

FIELD COORDINATOR WORKSHOP

Manage Successful
Impact Evaluations

18 - 22 JUNE 2018
WASHINGTON, DC



Data Quality Assurance

Stata Track 2

Prepared by DIME Analytics

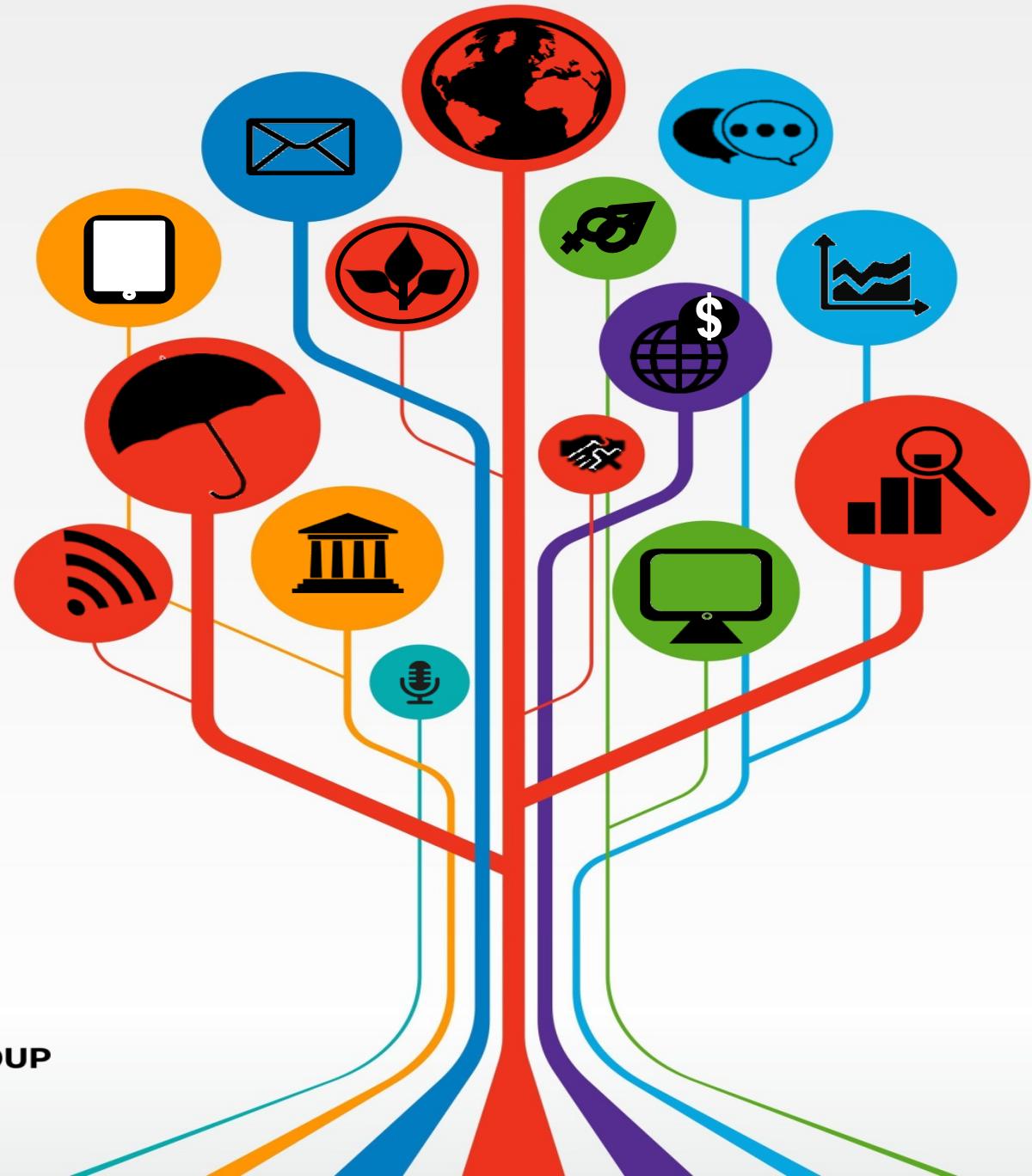
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<http://www.worldbank.org/en/research/dime>

June 20, 2018



Data Quality Control/Assurance (QC/QA)

- What is quality data?
 - Data that is not systematically biased
 - Data that does not misstate representativeness or coverage
- Think of everything that might go wrong
- Setting up a data quality checklist is much better than doing it ad-hoc as results are pouring in
 - They take some time to prepare but are worth it!

