

ICAP Methodology Webinar

Using aggregate data for program monitoring and evaluation: Case study examining decentralization of pediatric care and treatment services for HIV

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Upcoming Methodology Webinars

September: Methods for addressing implementation research questions: experiences from ICAP studies (Harriet Nuwagaba-Biribonwoha)

October: Using ICAP's Interactive Mapping Tool (Yingfeng Wu)

November: Methods for estimating retention in care and after ART initiation using routinely collected data (Matt Lamb)

December: Methods for estimating population size for MARP (Anna Deryabina)

Objectives

- To encourage use of routinely collected aggregate data for program evaluation
- To orient staff to:
 - available tools
 - methodological approaches and considerations

Outline

- Review use of routinely collected data on URS
- Developing an evaluation question
- Analysis files
 - Wiki location
 - Data structure
 - Codebooks
 - Merging PFACTS with aggregate program data
- Selecting appropriate measures
- Know the data
- Summary

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Routinely Collected Data on URS (1): Summary Reports

The screenshot shows the ICAP Reports page. At the top, there is a navigation bar with links for Home, Dashboard, Reports, Enter or Edit Data, and Import Data. Below the navigation bar, there is a section titled "Summary Reports for All Countries". This section includes a dropdown menu for "Select a reporting period" (set to Jan - Mar 2011) and another dropdown for "Select a country" (set to All Countries). The main content area is divided into several columns of report links:

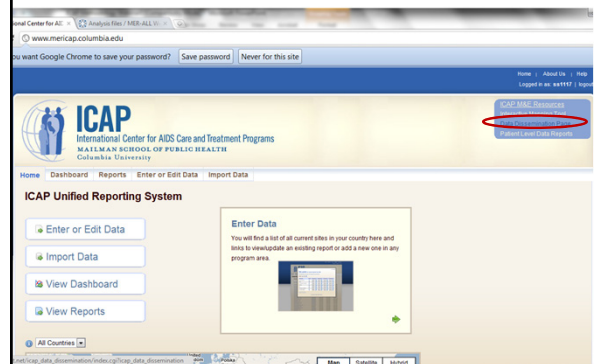
- Priority Indicators Overall Report**: Priority Indicators overall report (Download PDF), Overall
- Care and Treatment Reports**: Care and treatment overall report
- PFACTS Reports**: PFACTS overall report
- Summary data tables for PEPFAR/CDC narrative progress reports across all program areas**: CDC Indicator report
- PMTCT Reports**: PMTCT overall report
- HIV Testing & Counseling Reports**: HIV/C overall report
- Site Data**: Support/Rep, View all sites, Number of, Names of, District In

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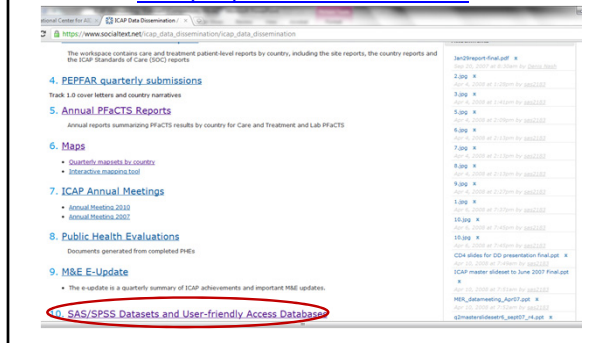
Analysis files: Wiki location (1)

<http://mericap.columbia.edu>

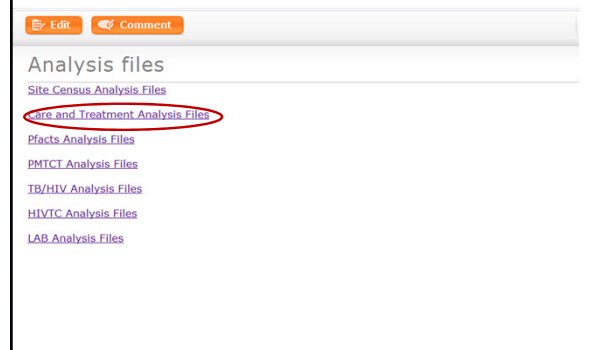


Analysis files: Wiki location (2)

