

How Do You Know? Best Practices in Performance Measurement

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Priority Concepts

- Concept 1: Know your question. Write it down. Measurement starts with a question.
- Concept 2: Know the population from which you are measuring (usually the denominator). The choice of measurement depends on the question.
- Concept 3: Use an entry cohort to answer general questions about characteristics or outcomes.
- Concept 4: Know your data and organize it well. From what date forward does it contain information about every child served? Through what date is activity reflected?
- Concept 5: Stratification: Identifying and managing diagnostically-related groups.

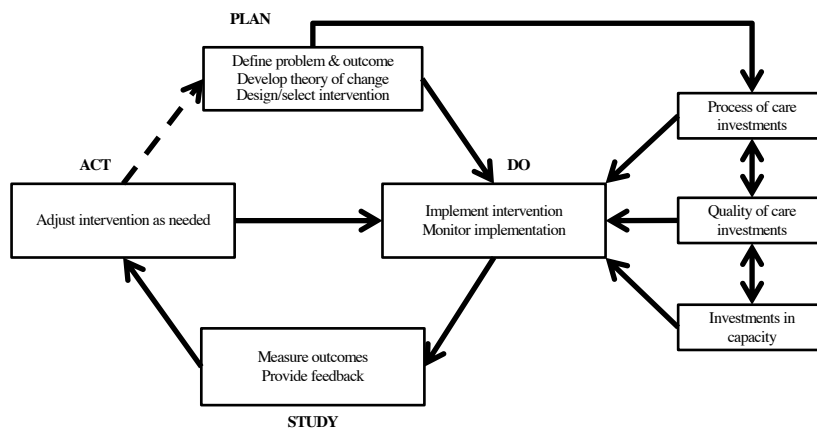
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More Priority Concepts

- Concept 6: The Window: Reform can only influence that which has yet to happen.
- Concept 7: Reinvestment: Looking into the future, could we spend the same money more effectively?

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The Cycle of CQI



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So we have questions about...

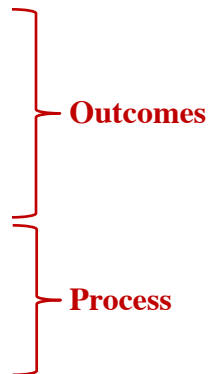
Processes	Quality	Capacity	Outcomes

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IDCFS Provider Dashboard

Indicators measuring

- Absence of maltreatment, maltreatment in care, maltreatment recurrence
- Case reopening after case closure
- Children achieving legal permanency
- Frequency of moves from one provider to another
- Frequency of parent/child visits
- Frequency of worker/child contacts
- Frequency of worker/foster parent contacts
- Service plan in place within 45 days



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Converting data into evidence

Evidence is information that is used to support an observation, claim, hypothesis, or decision.

Evidence can be found in or derived from a number of places (e.g., administrative data archives, case record review, stakeholder feedback, social science literature).

Evidence:

- points to the outcomes that need improvement (**Plan**)
- informs the selection of interventions (**Do**)
- guides the assessment of interventions (**Study**)
- informs decisions about what to do in light of those results (**Act**).



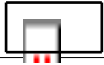


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Converting data into evidence

Not all “data” is evidence.

Not all “data” answers the questions you have.

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CQI Phase	Hypothesis development/testing	Evidence use
Plan 	Define the problem. ("I observe that...")	What evidence supports this observation?
	Hypothesize as to the cause of the problem. ("I think it's because...")	What evidence supports this hypothesis?
Do 	Identify a solution. ("So I plan to...")	What evidence supports the hypothesis that the proposed dose of the intervention will lead to this specific degree of improvement?
	Set a performance target. ("...which I think will result in...")	Taken together, what evidence supports the theory of change—i.e., the claim about how this intervention will have the intended effect on the target population?
Study 	Implement the intervention.	Collect data required for an analysis of intervention effectiveness and analysis of implementation fidelity.
	Monitor implementation.	What evidence is there that the intervention was (or was not) implemented with fidelity?
Act 	Measure progress toward the target outcome.	What evidence is there that the intervention was effective (or not effective)?
	Provide feedback to relevant stakeholders and decision makers.	Transmit evidence regarding outcomes and fidelity to those who will interpret the findings and make decisions accordingly.
Act 	Determine the extent to which the problem still exists.	What evidence supports this observation?
	Confirm or refute the theory of change.	What evidence supports this claim?
	Adjust the intervention as needed.	What evidence supports the decision to continue, modify, or discontinue the intervention?