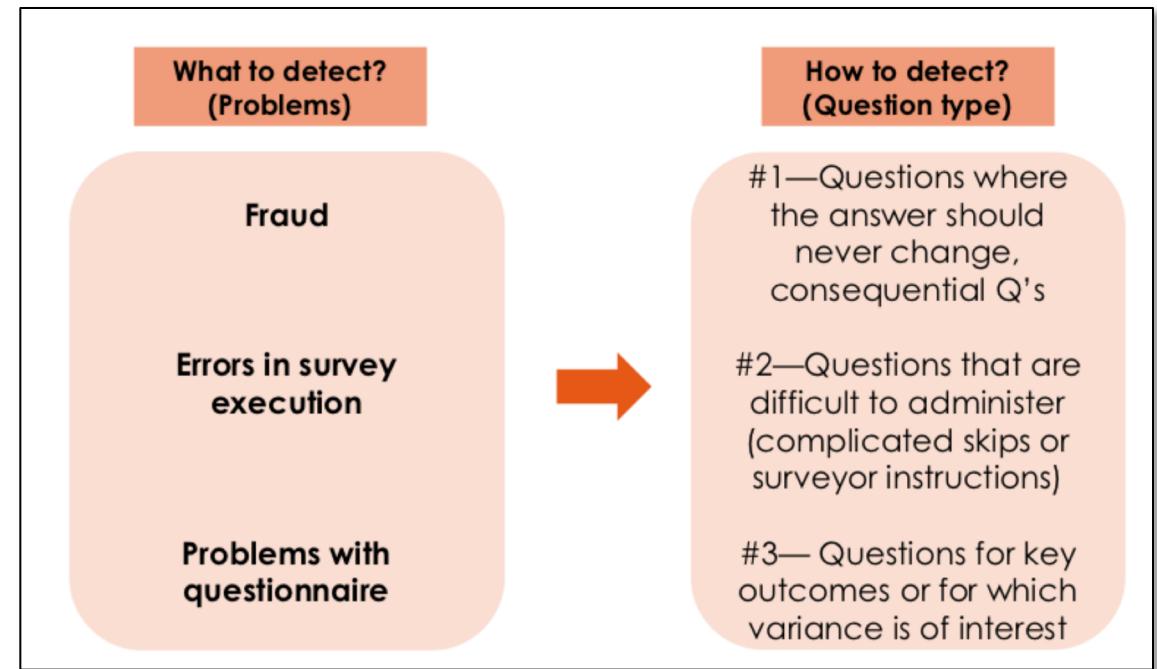
When can data be low-quality?

- **Respondents are human**, so they have imperfect recall and motivation, they can become tired or annoyed.
- **Enumerators are human**, so they can make mistakes, quickly fill answers to unasked questions when they're sure they know the answer, or even just fake interviews.
- **Research assistants are human**, so they often fail to implement quality-control efforts in a timely manner, they shy away from conflict and don't confront underperforming staff, and they often operate with chronic shortages of time and prior experience.

<https://www.surveyclo.com/blog/a-call-to-action/>

Data quality assurance

- Enumerators have really hard jobs!
 - They are often travelling to new places and meeting people who are more or less friendly
 - Weather, pollution, congestion, and other conditions can be challenging
 - Instructions can be unclear
 - Respondents may not match what the listing describes



https://d37djuv3ytnwxt.cloudfront.net/assets/courseware/v1/30701099ebb94072fdfcf1ec96d8227a/asset-v1:MITx+JPAL102x+1T2017+type@asset+block/4.6_High_quality_data_accurate_data.pdf

3 lines of defense against low-quality data

1. Survey design

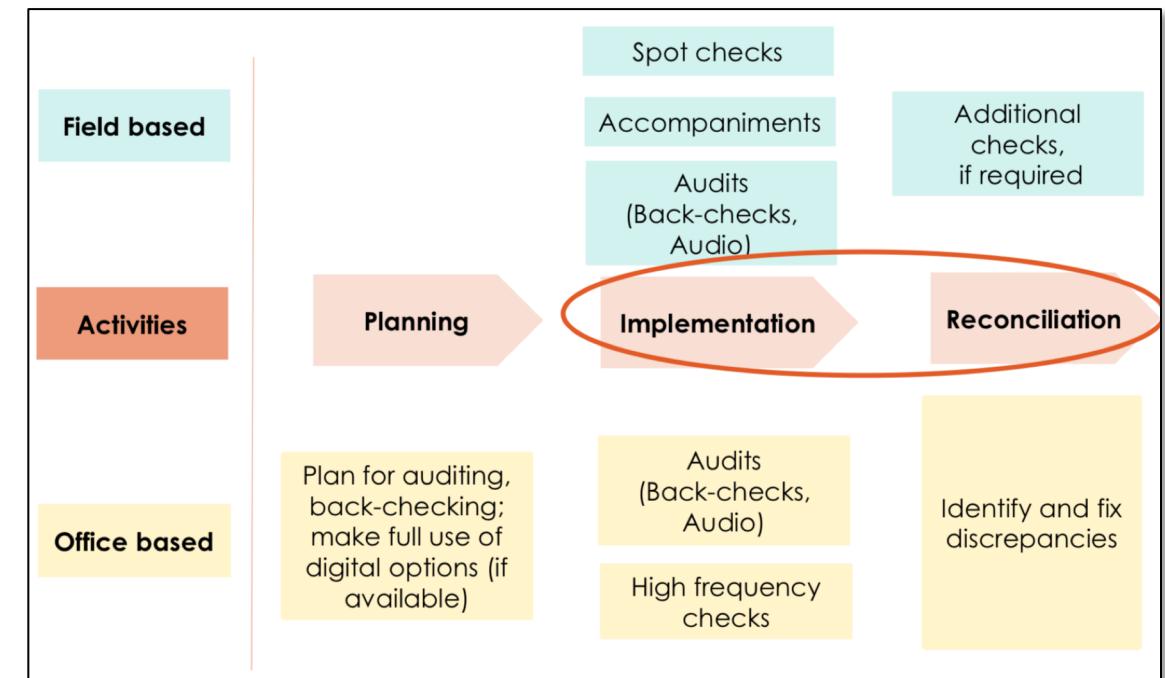
Use constraints and relevance in survey coding
Make sure questions are clear in English and survey language
Pilot survey effectively so team is well-practiced