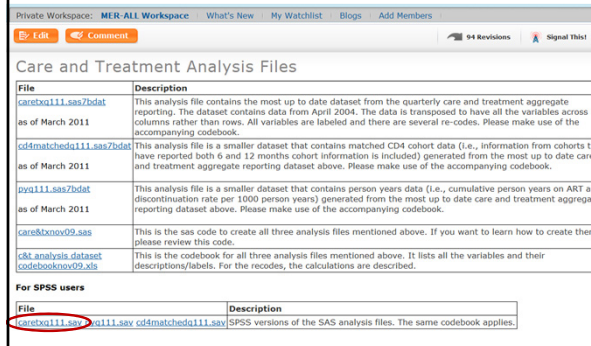
https://www.socialtext.net/icap_data_dissemination/icap_data_dissemination



Analysis files: Wiki location (3)

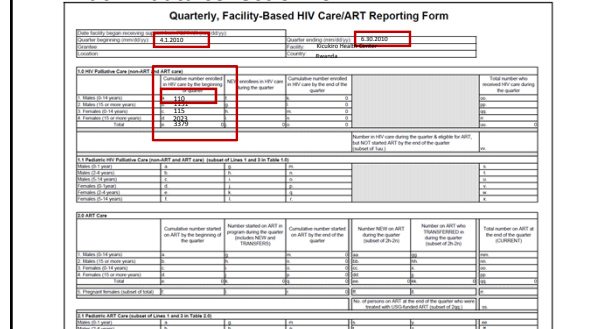


Analysis files: Wiki location (4)



Analysis files: Data structure

- Track 1 data collection form



Analysis files: Data structure (2)

Care and Treatment Report for Rwanda
 Updating site: Kicukiro Health Center
 Report Period: 2010-04-01 to 2010-06-30
 1. HIV Palliative Care (non-ART and ART care)

	Cumulative number enrolled in HIV care by beginning of quarter	NEW enrollees in HIV care during the quarter	Cumulative number enrolled in HIV care by end of quarter	Total Number who received HIV care during the quarter
Males(0-14 years)	110	0	110	04
Males(>14 years)	1131	31	1162	143
Females(0-14 years)	116	1	117	76
Females(>14 years)	2023	13	2036	1234
TOTAL	3379	65	3444	2216

Number in HIV care during the quarter & eligible for ART but NOT started ART by the end of the quarter: 0

Analysis files: Data structure (3)

country	facility	date	males_0_14	males_15_14	females_0_14	females_15_14	total	males_0_14	males_15_14	females_0_14	females_15_14	total
Rwanda	Kicukiro Health Center	01-Jul-2009	80	87	49	130	14	9	17	34	60	
Rwanda	Kicukiro Health Center	01-Jul-2009	86	293	72	769	11	14	14	83	101	
Rwanda	Kicukiro Health Center	01-Jul-2009	158	334	87	861	13	41	29	72	117	

Analysis files: Codebook (1)

File	Description
caretx111.sas7bdat	This analysis file contains the most up to date dataset from the quarterly care and treatment aggregate reporting. The dataset contains data from April 2004. The data is transposed to have all the variables across columns rather than rows. All variables are labeled and there are several re-codes. Please make use of the accompanying codebook.
cd4matched111.sas7bdat	This analysis file is a smaller dataset that contains matched CD4 cohort data (i.e., information from cohorts that have reported both 6 and 12 months cohort information is included) generated from the most up to date care and treatment aggregate reporting dataset above. Please make use of the accompanying codebook.
pyv111.sas7bdat	This analysis file is a smaller dataset that contains person years data (i.e., cumulative person years on ART or discontinuation rate per 1000 person years) generated from the most up to date care and treatment aggregate reporting dataset above. Please make use of the accompanying codebook.
care8txnov09.sas	This is the sas code to create all three analysis files mentioned above. If you want to learn how to create them please review this code.
all analysis dataset codebooknov09.xls	This is the codebook for all three analysis files mentioned above. It lists all the variables and their descriptions/labels. For the recodes, the calculations are described.

For SPSS users

File	Description
caretx111.sas pyv111.sav cd4matched111.sav	SPSS versions of the SAS analysis files. The same codebook applies.

