

# Analytics Fundamentals: Applying Longitudinal Analysis in Child Welfare Administration

National Child Welfare Evaluation Summit  
August 29, 2011

**Center for State Foster Care and Adoption Data**

**ChapinHall** at the University of Chicago

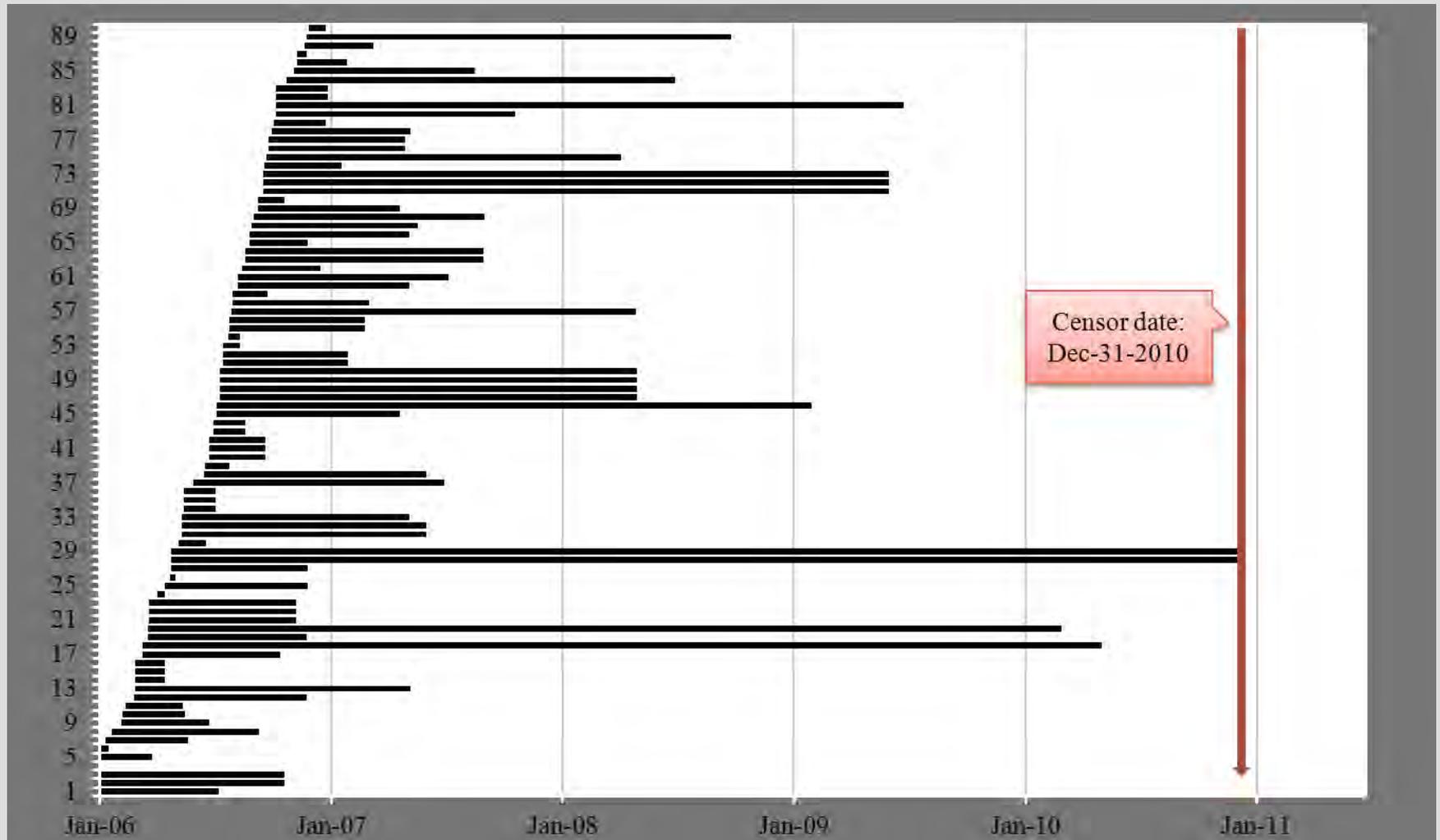
Policy research that benefits children, families, and their communities