2. Field management

Enumerators and managers “buy-in” to quality
Check in constantly and make team feel valued
Unless egregious/fraudulent, errors are yours

3. High-frequency checks

Demonstrate that quality
Catch key mistakes early
Visible performance metrics



https://d37djuv3ytnwxt.cloudfront.net/assets/courseware/v1/30701099ebb94072fdfcf1ec96d8227a/asset-v1:MITx+JPAL102x+1T2017+type@asset+block/4.6_High_quality_data_accurate_data.pdf

First line of defense: well-coded surveys

- Relevance fields and constraint fields in survey design can provide instant feedback to enumerators.
- It also reminds them you care about this and have put in a lot of work to make it easy for them to do right!

The image displays three overlapping screenshots of a survey design interface:

- Top Screenshot:** "Add select one field" dialog. It shows a "Relevance" section with a "Save" button and a "Cancel" button. To the left is a "Shortcuts:" sidebar with "Required options", "Labels", "Relevance", "Constraint", and "Other options".
- Middle Screenshot:** "Add relevance - Step 1" dialog. It has a "Save" button and a "Cancel" button. To the left is a "Help" link.
- Bottom Screenshot:** "Add integer field" dialog. It shows "Add constraint - Step 2: Constraint parameters". Fields include "Allow decimals?", "Minimum value: (leave blank for none)" (set to 18), "Maximum value: (leave blank for none)" (set to 120), "Allowable exceptions: (comma-separated list)" (set to -888, -999), and a "Please enter the error message to display when the constraint is violated:" text area (containing "Please enter a valid age for this respondent (18-120)"). It includes "Back", "Save", and "Cancel" buttons. To the left is a "Help" link.

<https://www.surveyclo.com/best-practices/survey-design-for-quality-data-part-1/>

Preloading data when possible reduces error

- Data entry starts with a page containing:
 - Location/site ID [dropdown]
 - Respondent ID [dropdown?]
 - Enumerator ID [dropdown].
- The next page preloads the corresponding names from those IDs based on the Universe and says:
 - “You indicated that this survey was completed in [City Name], at [Clinic Name], with [Provider Name], by [SP Name]. Is that correct?”
(Answer: Yes/No)
- Enumerator checks this against the written names on the assignments, if that exists, and reports back any inconsistency.

The screenshot shows a user interface for creating a new dataset. The title bar reads "Server datasets for pre-loading data into forms". Below the title are buttons for "+ New dataset", "Refresh", and "Help". The main area is titled "Create a new dataset". It contains two input fields: "Dataset title" (with placeholder "The dataset title here...") and "Dataset ID" (with placeholder "The dataset id..."). Below these fields is a note: "Please upload a file with initial dataset contents (.csv file). You can upload it directly from your computer or use Google Drive:". There are two buttons: "Upload from computer" and "Upload from Google Drive". Underneath is a file input field: "Please choose a dataset file to upload (.csv):" with a "Select file..." button. At the bottom right are two buttons: "Cancel" and "Create dataset".