Analysis files: Codebook (2)

Variable	Description	Calculations
1. country	Country Name	na
2. facility	Facility Name	na
3. date	Date	na
4. site	Site code	na
5. start_date	Beginning date of reporting period	na
6. quarter	Quarter number beginning July-September 2004 quarter as quarter=1	na
7. males_0_14	Cumulative number enrolled in HIV care by beginning of quarter Males(0-14 years)	na
8. males_15_14	Cumulative number enrolled in HIV care by beginning of quarter Males(15-14 years)	na
9. females_0_14	Cumulative number enrolled in HIV care by beginning of quarter Females(0-14 years)	na
10. females_15_14	Cumulative number enrolled in HIV care by beginning of quarter Females(15-14 years)	na
11. total	Cumulative number enrolled in HIV care by beginning of quarter Females(0-14 years)	na
12. new_enroll	NEW enrollees in HIV care during the quarter Males(0-14 years)	na
13. new_enroll	NEW enrollees in HIV care during the quarter Females(0-14 years)	na
14. new_enroll	NEW enrollees in HIV care during the quarter Males(15-14 years)	na
15. new_enroll	NEW enrollees in HIV care during the quarter Females(15-14 years)	na
16. total	Cumulative number enrolled in HIV care by the end of the quarter Males(0-14 years)	na
17. total	Cumulative number enrolled in HIV care by the end of the quarter Females(0-14 years)	na
18. total	Cumulative number enrolled in HIV care by the end of the quarter Males(15-14 years)	na
19. total	Cumulative number enrolled in HIV care by the end of the quarter Females(15-14 years)	na
20. total	Total Number who received HIV care during the quarter Males(0-14 years)	na
21. total	Total Number who received HIV care during the quarter Females(0-14 years)	na
22. total	Total Number who received HIV care during the quarter Males(15-14 years)	na
23. total	Total Number who received HIV care during the quarter Females(15-14 years)	na
24. total	Total Number who received HIV care during the quarter Males(>14 years)	na
25. total	Total Number who received HIV care during the quarter Females(>14 years)	na
26. total	Number in HIV care during the quarter & eligible for ART but NOT started ART by the end of the quarter	na
27. total	Cumulative started on ART by the beginning of quarter Males(0-14 years)	na
28. total	Cumulative started on ART by the beginning of quarter Females(0-14 years)	na
29. total	Number NEW on ART during the quarter (subset of 26-27) Males(0-14 years)	na
30. total	Number NEW on ART during the quarter (subset of 26-27) Females(0-14 years)	na
31. total	Cumulative started on ART by the beginning of quarter Males(>14 years)	na
32. total	Cumulative started on ART by the beginning of quarter Females(>14 years)	na
33. total	Number NEW on ART during the quarter (subset of 26-27) Males(>14 years)	na
34. total	Number NEW on ART during the quarter (subset of 26-27) Females(>14 years)	na
35. total	Number started on ART in program during the quarter (subset of 26-27) Males(0-14 years)	na
36. total	Number started on ART in program during the quarter (subset of 26-27) Females(0-14 years)	na
37. total	Number on ART who transferred in during quarter (subset of 26-27) Males(0-14 years)	na
38. total	Number on ART who transferred in during quarter (subset of 26-27) Females(0-14 years)	na

Analysis files: Codebook (3)

Variable	Description	Calculations
firstline_adult	Number of adults on first-line regimens	sum_51a_51b_51d_51e_51h_51j_51k_51u_51v_51wa_51wf_51wg_51wn_51wt_51wu_51wv_51wx)
secondline_adult	Number of adults on second-line regimens	sum_51c_51f_51i_51l_51m_51s_51wb_51wc_51wd_51we_51wi_51wj_51wq_51wr_51ww_51wy_51wz_51waa_51wab)

Care and Treatment Report for Kenya
 Updating site: Abubia Health Centre
 Report Period: 2011-01-01 to 2011-03-31
 5. Number of patients on each regimen at the end of the quarter

Regimen	Adult	Children
4AT-3TC-NVP	252	6
4AT-3TC-EFV	13	
4AT-3TC-LPVr		
ZDV-3TC-NVP	11	9
ZDV-3TC-EFV	2	
ZDV-3TC-LPVr		
ZDV-4S-NVP		
ZDV-4S-EFV		
ZDV-4S-LPVr		
4AT-4S-NVP		
4AT-4S-EFV		
4AT-4S-LPVr		

Analysis files: Merging PFACTS with aggregate program data (3)

➤ **Has pediatric HIV care been decentralized to lower level facilities?**

- Program data gives you patient information aggregated at site level, e.g., number of pediatric patients newly initiating ART at a given facility
- Facility level factors (e.g., facility type, location, etc.) associated with decentralization
- Need to merge PFACTS with HIV care and treatment data
- Merged by site_id
- Use last reported PFACTS

