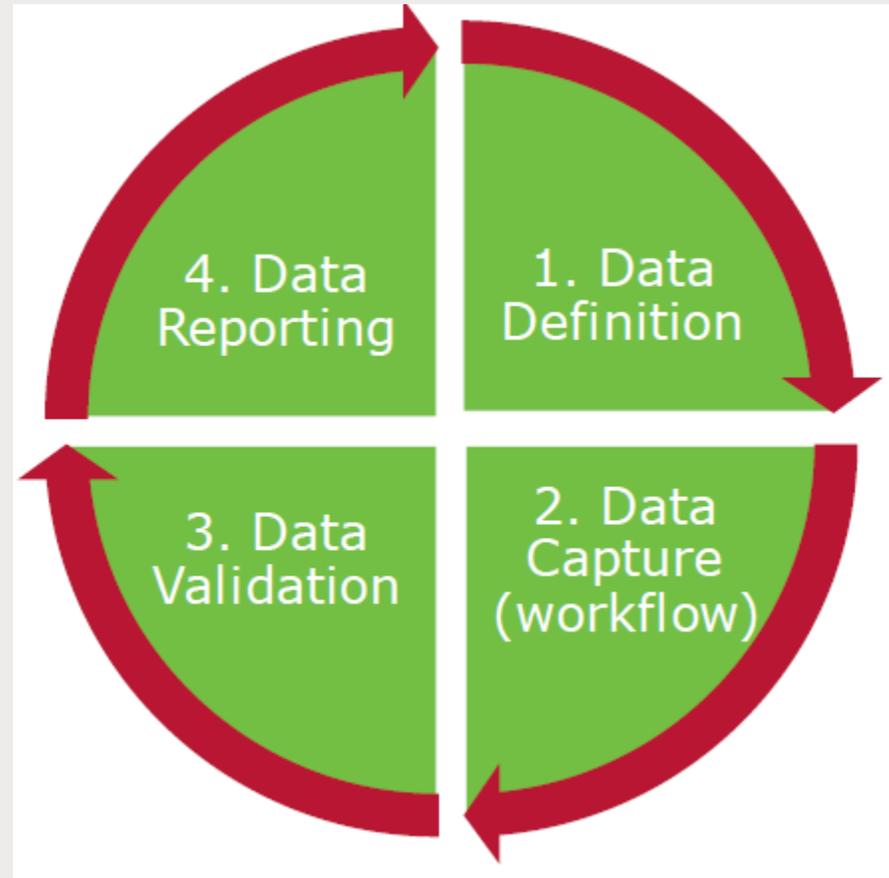
1. Data Definition: *Technical Documentation For the BridgeIt Annual Clinical Report Set*

4. Data Reporting
1. Data Definition
3. Data Validation
2. Data Capture (workflow)

3. Data Validation: *Instructions for Using BridgeIT Reports to Regularly Validate and Clean eCW Data*

2. Data Capture: This is your set of internal workflow procedures

Graphic Source: Presentation called Optimizing Use of Your Electronic Health Record (EHR), HITEQ, May 2017