# About our group at Chapin Hall

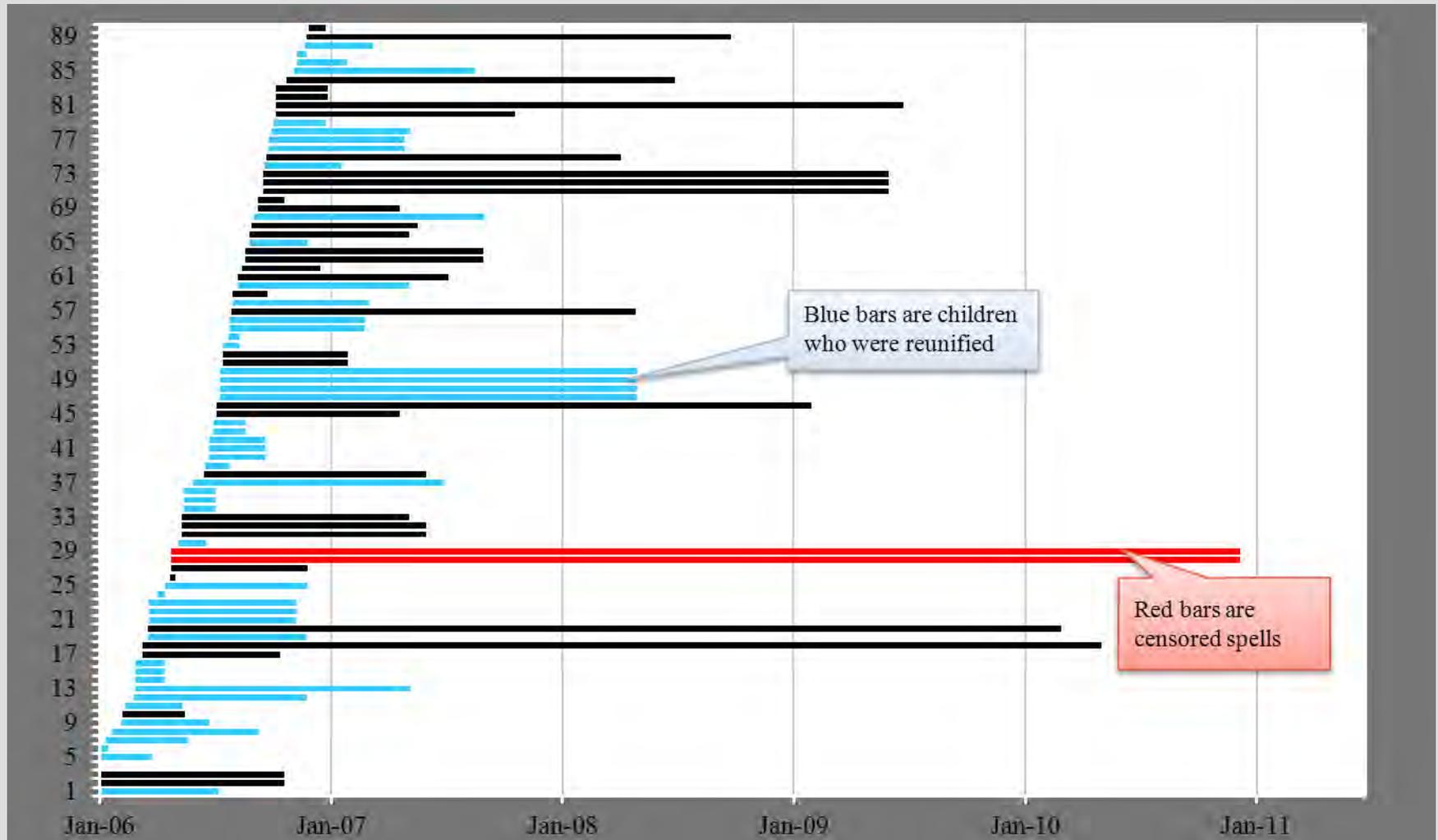
---

- A group of policy researchers who specialize in building knowledge to improve the lives of children, families, and their communities. Specifically, we focus on:
  - Organizing and analyzing administrative data
  - Using administrative data to advance knowledge about patterns and pathways through child welfare systems;
  - Using administrative data to inform the continuous quality improvement cycle with respect to key child welfare outcomes;
  - Using administrative data to connect outcomes to finance in child welfare systems;
  - Operating the Center for State Foster Care and Adoption Data (FCDA) which provides broad access to information for member states and counties.