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Understand Variation

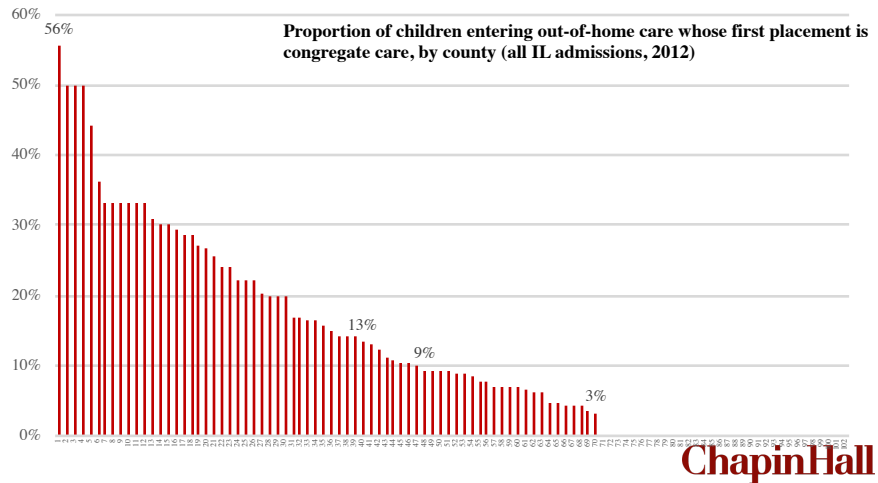
Nothing happens without variation. If everyone achieved the same outcomes, there would be nothing to change. **Variation is the signal that there is room somewhere in the system for improvement.**

Variation exists on four dimensions:

- **Person:** child to child, family to family
- **Place:** county to county, provider to provider, etc.
- **Service:** congregate care vs. foster families vs. kinship care, etc.
- **Time:** cohort to cohort

We want to understand how outcomes vary at the person, place, and service level so that we can do something to improve outcomes over time.

Understand Variation



Key elements of CQI

Create good habits for producing knowledge to fuel the CQI process:

- Train yourself to ask who is being counted...**or who is in the denominator.**
- Similarly, train yourself to **think rigorously** about the information **you generate.**
- Train yourself to **think rigorously** about the information **you consume.**

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What population should I select? Put differently, who will be in my denominator?

Three common choices, using foster care as an example:

- Children in foster care - the active caseload (other terms: **point-in-time, cross-section, or census**)
- Children entering foster care - children placed during some period of time, usually one year (other terms: **an admission cohort**)
- Children leaving foster care - children who left placement in the last year (other terms: **an exit cohort**)

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What is the difference?

- Point-in-time - only children in care
- Exit cohort - only children who left care
- Entry cohort - all children who entered

By definition, these are very **different** populations.

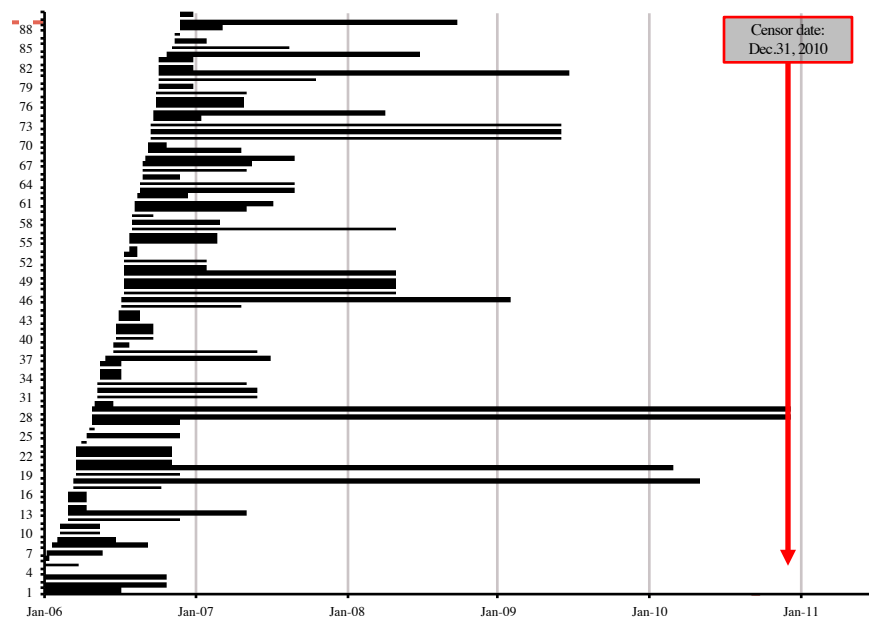
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Why does it matter who is in the denominator or the risk set?