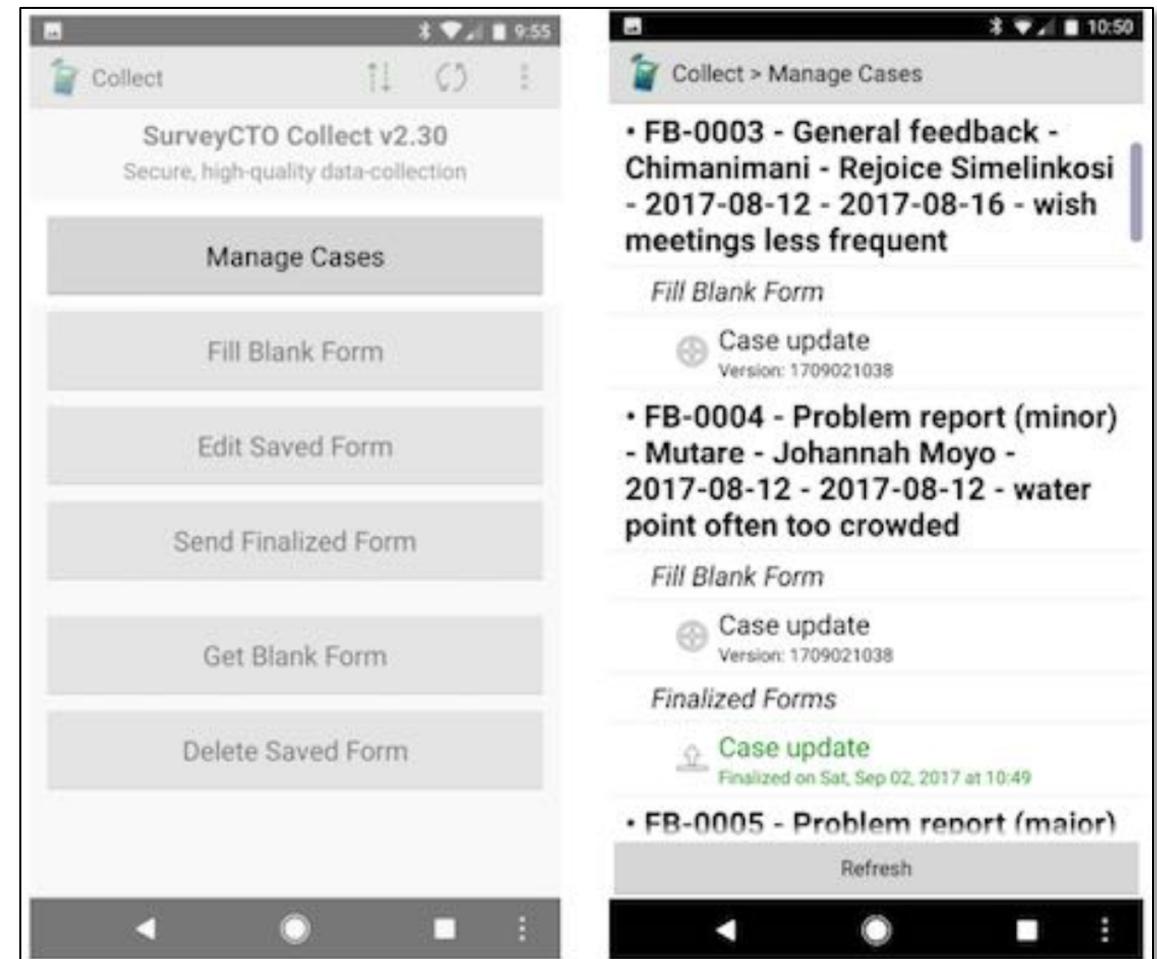
Key tool in survey design: tracking sheets

- Data quality in the field is best supported by “continuous” accountability.
- Tracking should be compared against the prepopulated list, if possible.
- Survey tracking, if used, must be entered every day and are “core tasks”, not “in addition” to the survey work.

QuTUB ID	SP ID	Attempt #	Date	Complete?	If not complete, reason?	Comment
QA4KE0001	SP11	0	27/11/2016	Yes		
QA4KE0001	SP43	0	21/11/2016	Yes		
QA4KE0001	SP73	0	21/11/2016	Yes		
QA4KE0003	SP16	0	08/03/2017	Yes		
QA4KE0003	SP22	0	16/12/2016	Yes		
QA4KE0003	SP73	0	07/01/2017	Yes		
QA4KE0004	SP16	0	01/02/2017	No	Clinic locked	The clinic was locked
QA4KE0004	SP16	1	01/02/2017	No	Clinic locked	The clinic was locked
QA4KE0004	SP16	2	01/02/2017	Yes		
QA4KE0004	SP23	0	18/02/2017	Yes		
QA4KE0004	SP73	0	30/12/2016	Yes		
QA4KE0005	SP14	0	12/02/2017	Yes		
QA4KE0005	SP41	0	09/01/2017	Yes		
QA4KE0005	SP73	0	01/01/2017	Yes		
QA4KE0006	SP16	0	08/03/2017	No	Permanently Closed	Provider not available
QA4KE0006	SP30	0	08/03/2017	No	Permanently Closed	Provider not available
QA4KE0006	SP73	0	07/01/2017	No	Clinic locked	CLINIC WAS LOCKED
QA4KE0006	SP73	1	07/01/2017	Yes		
QA4KE0007	SP11	0	01/01/2017	Yes		
QA4KE0007	SP41	0	18/12/2016	Yes		

SurveyCTO allows “case management”

- Surveys are pre-assigned to individuals (potentially also to enumerators)
- Completion can be monitored in real-time against the preset list
- This works if you know the list of who should be interviewed (but not if you don't)



Reminder: Spot Checks / Accompaniments

- **Done by you:**
 - Spend the first 2 weeks shadowing your enumerators on a daily basis, observing how each of them is administering the survey and giving them useful feedback after (not during) interviews
- **Done by the team leaders:**
 - Team leaders are experienced enumerators who have diverse tasks, the most important of which is observing interviews and supporting their team members in perfecting their interviewing abilities
 - Give team leaders a form to write down their observations about each enumerator and ask them to submit these forms

Reminder: Back-Check Surveys

- **The answers are compared with the original survey**
 - Every team and every surveyor must be back-checked as soon as possible, and regularly
- **Should cover 10% of sample, with 20% being administered in the first 2 weeks of field work.**
 - Random sub-sample.
 - Include missing respondents to verify that your team is not biasing your sample by not tracking hard to find respondents.
 - Observations flagged in other quality tests
 - Surveys of enumerators who are suspected of cheating

Back-Check Variables: use [bcstats]

Type 1

Straightforward questions where we expect very little variation.