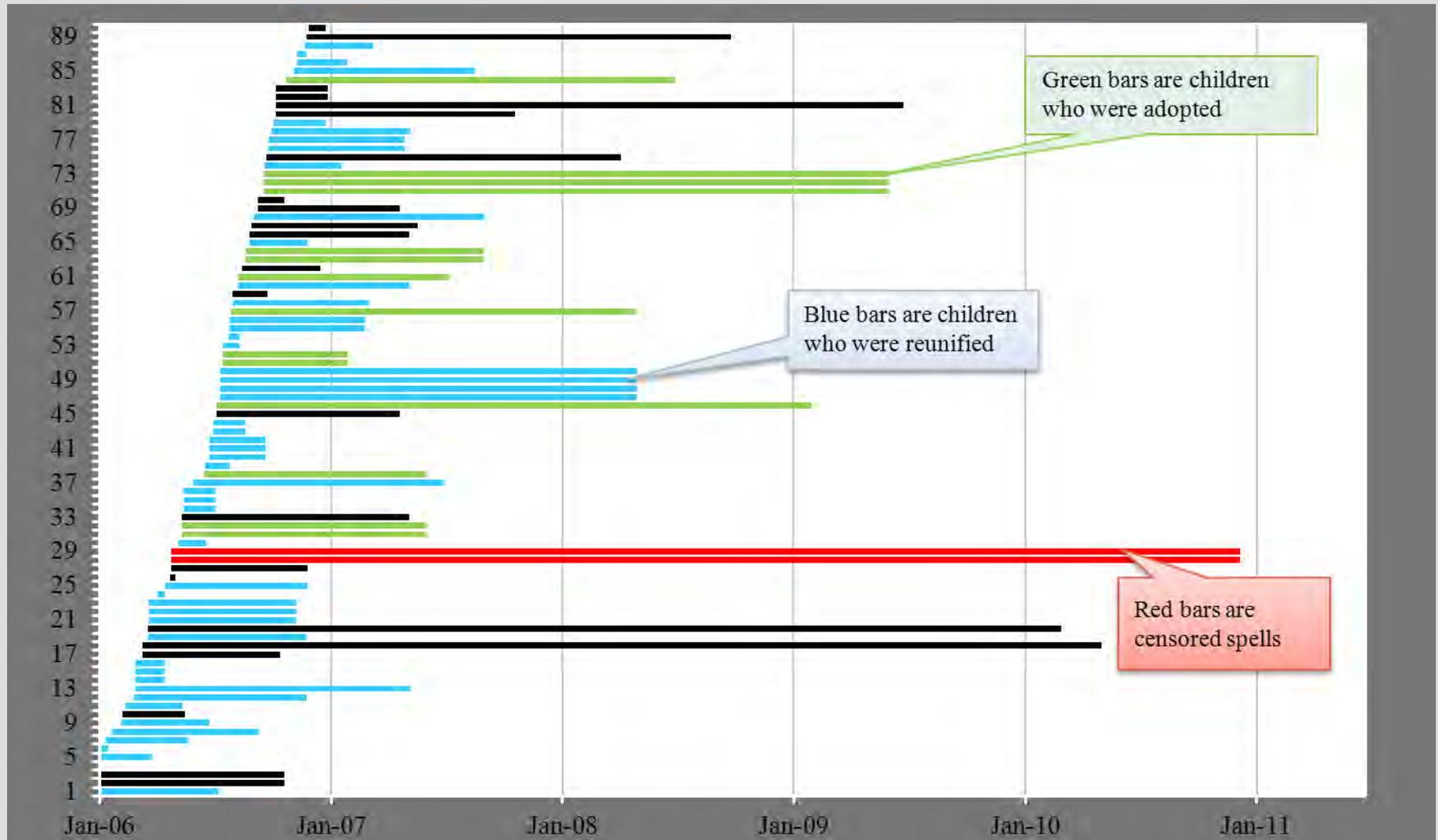
# Entry and Duration Patterns for All Children First Placed in 2006 Observed Through Dec. 31, 2010, Sample FCDA County