- When part of the population is excluded from the denominator, **you can no longer make a statement about what's typical.**
- When you want to measure the **effect of an intervention over** time you have to include everyone the intervention touches in your analysis.

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Entry and duration patterns for all children first placed in 2006, observed through Dec. 31, 2010
(Sample FCDA County)



Implications

When looking at any data analysis (or table):

- Know the question.
- Know the population that was used to generate the data.
- Always, ask: Is it the right denominator for the question? *If it isn't, set the data aside.*

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Exercise 1

Name the population

Practice recognizing which population is being referred to in a table.

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Foundational Outcomes for a Child Welfare System

Safety:

1. Minimize likelihood of child abuse incidents (first and recurring; maltreatment in care).
2. Minimize likelihood of foster care placements.

For children placed:

3. Maximize use of the least restrictive placement. (*placement type*)
4. Maximize placement stability. (*movement*)
5. Minimize time in non-permanent home. (*duration*)
6. Maximize likelihood of exit to either reunification, relatives or other support family, adoption. (*permanency*)
7. Minimize likelihood of reentry (*permanency*)

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2. Minimize the likelihood of placement

Entry Year	Number of First Placements in Foster Care	
	Region 1	Region 2
2011	127	300
2012	143	339
2013	165	333
2014	125	360

Entry Year	Placement Rate per 1000	
	Region 1	Region 2
2011	3.5	1.6
2012	4.0	1.8
2013	4.6	1.8
2014	3.5	1.9

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3. Maximize use of least restrictive placements

Year	Point-in-time, January 1	
	Family	Congregate
2011	79%	21%
2012	87%	13%
2013	90%	10%
2014	91%	9%

Year	Entry Cohorts, First Placement Type	
	Family	Congregate
2011	80%	20%
2012	84%	16%
2013	85%	15%
2014	86%	14%

Year	Entry Cohorts, Predominant Placement Type	
	Family	Congregate
2011	84%	16%
2012	90%	10%
2013	90%	10%
2014	91%	9%

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4. Maximize placement stability

Number of moves per child, observed through 6/30/2015 (IL, first admissions)

Entry Year	Total First Admissions	Number By Number Of Moves				Total First Admissions	Percent By Number Of Moves			
		No Moves	One Moves	Two Moves	Three or More Moves		No Moves	One Moves	Two Moves	Three or More Moves
2008	4,660	1,548	1,072	695	1,345	100%	33%	23%	15%	29%
2009	4,383	1,513	1,021	605	1,244	100%	35%	23%	14%	28%
2010	4,504	1,483	1,067	681	1,273	100%	33%	24%	15%	28%
2011	4,150	1,313	983	631	1,223	100%	32%	24%	15%	29%
2012	4,283	1,378	1,069	715	1,121	100%	32%	25%	17%	26%
2013	4,322	1,487	1,171	713	951	100%	34%	27%	16%	22%
2014	4,569	1,835	1,309	657	768	100%	40%	29%	14%	17%
2015	2,197	1,226	622	213	136	100%	56%	28%	10%	6%

Note that for more recent entry groups, less time will have elapsed to observe movement. Outcomes are comparable when percent still in care is comparable.

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4. Maximize Placement Stability

Number of moves per child, by duration interval (IL, first admissions)

Entry Year	6 Months and Under	7 to 12 Months	13 to 18 Months	19 to 24 Months	25 to 30 Months	31 to 36 Months	37 to 42 Months
2008	1.07	0.36	0.31	0.30	0.32	0.34	0.33
2009	1.07	0.36	0.32	0.28	0.30	0.30	0.34
2010	1.10	0.37	0.33	0.30	0.30	0.29	0.29
2011	1.19	0.36	0.30	0.33	0.30	0.32	0.35
2012	1.14	0.35	0.29	0.28	0.26	--	--
2013	1.06	0.36	0.32	--	--	--	--
2014	1.08	--	--	--	--	--	--
2015	--	--	--	--	--	--	--

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Federal CFSR Measure of Placement Stability

Of all children who enter foster care in a 12-month period, what is the rate of placement moves per day of foster care?