e.g. age, education, relation to household head, floor type

Serious enumerator problem

Type 2

Questions where we expect capable enumerators to get the true answer.

e.g. sensitive questions, categorizations, calculations

Enumerators may need more training

Type 3

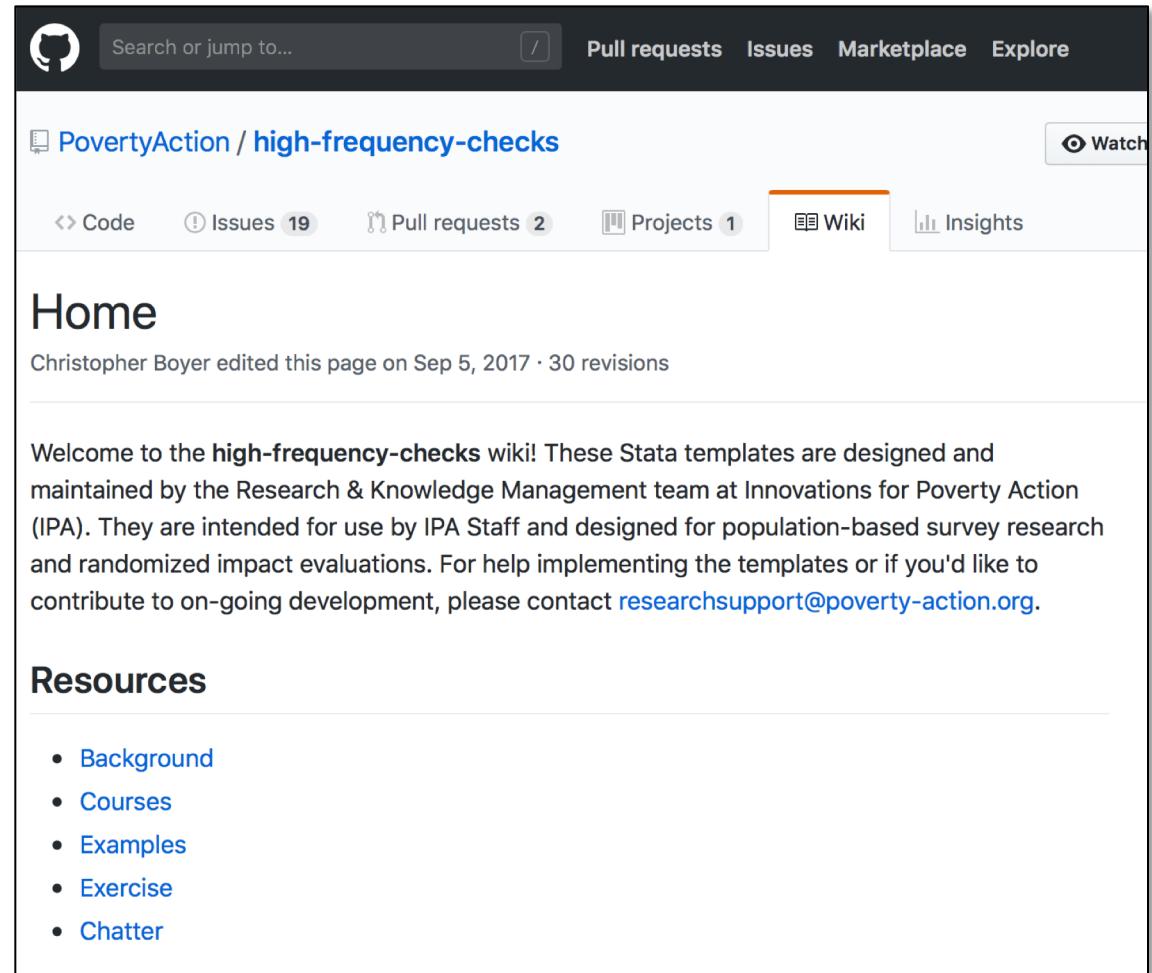
Are we asking the question in the right way? Are respondents changing their answers because they don't know?

*e.g. It depends on your instrument. They are questions **about the survey**, not surveyor, performance*

Survey needs improvement

In the office: High-frequency checks

- Done by you:
 - Prepare code / instructions for HFCs before the survey goes to field
 - Monitor flags reporting and address in the field
- Done by the research assistant:
 - Maintain HFC code
 - Daily data download
 - Daily flags reporting
 - This should be a one-click process