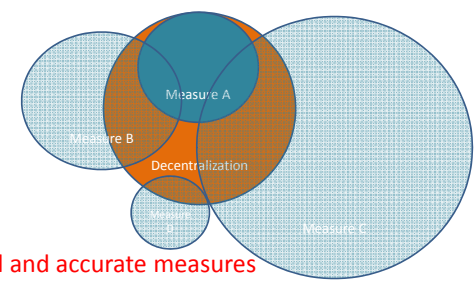
Analysis files: Merging PFACTS with aggregate program data (2)

Country	Facility	Date	Value 1	Value 2	Value 3	Value 4	Value 5
TD	TD	2004-01-01	100	200	300	400	500
TD	TD	2005-01-01	150	300	450	550	650
TD	TD	2006-01-01	200	400	550	650	750
TD	TD	2007-01-01	250	500	650	750	850
TD	TD	2008-01-01	300	600	750	850	950
TD	TD	2009-01-01	350	700	850	950	1050
TD	TD	2010-01-01	400	800	950	1050	1150

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- **Selecting appropriate measures**
- Know the data
- Summary

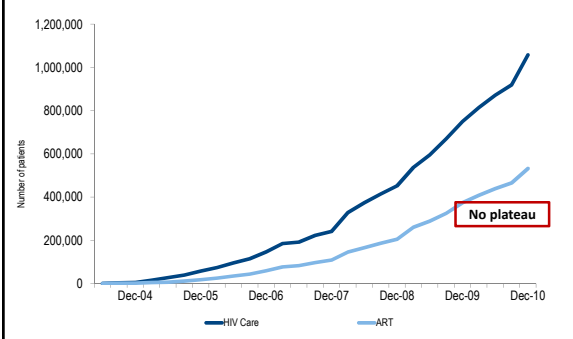
Selecting the appropriate measure



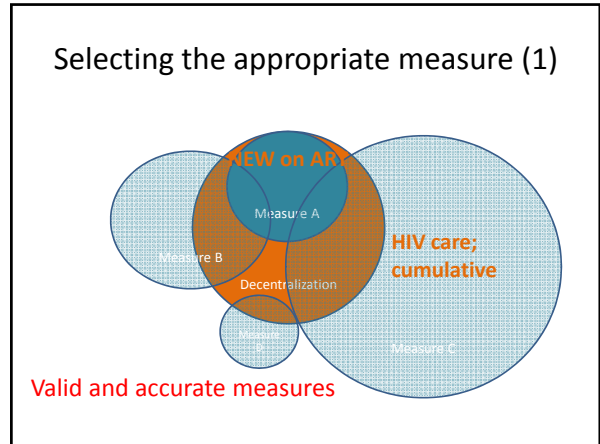
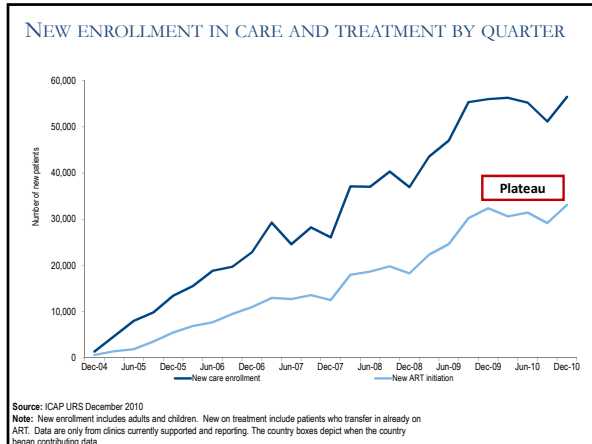
Selecting the appropriate measure (1)

1. HIV care v.s. ART?
2. Cumulative v.s. new during the quarter
3. Candidate measures
4. Program v.s. facility cohort trend