- Uses entry cohort
- Correctly accounts for differences in time in care by using a RATE (moves per day)

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5. Minimize time in non-permanent home (duration, length of stay)

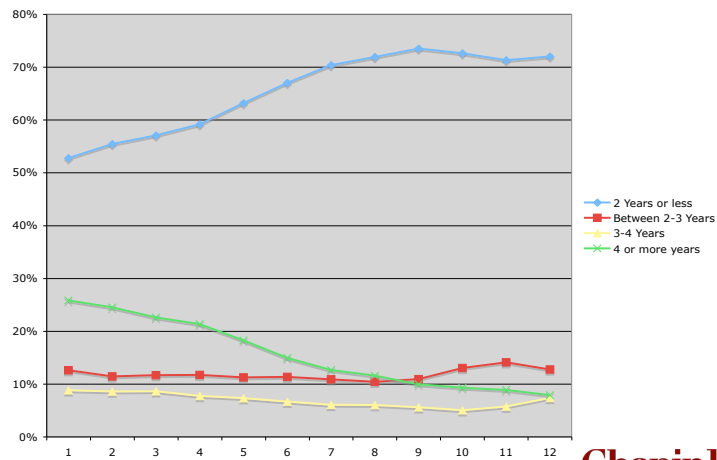
Quartile Duration in Months (IL, first admissions)

Total First Admissions			
Entry Year	25th Percentile	50th Percentile	75th Percentile
2009	11.05	28.36	48.69
2010	11.25	25.57	46.43
2011	13.25	28.56	46.52
2012	12.30	29.21	--
2013	12.52	27.61	--
2014	12.52	--	--
2015	--	--	--

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Cautionary Tale: Six Year Time Series of Duration to Date of Point-in-Time Population, Sample State



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Six Year Quartile Duration Figures for All Admissions

	Number All Admissions*	25 Percentile In Months	50 Percentile In Months	75 Percentile In Months
2001	4742	1.5	6.7	19.3
2002	4902	1.6	7.4	21.4
2003	5770	2.1	8.6	21.1
2004	6128	1.4	6.4	17.2
2005	5857	1.5	6.5	17.4
2006, six months	2934	1.7	<i>don't know yet</i>	<i>don't know yet</i>

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Cautionary Tale: Comparison of Entry and Exit Cohort for Measuring Change in Duration

Median Duration in Out-of-Home Care by Year of Entry , First Entries	
Entry Year	Median Duration (Months)
2004	11.3
2005	9.0
2006	10.5
2007	10.5
2008	10.4
2009	10.1
2010	10.2

Median Duration in Out-of-Home Care for Children Exiting Out- of-Home Care by Year of Exit	
Exit Year	Median Duration (Months)
2004	9.1
2005	8.8
2006	11.2
2007	11.1
2008	12.1
2009	12.6
2010	12.8

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Cautionary Tale: Comparison of Entry and Exit Cohort for Measuring Change in Duration

Entry Year	All First Entries
2004	7,981
2005	8,497
2006	7,797
2007	6,743
2008	6,499
2009	5,044
2010	4,201

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6. Maximize likelihood of exit to reunification; relatives or other support family; adoption. (permanency)

Number and Percent of First Admissions by Entry Year and Exit Destination from First Spell (IL, first admissions)

Number to Each Outcome									
Entry Year	Total First Admissions	Total Discharged as of 06-30-2015	Reunification	Adoption	Relative	Reach Majority	Runaway	Other	Still in First Spell as of 06-30-2015
2008	4,660	4,338	2,051	1,370	294	110	218	295	322
2009	4,383	3,924	1,922	1,176	279	86	213	248	459
2010	4,504	3,839	2,010	1,082	220	60	228	239	665
2011	4,150	3,135	1,685	878	183	26	207	156	1,015
2012	4,283	2,609	1,636	499	152	4	194	124	1,674
2013	4,322	1,869	1,454	145	27	1	147	95	2,453
2014	4,569	1,061	856	12	21	0	99	73	3,508
2015	2,197	191	164	0	2	0	15	10	2,006
Percent to Each Outcome									
2008	100%	93%	44%	29%	6%	2%	5%	6%	7%
2009	100%	90%	44%	27%	6%	2%	5%	6%	10%
2010	100%	85%	45%	24%	5%	1%	5%	5%	15%
2011	100%	76%	41%	21%	4%	1%	5%	4%	24%
2012	100%	61%	38%	12%	4%	0%	5%	3%	39%
2013	100%	43%	34%	3%	1%	0%	3%	2%	57%
2014	100%	23%	19%	0%	0%	0%	2%	2%	77%
2015	100%	9%	7%	0%	0%	0%	1%	0%	91%

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Combining Duration and Permanency

- How **long** does it take for children to be **reunified** or to have a **subsidized guardianship**?
- How **long** does it take for children to be **adopted**? Is it **time** getting longer or shorter?