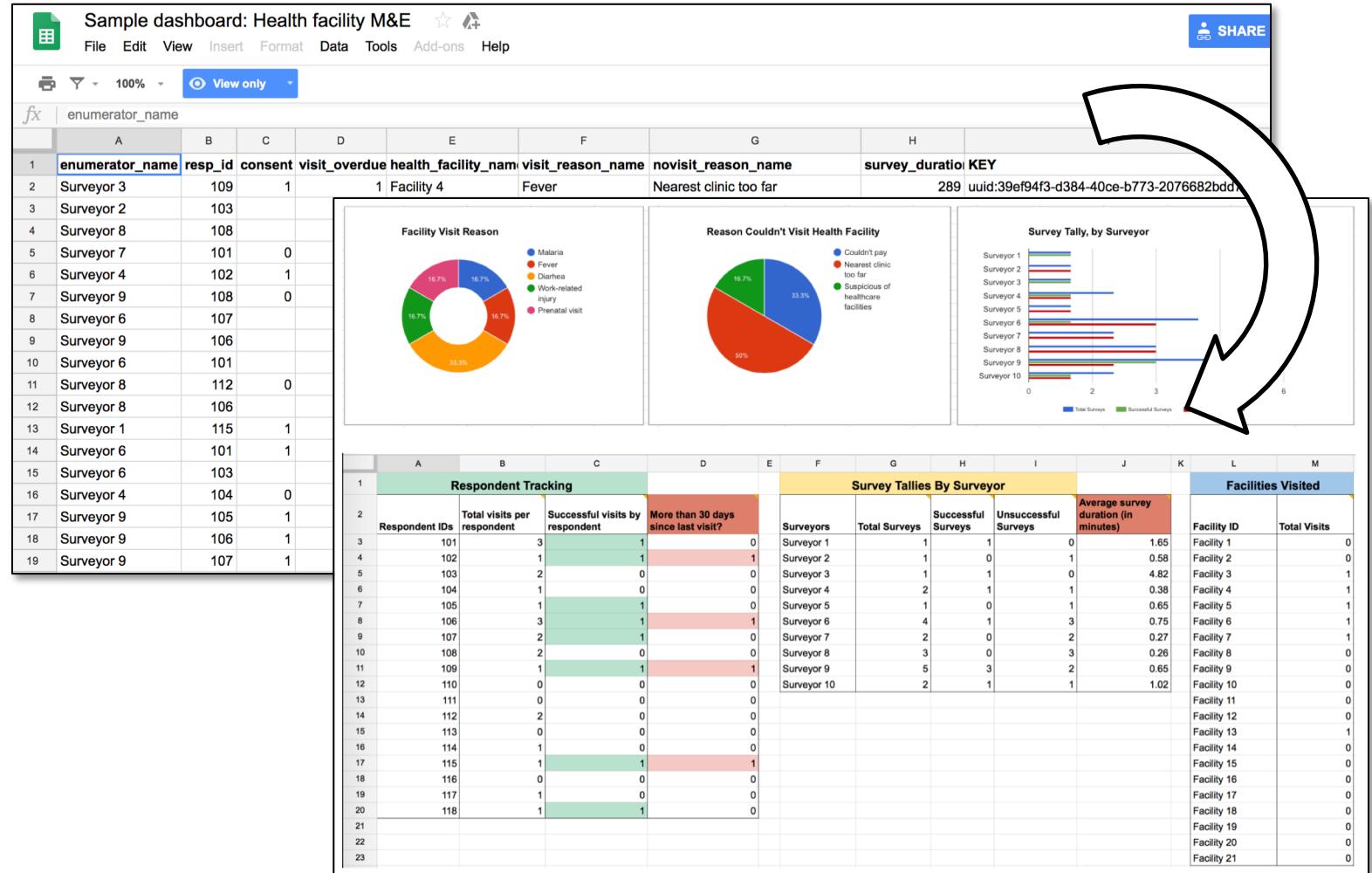
The screenshot shows a GitHub repository page for the project "PovertyAction / high-frequency-checks". The repository has 19 issues, 2 pull requests, 1 project, and a single wiki page. The "Wiki" tab is selected. The main content area is titled "Home" and contains a welcome message from Christopher Boyer, edited on Sep 5, 2017. The message introduces the high-frequency-checks wiki, which is designed for population-based survey research and randomized impact evaluations. It encourages contributions to the templates and contact via email at researchsupport@poverty-action.org. Below the welcome message is a "Resources" section with links to Background, Courses, Examples, Exercise, and Chatter.

SurveyCTO allows tracking dashboards

- Examples:

<https://www.surveycito.com/best-practices/hacking-google-sheets-for-real-time-dashboards/>

<https://www.surveycito.com/case-studies/monitoring-and-visualization/>



SurveyCTO has new workflow tools for QA

- Quality issues can be dealt with as they arise:
 - Enumerator is consistently fast/slow
 - Back-check disagrees with survey
 - Random resurveying

<https://www.surveycito.com/releases/2-41-announcement/>

Enable review and correction workflow for this form?

Submissions to flag and hold for review

Choose which submissions will be held for review. These submissions will require approval before being exported or published to downstream systems.

Some incoming submissions will be flagged for review

SurveyCTO

Correct data anytime by revisiting previously-approved submissions

mission from Wed Apr 04 2018 12:44:09 GMT-0400 (E

Click here to un-approve

uestions to ask if consent has been given

spondent name - What is your name?

In this new review-and-correction workflow feature, you can now improve your quality-control processes by correcting data anytime. Once this workflow is enabled, you can un-approve or un-reject submissions that were previously reviewed, and add them back into the queue for review and correction.

Classify the quality of your data, and review more selectively

This submission has been flagged for review. Please follow the steps below to complete the review process.

1. Classify submission

Good
Okay
Poor
Fake

2. Amend and correct

Comment...
What's wrong?
What's right?
Highlight on a field?

