# How Do You Know?
# Best Practices in Performance Measurement

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Policy research that benefits children, families, and their communities

## 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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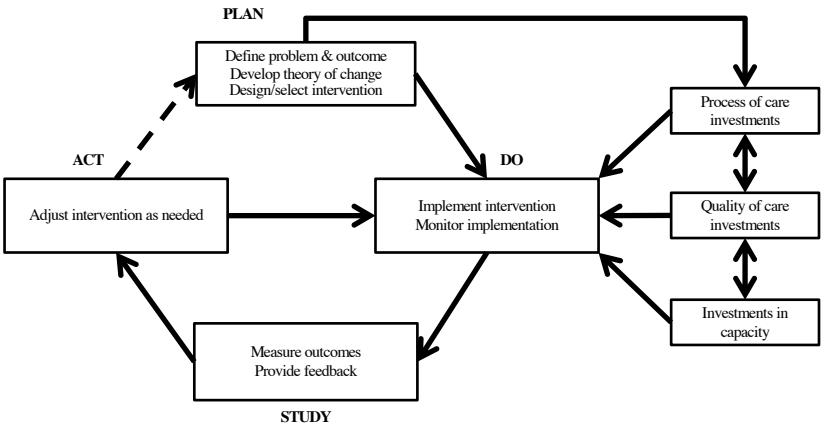
## The Cycle of CQI

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## So we have questions about…

| Processes | Quality | Capacity | Outcomes |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
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| | | | |

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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

**Outcomes**

- Frequency of parent/child visits
- Frequency of worker/child contacts
- Frequency of worker/foster parent contacts
- Service plan in place within 45 days

**Process**

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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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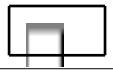
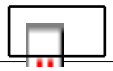
| CQI Phase | Hypothesis development/testing | Evidence use |
|---|---|---|
| Plan | Define the problem. ("I observe that…") | What evidence supports this observation? |
|  | Hypothesize as to the cause of the problem. ("I think it's because…") | What evidence supports this hypothesis? |
| | Identify 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? |
| Do  | 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? |
| Study  | 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.

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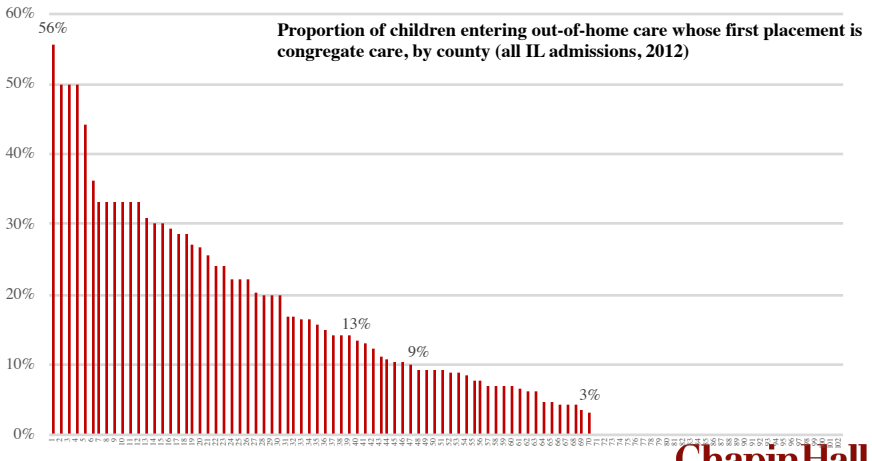
## Understand Variation

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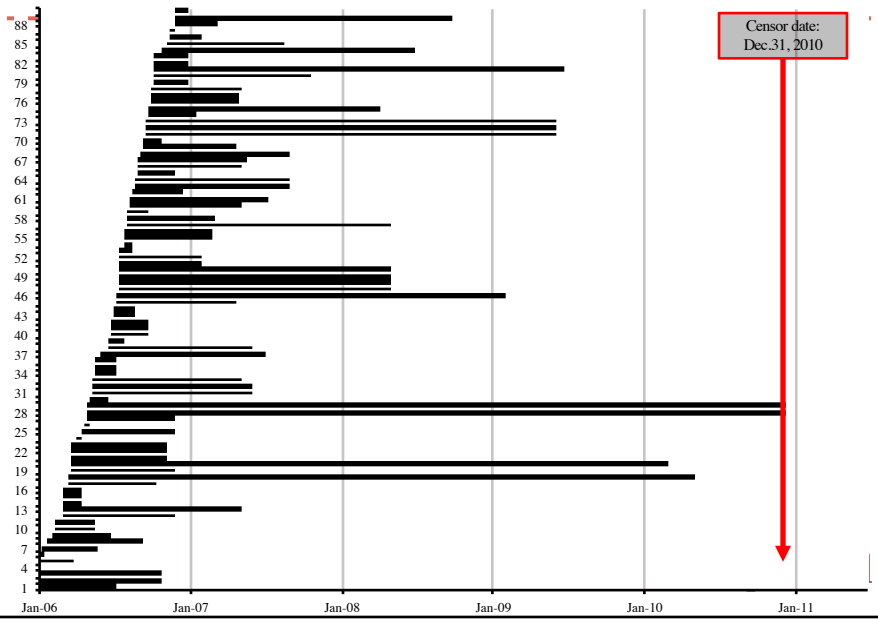
**Entry and duration patterns for all children first placed in 2006, observed through Dec. 31, 2010 (Sample FCDA County)**



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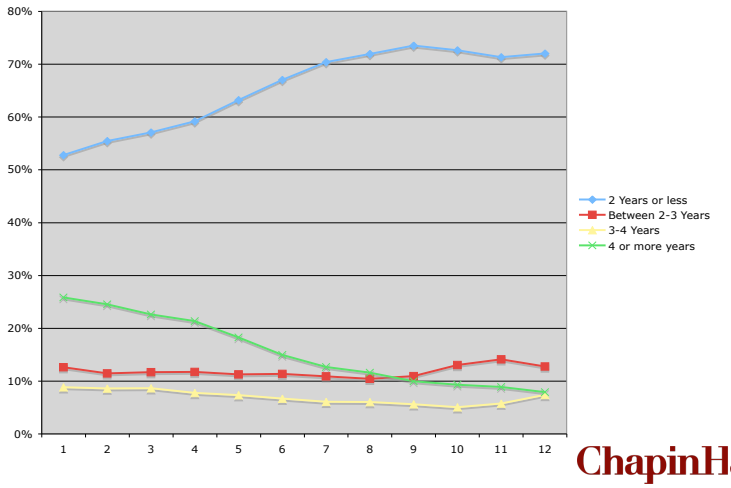
## Cautionary Tale: Six Year Time Series of Duration to Date of Point-in-Time Population, Sample State

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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 | *don't know yet* | *don't know yet* |

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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 be 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% |

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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)**

| All Exits (Except Adoption and Reach Majority) | | | | | |
|---|---|---|---|---|---|
| Exit Year | 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: fcda.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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