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Combining Duration and Permanency: Advice

- Use an entry cohort for which most of the discharges have been observed to learn what speed to (adoption, reunification, relative etc.) has been.
- Use survival curves (or quartiles) to judge whether or not overall duration is changing.

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7. Minimize likelihood of reentry

Mix of First Admissions and Reentries by Year (IL, all admissions)

Entry Year	All Admissions	Number		Percent	
		First Admission	Re-entry	First Admission	Re-entry
2008	6,125	4,660	1,465	76%	24%
2009	5,683	4,383	1,300	77%	23%
2010	5,896	4,504	1,392	76%	24%
2011	5,439	4,150	1,289	76%	24%
2012	5,581	4,283	1,298	77%	23%
2013	5,593	4,322	1,271	77%	23%
2014	5,773	4,569	1,204	79%	21%
2015	2,758	2,197	561	80%	20%

This table tells you what proportion of the entry population is coming into care as a reentry...

...it does not tell you the *likelihood* of re-entering care after exiting.

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7. Minimize likelihood of reentry (exit)

Re-entries from an exit cohort (IL, first admissions)

Exit Year	All Exits (Except Adoption and Reach Majority)				
	Total Exits (First Admissions)	Total Re-entries To Date	Re-entries w/in 1 Year	Total Re-entries to Date as Percent of Exits	Re-entries w/in 1 Year as Percent of Exits
2008	2,787	714	496	26%	18%
2009	3,225	678	487	21%	15%
2010	2,769	642	478	23%	17%
2011	2,790	651	500	23%	18%
2012	2,820	630	530	22%	19%
2013	2,638	540	481	20%	18%
2014	2,758	461	458	17%	17%
2015	1,287	123	123	10%	10%

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Federal CFSR Measures of Permanency

1) Of all children who enter foster care in a 12-month period, what percent discharged to permanency within 12 months of entering foster care?

- Uses entry cohort
- Does not account for permanency prior to 12 months

(Re-entry measure uses same population)

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Federal CFSR Measures of Permanency

2) Of all children in foster care on the first day of the 12-month period, who had been in foster care (in that episode) for 12-23 months, what percent discharged to permanency within 12 months of the first day of the year?

3) Of all children in foster care on the first day of the 12-month period, who had been in foster care (in that episode) for 12-23 months, what percent discharged to permanency within 12 months of the first day of the year?

- Both use point-in-time population looking *forward*.

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Final Two Exercises

Exercise 2: What can I learn from this table?

Exercise 3: Asking and Answering Questions

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Additional Guidance for Exercise 3

A non-analyst will ask:

- How long does ... usually take?
- Do children who ... have this happen?
- What is the average time it takes to ...
- I want to know more about children who ...
- Do judges usually ...
- How fast will the placements we have right now take to be discharged?
- How do this agency and that agency compare on ...?
- Is the time to ... changing?

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Additional Guidance for Exercise 3

- It's the analyst's task to translate the non-analyst's question into an analytic question or questions, and then to produce results.
- Files are designed to shorten the time between asking and answering questions (longitudinal).
- Answers to common questions get standardized into reports (reflecting best measurement practices).

A "survival curve" describes the full distribution of length of stay (or tenure). The median is the midpoint of the survival curve.

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Wrap Up -- When looking at any data analysis (or table)

- Know the question.
 - Know the population that was used to generate the data.
 - Always, ask: Is it the right denominator for the question? *If it isn't, set the data aside.*
-
- When measuring outcomes, what you see depends on how you look.
 - When desire is to characterize what's typical, most of the time, this means outcome measures should be based on entry cohorts.

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Some resources

For more information about CQI in Child Welfare and examples of analytics applied to child welfare:

Website: fda.chapinhall.org

Paper: <http://www.chapinhall.org/research/report/principles-language-and-share-meaning-toward-common-understanding-cqi-child-welfare>

For an online version of Chapin Hall's analytics course, see set of videos and workbook-based exercises produced in partnership with the Northern California Training Academy: <http://academy.extensiondlc.net/mod/resource/view.php?id=916>

For overview of federal CFSR Outcomes, including review of importance of selecting the right population, select "CFSR 3 Data Overview" at <http://cssr.berkeley.edu/cwscmsreports/presentations/>

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