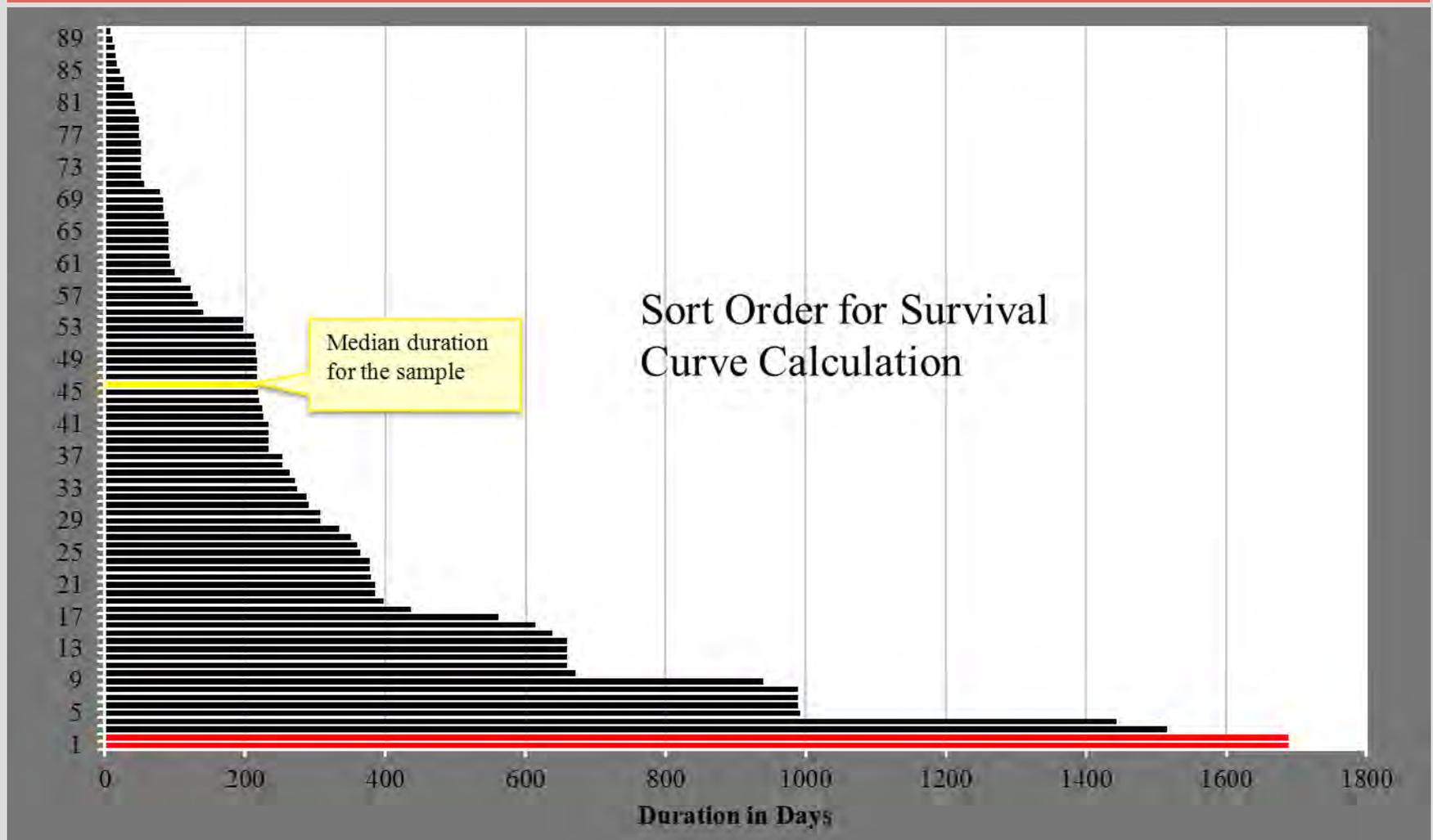
# Entry and Duration Patterns for All Children First Placed in 2006 Observed Through Dec. 31, 2010, Sample FCDA County