The Data Validation Cycle
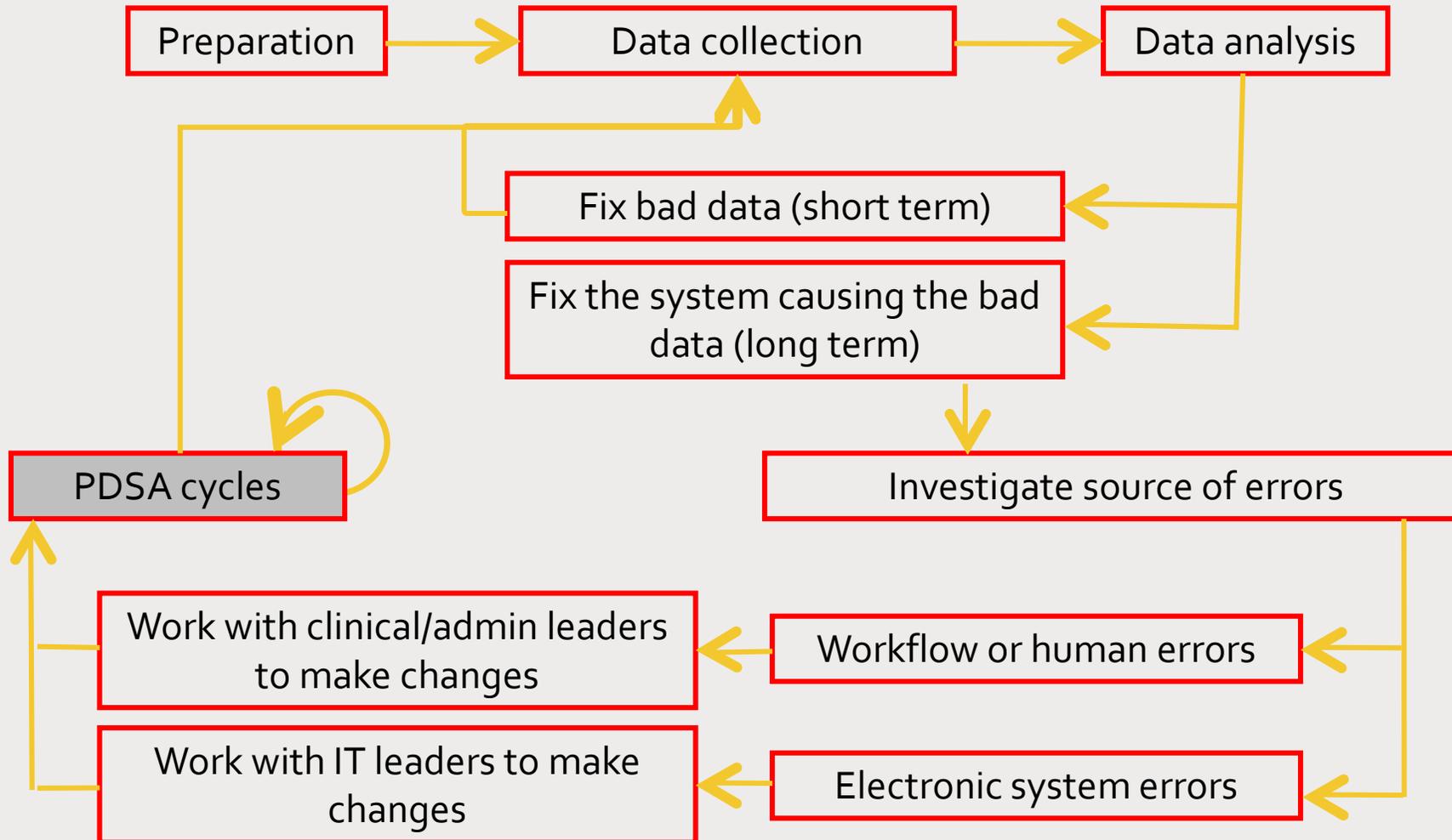
Assume errors are happening

- Your job is to identify the errors, investigate their source, and make corrections to both the data and the data entry system.

- Electronic health records (eCW) and reporting software (BridgeIT and Relevant) make it easier to find errors because you can routinely run the standard validation reports and even design your own when you need to dig deeper into the data.

Short Term vs. Long-Term Strategy

- Short-term strategy: identify and correct errors in specific records

- Long-term strategy: design and implement a data validation routine in order to ensure accurate data for internal and external reporting into the future.

Examples of Interventions to Improve Data Quality

- Developing formal documents outlining data definitions and data quality assurance processes

- Staff training of data entry process and techniques

- Reminders and messaging (in eCW or external to it)

- Monitoring data and providing feedback to data entry staff

- Improve structure of the data by changing setting in eCW (e.g., force some fields to be numerical, add structured data elements, etc.)

- Automate validation reports targeting key data entry processes and putting the data directly into the hands of responsible staff (Relevant)

Data Report Validation

- Slightly different idea of "validation"

- This kind of validation is primarily concerned with ensuring the data that is properly entered into eCW is properly displayed by BridgeIT or Relevant

- Good idea to perform a validation routine whenever a new report is released

- Continually keep an eye on the data. Trust it, but always be willing to verify. Listen to the feedback of other who work with the data

Data Report Validation Procedure
Example using BridgeIT, but approach is similar for Relevant

Run a BridgeIT (or Relevant, etc.) data report. Add the filters to the BridgeIT Data Sheet to get patients seen in the measurement period. Then choose a sample of random patients (for example, 5 or 10 patients depending on the size of the denominator or your health center) in each of the following categories:

1. Met the numerator criteria

2. Did NOT meet the numerator criteria

3. Were labelled as excluded

Data Report Validation Procedure

- Copy records to Excel. Then compare the data displayed in BridgeIT with data in eCW. Most BridgeIT reports contain columns that display intermediate results (e.g., dates, results, structured data elements, etc.).

- For each numerator record, first consider if the patient legitimately belongs in the denominator

- Then look at the numerator inclusion or exclusion criteria (depending on the list)

Data Report Validation Procedure

- If you are find a mismatch between what is in BridgeIT and what is in eCW, you may need to look at additional records from BridgeIT in order to understand a pattern

- Is the data in the right place and format in eCW but not displaying correctly in BridgeIT? Then, contact Colleen or Ben

- Is the data not in the right place or format in eCW? Then correct the record. Also, does the estimated frequency of error surpass your threshold? Then, fix the system.

Questions?