3. Approve or reject

Approve
Reject

Daily downloads of data support routine checks

- **Enumerator checks**
 - Check the percentage of “don’t know” and “refusal” responses by enumerator
 - Check the distribution of responses for key questions by enumerator
 - Check the number of surveys per day by enumerator
 - Check the average interview duration by enumerator
 - Check the duration of consent by enumerator
 - Check the duration of other modules by enumerator (e.g., anthropometrics, games, etc.)
 - **Project checks**
 - Overall survey progress relative to planned sample
 - Summaries of key research variables
 - Two-way summaries of survey variables by demographic/geographic characteristics
 - Attrition rates by type and treatment status
 - Comparisons of variables with known distributions
 - Maps/GIS: all observations where they’re meant to be?
- <https://github.com/PovertyAction/high-frequency-checks/wiki/Background>

SCTO can also automate some of these checks

```
display "Displaying percent DK/RF..."  
foreach var of varlist _all {  
    capture confirm numeric variable `var'  
    if _rc == 0 {  
        scalar miss = .  
        scalar dk = .a  
        scalar rf = .b  
    }  
    else {  
        scalar miss = ""  
        scalar dk = "don't know"  
        scalar rf = "refusal"  
    }  
  
    quietly count if `var' != miss  
    local nonmiss = r(N)  
    quietly count if `var' == dk  
    local dkn = r(N)  
    local dkrate = `dkn' / `nonmiss'  
    quietly count if `var' == rf  
    local rfn = r(N)  
    local rfrate = `rfn' / `nonmiss'  
  
    bysort enumerator: egen totdkrf = total(inlist(`var', dk, rf))  
    quietly count if totdkrf >= 3  
  
    if `dkrate' >= 0.025 | `rfrate' >= 0.025 | r(N) > 0 {  
        describe `var'  
        display "DK: " string(100 * `dkrate', "%5.1f") "%"  
        display "RF: " string(100 * `rfrate', "%5.1f") "%"  
        tabulate enumerator `var' if inlist(`var', dk, rf) == 1, missing  
    }  
  
    drop totdkrf  
}
```

Edit a quality check

Select the type of quality check:

Value is too frequent

Use this to check for a particular value's frequency and warn whenever it is above the threshold you specify.

Select the fields to be checked:

Q1_1
 Q1_2
 Q1_3
 Q1_4

Warn when this field value:

2

Leave blank to check for missing values.

Occurs > this % of the time:

20

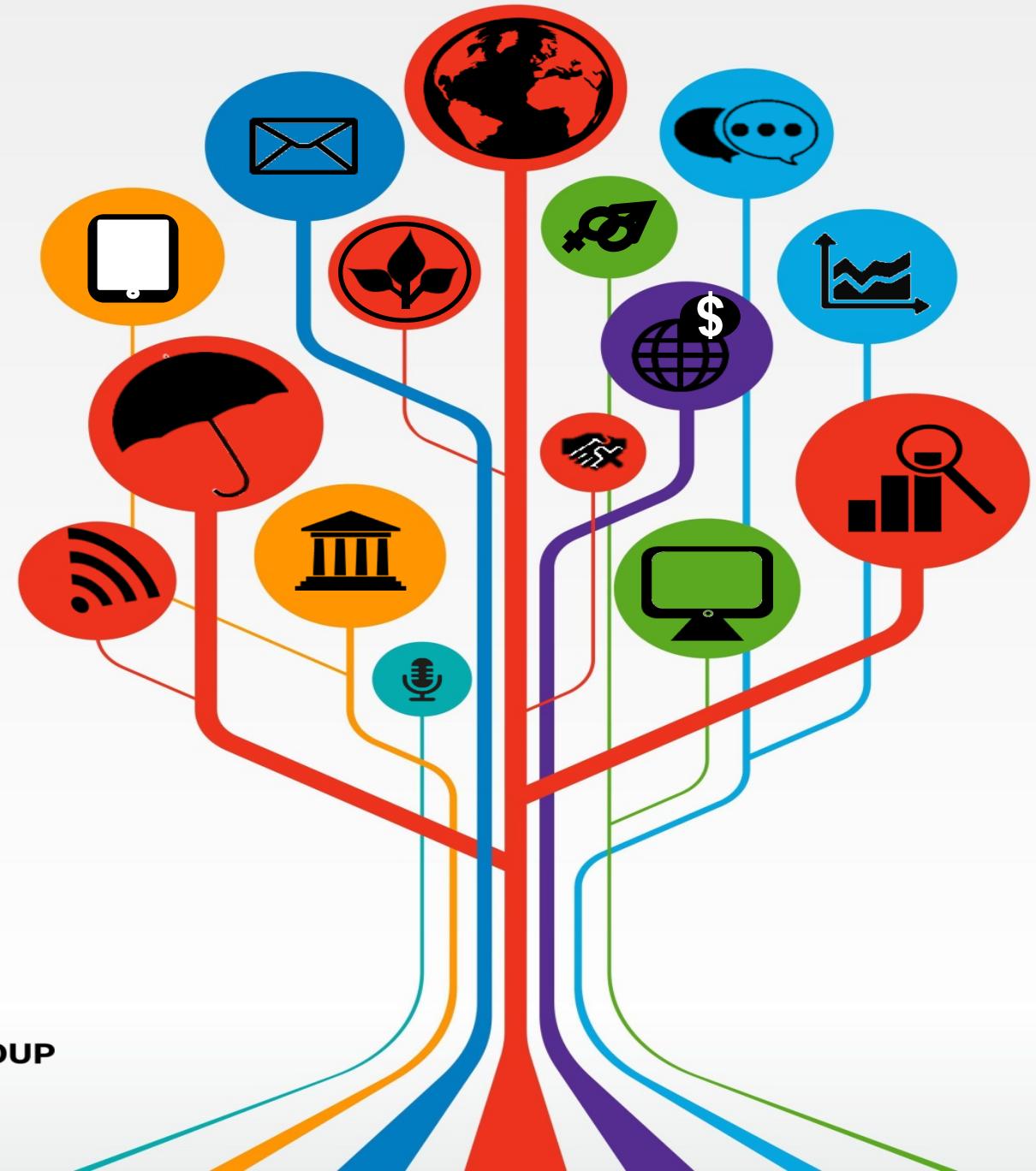
Critical quality check: flag warnings as high-priority