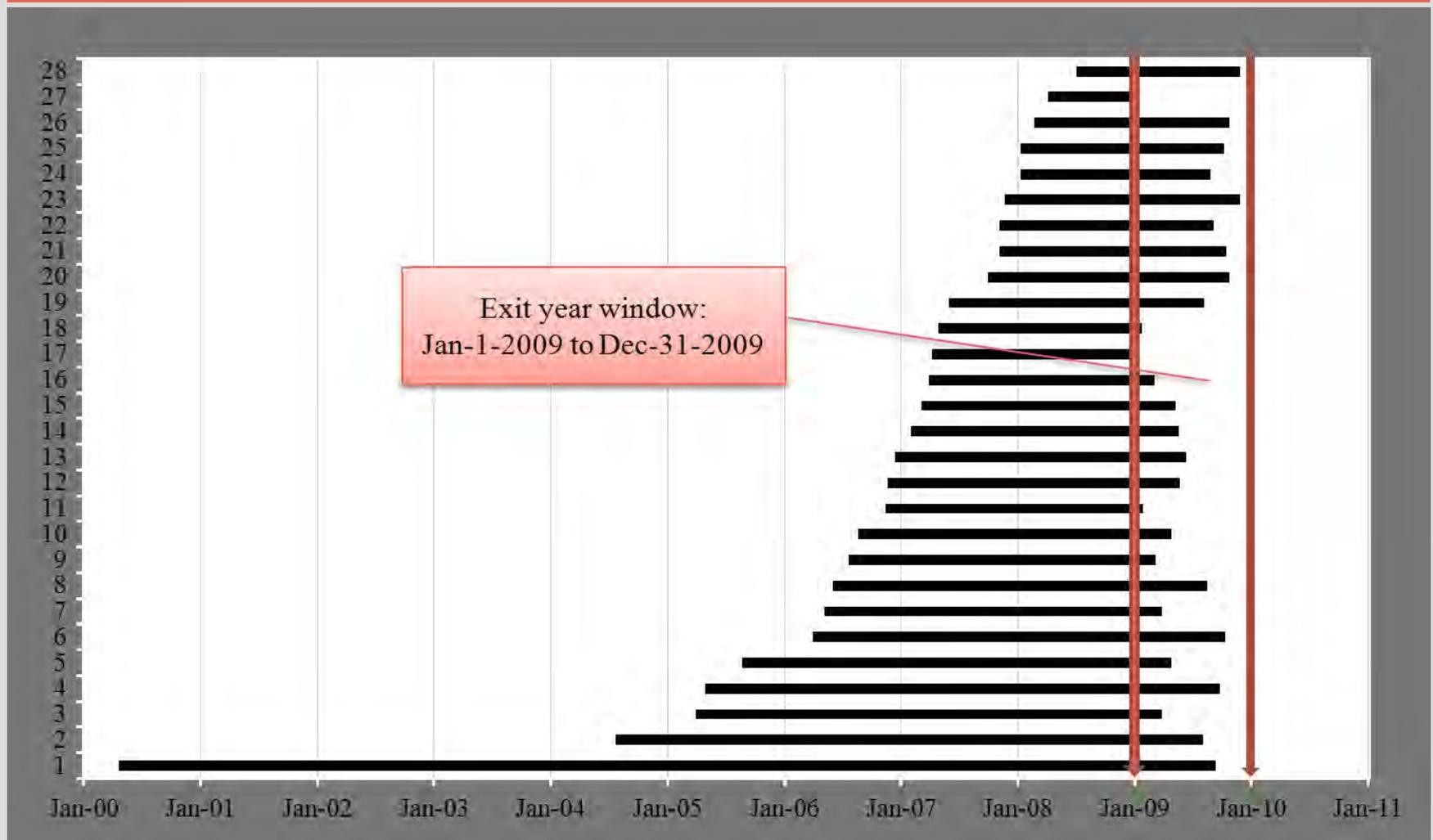
# Entry and Duration Patterns for All Children First Placed in 2006 Observed Through Dec. 31, 2010, Sample FCDA County