CUMULATIVE ENROLLMENT IN HIV CARE AND TREATMENT

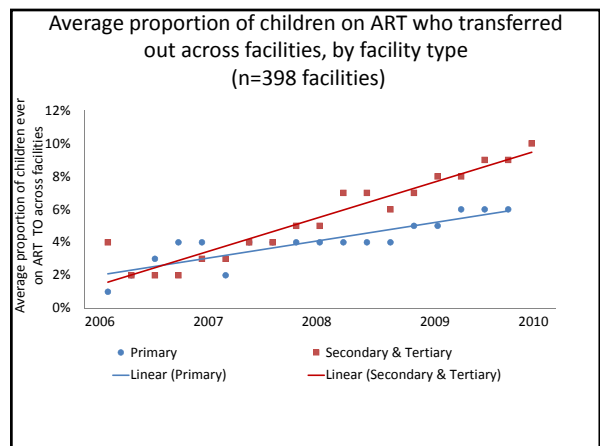
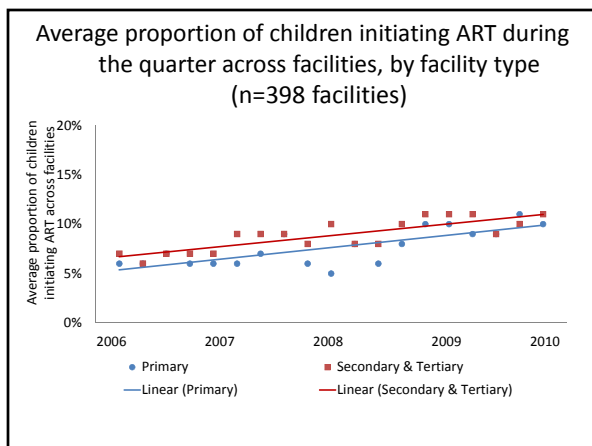


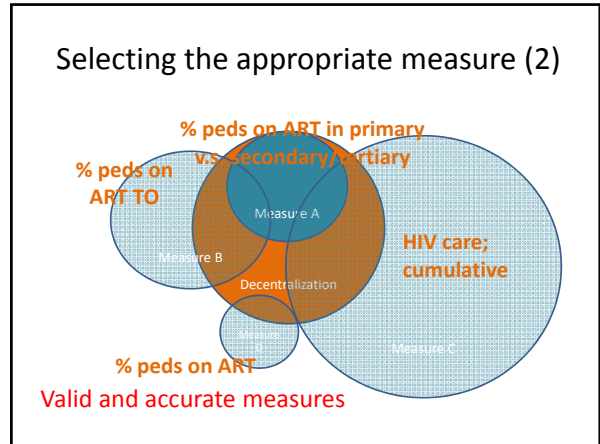
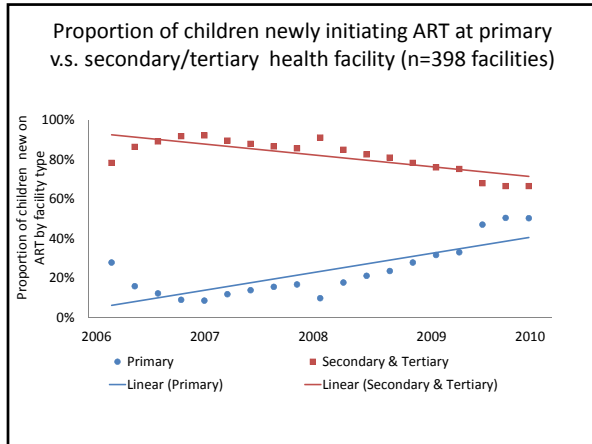
Source: ICAP URS December 2010
Notes: Data are only from clinics supported and reporting. The country boxes depict when the country began contributing data.



- ### Selecting the appropriate measure (2)
1. HIV care v.s. ART?
 2. Cumulative v.s. new during the quarter
 3. Candidate measures
 4. Program v.s. facility cohort trend