But ignore these values (separate with a comma):

Cancel **Save**

<https://www.surveycto.com/best-practices/survey-design-for-quality-data-part-2/>

TREATMENT MONITORING



What is treatment monitoring?

- Ensuring that individuals to which treatment is assigned actually receive treatment (or at least an offer of treatment) and that control households do not receive treatment.
- Treatment contamination is when some of the control group receives the treatment.
- It should be reduced to as great an extent as possible.

Example: Savings, Grants, Training

- In the context of new rural roads, we study the impact of complementary interventions for increasing productivity:
- 1) mechanisms for facilitating access to capital for investment . . .



1. Productive investment grants
USD 200



2. Simple saving accounts



3. Savings accounts +
matched grants of up to
USD 200 (constant)



4. Individual aspirational training



5. Simple bank accounts + matched grants +
individual aspirational training

Savings accounts

Banpro 
Grupo Promerica

¡En este 2018 ahore su dinero en Banpro y logre sus planes de ser emprendedor exitoso!



¿Tiene algún sueño para este 2018?
¿Tal vez invertir en un negocio propio?



Mi sueño para 2018 es...

Es por eso que en este año usted necesita una

Cuenta de Ahorro de fácil acceso 
Grupo Promerica

Ahora ahorrar es...

- Económico**
¡Sin monto mínimo de apertura!
¡Sin requerimientos de saldo mínimo!
¡Es cero comisiones, la cuenta es gratis!
- Rentable**
Gana una tasa de interés del 1% anual para cuentas en córdobas.
- Accesible**
Accesible desde cualquier Agente Banpro y otros puntos atención Banpro sin costo.
- Seguro**
Existe un seguro que protege sus ahorros totalmente gratis. En cualquier momento puede revisar su saldo desde cualquier punto de atención de Banpro sin costo.

Personal initiative training



How can we monitor treatment fidelity?

- Physical checks (from the **field**)
 - Performance of random physical in-person checks to ensure treatment applied as stated in IE protocol to units selected for treatment.
- Administrative data (from the **office**)
 - Checking attendance, account records to ensure treatment applied only to treatment HH and not to the control group.

Physical checks

- Ensure treatment is offered:
 - to the correct households (complicated by poor geospatial data, names as written on official identity cards, i.e., “El Loco”)
 - in the following order: HH head, spouse, oldest child above 18
 - according to the script to the extent possible so that all training offers are the same
 - using marketing materials as planned
- For the training, could have checked to ensure participants were only those to whom treatment was offered

Administrative data

- Training
 - Check attendance and pre-/post- tests to ensure that only HH to which treatment was offered are attending training.
- Savings accounts
 - Check accounts opened to ensure account opener related in some way to the household (based on BL data).
 - Correct functioning of matching mechanism (i.e., individuals achieving pre-determined savings goals receive match).
 - After each match period, commercial bank sent Excel with accounts, savings behavior, and amount of match (if any) to be received by account-holders.
 - Important to ensure that IE team and implementing partner (in this case, a bank) on the same page and that treatment is not applied incorrectly.

Other field challenges

- Re: the training, implementing NGO found that allowing community leaders to participate in training would increase take-up of community members.
 - But concerns over spillovers (i.e., control HH in communities in which leaders participate may benefit from the training in ways in which control HH in communities in which leaders do not).
 - Ultimately, have to weigh potential for spillovers against possibility of reduced take-up.

Other field challenges

- Two implementing organizations, each of which offered treatment without coordinating with the other.
- NGO did not know of bank's presence and vice versa.
- Led to confusion and mistrust on the part of community members directed at both implementers.
- In the case of the combined training + matched grant treatment, led to reduced take-up: HH that had accepted the training, but after the account offer elected not to participate in the training (bank's have a really bad rep in Nicaragua).

Bottom line

- Things are going to go wrong!
- Plan as much as you can
- Establish good communication with your team (internally, at the WB, as well as with implementing partners)
- Keep calm and . . . resolve issues as quickly and as effectively as possible

Thank you!