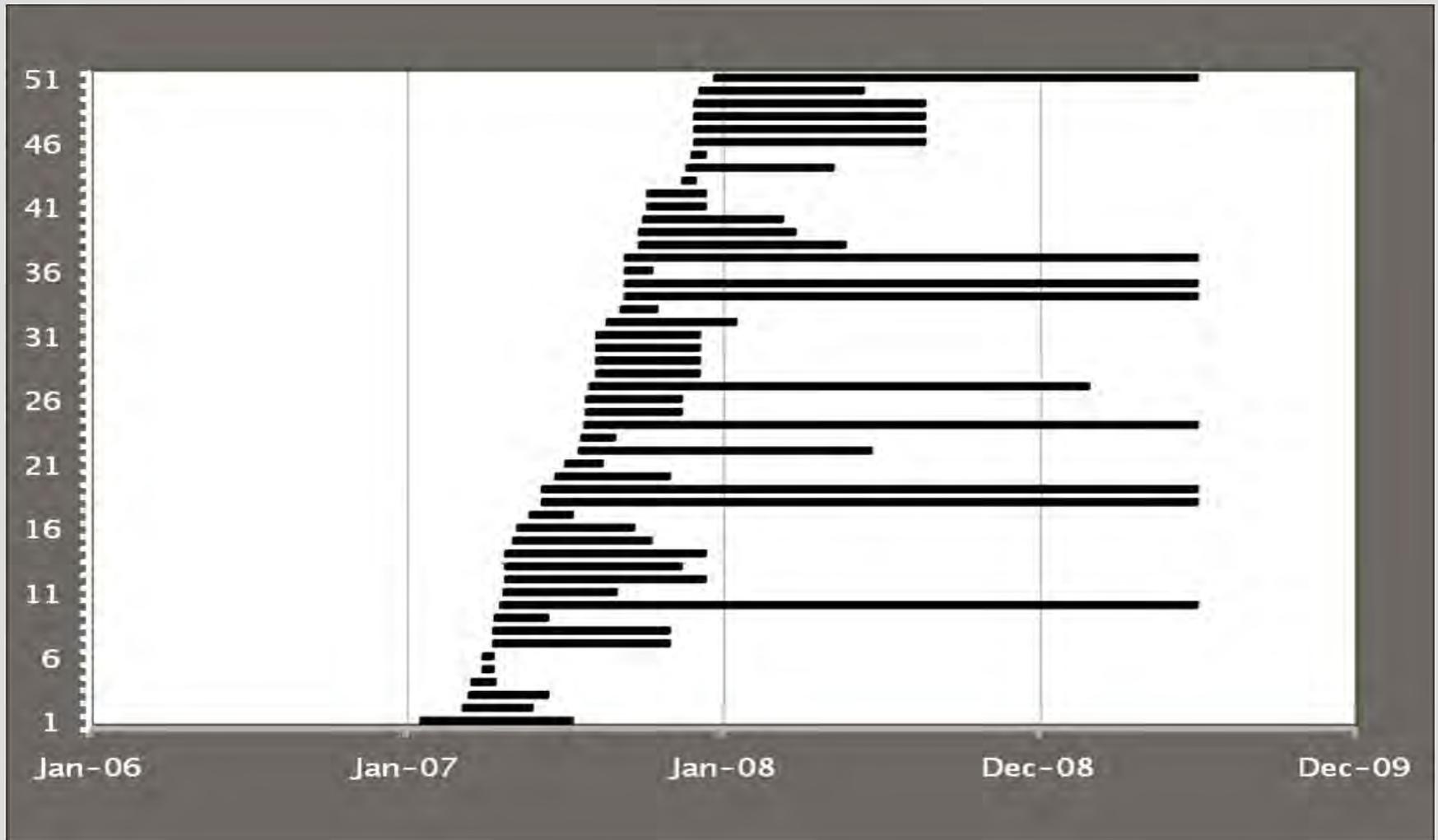
# Entry and Sorted Duration Patterns for All Children First Placed in 2006 Observed Through Dec. 31, 2011, Sample FCDA County



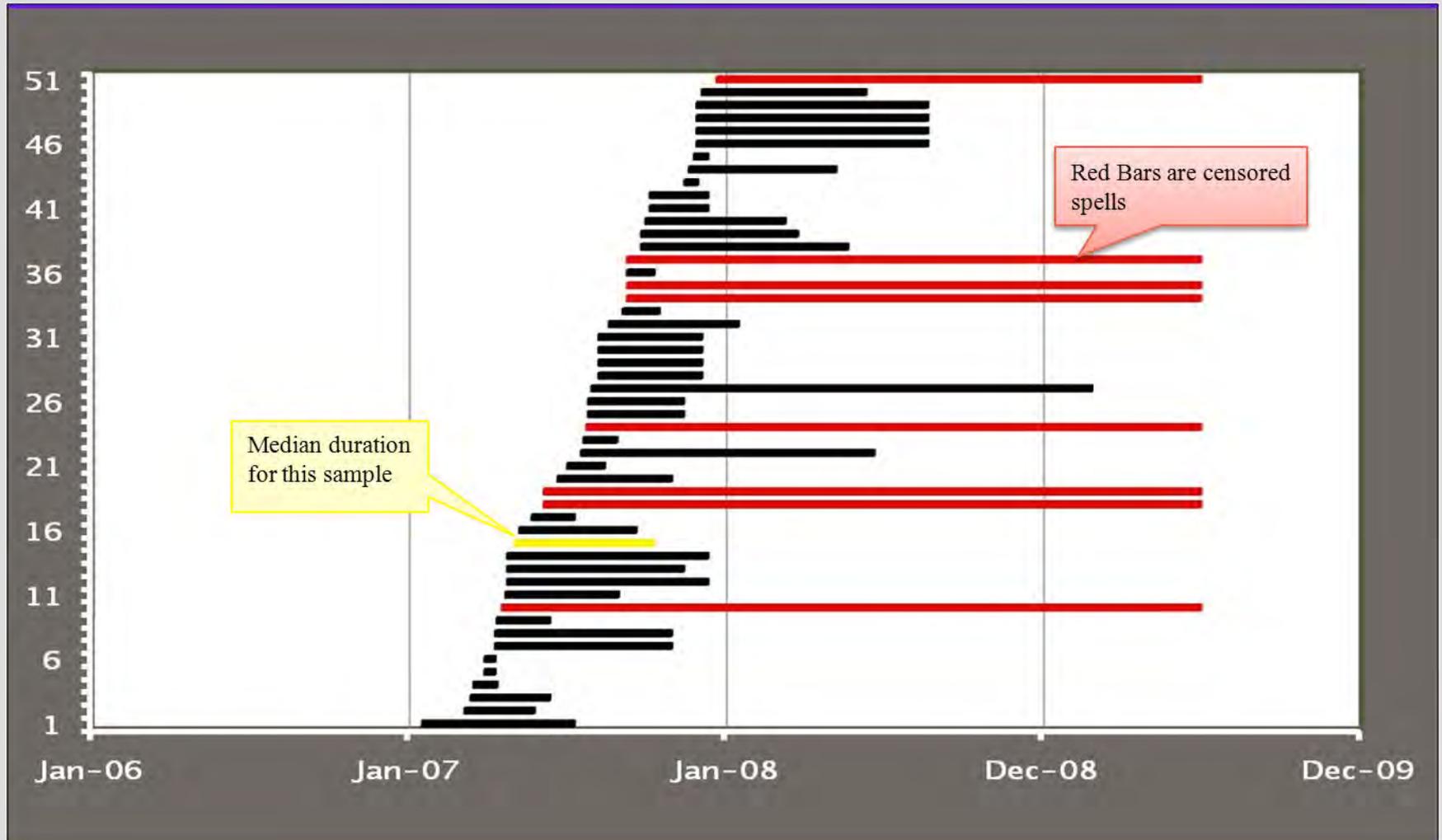
# Exit and Duration Patterns for All Children Exited in 2009 to Adoption, Sample FCDA County