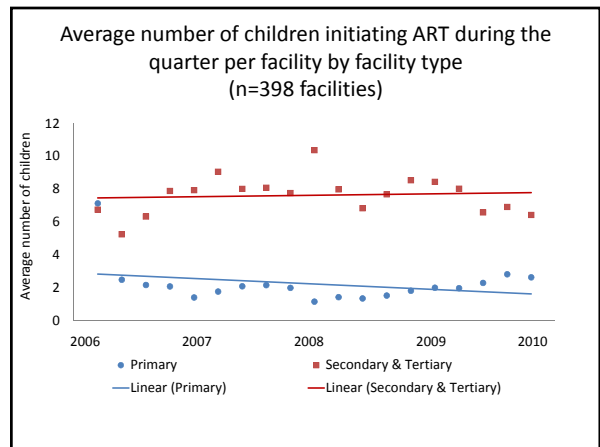
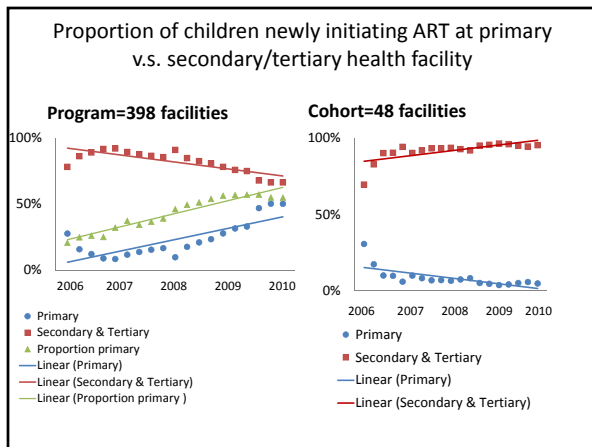
- ### Selecting the appropriate measure (2): Candidate measures
- Average proportion of children initiating ART during the quarter across facilities, by facility type
 - Average proportion of children on ART who transferred out across facilities, by facility type
 - Proportion of children newly initiating ART at primary v.s. secondary/tertiary health facilities





- ### Selecting the appropriate measure (x)
1. HIV care v.s. ART?
 2. Cumulative v.s. new during the quarter?
 3. Candidate measures
 4. Program v.s. facility cohort trend

- ### Selecting the appropriate measure (4): Program v.s. facility cohort trend
- Program trend: trend for ICAP or ICAP country program as a whole (include all facilities in the analysis regardless of when they started)
 - Facility cohort trend: trend for facilities that started in the same quarter (exclude facilities that started before or after that date)



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- **Know the data**
- Developing the concept sheet
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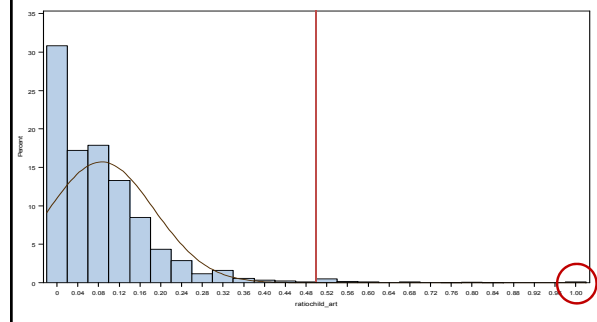
Know the data (1)

- Facilities that reported ≤ 3 quarters
 - Exclude effects of start up
- Facilities that do not enroll pediatric patients
 - Some facilities do not enroll pediatric patients by policy (e.g., other partners doing pediatric care)
- Pediatric centers of excellence
 - Relatively large pediatric numbers and can mask trend in less specialized facilities

Know the data (2)

- Impossible observations
 - $>100\%$
 - Negative values
- Implausible observations
 - Take the distribution of the variable (e.g histogram)
 - Examine whether the values are consistent across quarters for the same facility
 - Legitimate inconsistencies can arise due to small numbers

Know the data (3): Implausible observations



Know your data (4): Implausible observations

Quarter	Numerator	Denominator	%
July-Sep 2008	0	0	-
Oct-Dec 2008	0	0	-
Jan-Mar 2009	0	2	0
Apr-Jun 2009	2	5	40
July-Sep 2009	0	1	0
Oct-Dec 2009	1	6	17
Jan-Mar 2010	0	2	0
Apr-Jun 2010	1	1	100
Jul-Sep 2010	0	3	0

Know your data (5): Implausible observations

Quarter	Numerator	Denominator	%
July-Sep 2008	0	0	-
Oct-Dec 2008	0	0	-
Jan-Mar 2009	50	74	68
Apr-Jun 2009	10	20	50
July-Sep 2009	25	48	52
Oct-Dec 2009	22	567	4
Jan-Mar 2010	18	32	56
Apr-Jun 2010	30	49	61
Jul-Sep 2010	26	42	62

Summary

- Why program evaluation
- Routinely review URS tables and come up with interesting program evaluation questions
- Use the analysis files
- Think carefully when defining your outcome measure
- Examine your data carefully before you analyze your data
- Further develop your ideas into an manuscript

https://www.socialtext.net/icap-concept-sheets/icap_concept_sheets