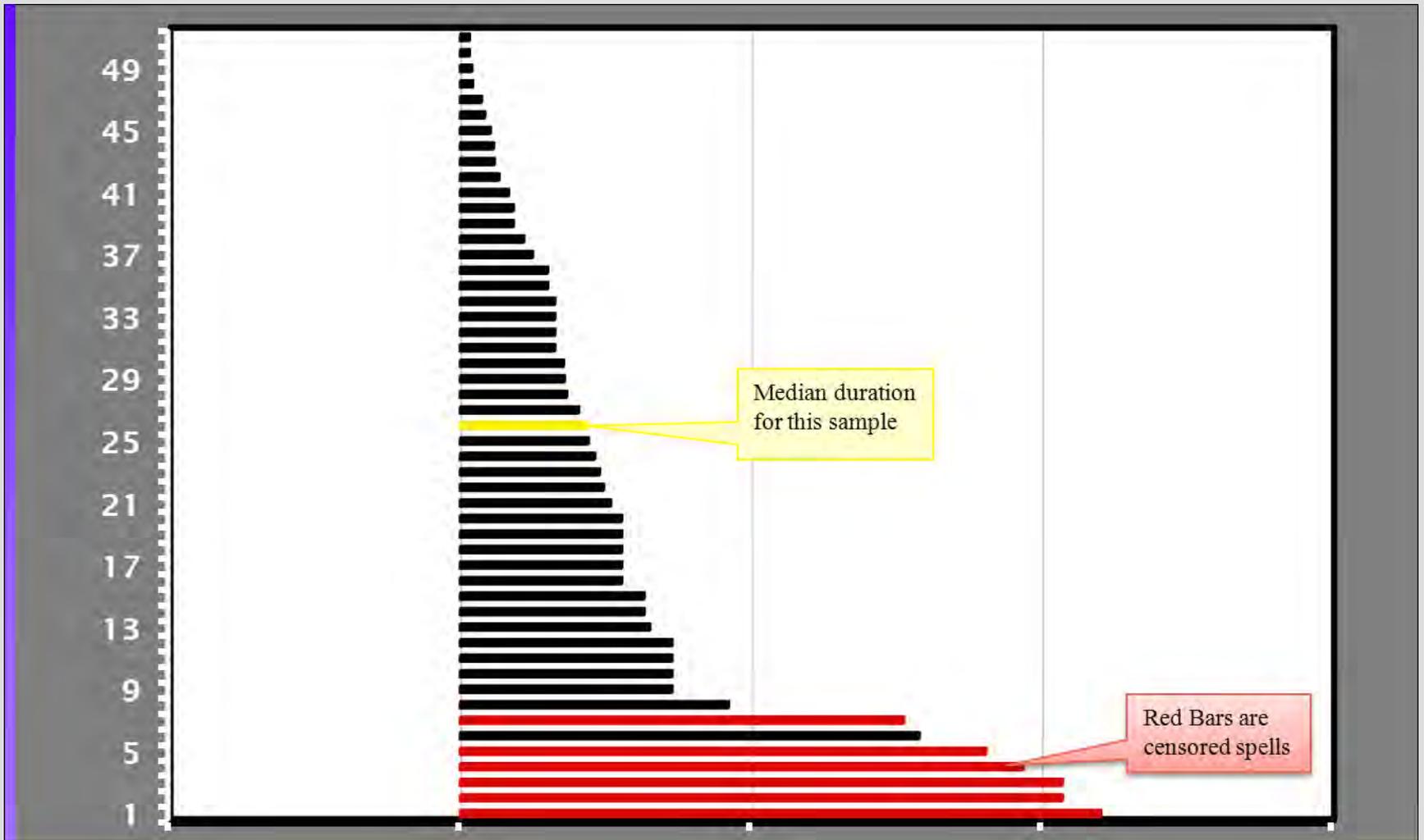
# Entry and Duration Patterns for All children Placed in 2007 Observed Through July 1, 2009, Sample FCDA County



# Entry and Duration Patterns for All children Placed in 2007 Observed Through July 1, 2009, Sample FCDA County



# Entry and Sorted Duration Patterns for All children Placed in 2007 Observed Through July 1, 2009, Sample FCDA County



# Survival Curve

---

- A survival curve is a statistical picture of the duration of a process (out-of-home care placement, period of preventive services receipt, disposition of abuse/neglect filing) in the form of the percentage “surviving” (still in the process) as time elapses. The median or 50<sup>th</sup> percentile is the mid-point of the survival curve.

# The Continuous Quality Improvement Process: Numerators and Denominators

---

At the Start of the  
Window:

Zero

Population for  
which you want  
to make  
improvement

*During window, the  
hoped-for result is to  
move members of the  
population into the  
numerator. Previous  
windows provide  
information about the  
baseline success rate.  
Goal is to increase  
success rate.*

At the End of the  
Window:

Successes

Population for which  
you tried to make  
improvement  
(successes + failures)

# Asking and Answering Questions

---

## 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 (children, dockets) I have right now take to be resolved?
- How do this (county, judge) and that (county, judge) compare on ...?
- Is the time to ... changing?

# Asking and Answering Questions

---

- It's the analyst's task to translate the non-analyst's question into an analytic question or questions, and then to write code to produce results.
- Sometimes, the non-analyst will try to ask the wrong analytic question. It's the analyst's task to confirm the underlying question and use the right analytic question.
- The best data files will be designed to shorten the time between asking and answering questions.
- Answers to common questions get standardized into reports.

# Asking and Answering Questions: Analyst's Task

---

Start with non-analyst's question or curiosity.  
Then, given what you know already about  
topic area:

- Pick a population type
- Pick a population(s)
- Write analytic question
- Refine as necessary

# Asking and Answering Questions Exercise

---

## Options for Question 2:

1. Is movement a problem in my county/state compared to other counties/states?
2. Are black children more or less likely to be adopted than children of other races?
3. How often do children who are initially placed under court supervision, without placement, end up in placement?
4. Does case worker turnover lengthen time to permanency?

# Fundamentals

---

1. Know your data. Define your box.
2. Know your question. Write it down.  
Measurement starts with a question.
3. Know the population being used to measure.  
Make sure the population matches the question.
4. Use an entry cohort to answer general questions about characteristics or outcomes.
5. The Window: Reform can only influence that which has yet to happen.

# 1. Know Your Data

---

- **Longitudinal File** A longitudinal file allows the study of populations over time. For example, in the foster care system, longitudinal file tracks children from the point they enter into care and follow their changes over the course of time until they exit from the care.
- **Spell (episode, period of service).** Spell records describe a period of interest and always have a start, stop and a variable indicating whether or not the period of service is still in progress. Spell records typically reflect a series of decisions about how to summarize events during the period.

# 1. Know Your Data, continued.

---

- **Censor Date** The end date of a longitudinal file. The date through which information is available.
- **Censored Observation or Spell** An observation or spell that is still in progress as of the end date of file. Both the final duration and final outcome of process are unknown.

### 3. Know the population being used to measure.

---

- When reading a table or chart in someone else's report, identify the population.
- Then, make sure you can formulate the question the data is answering. Then ask yourself, is it a meaningful question? Is it the question that the authors of the data intend to answer?

# Review populations

---

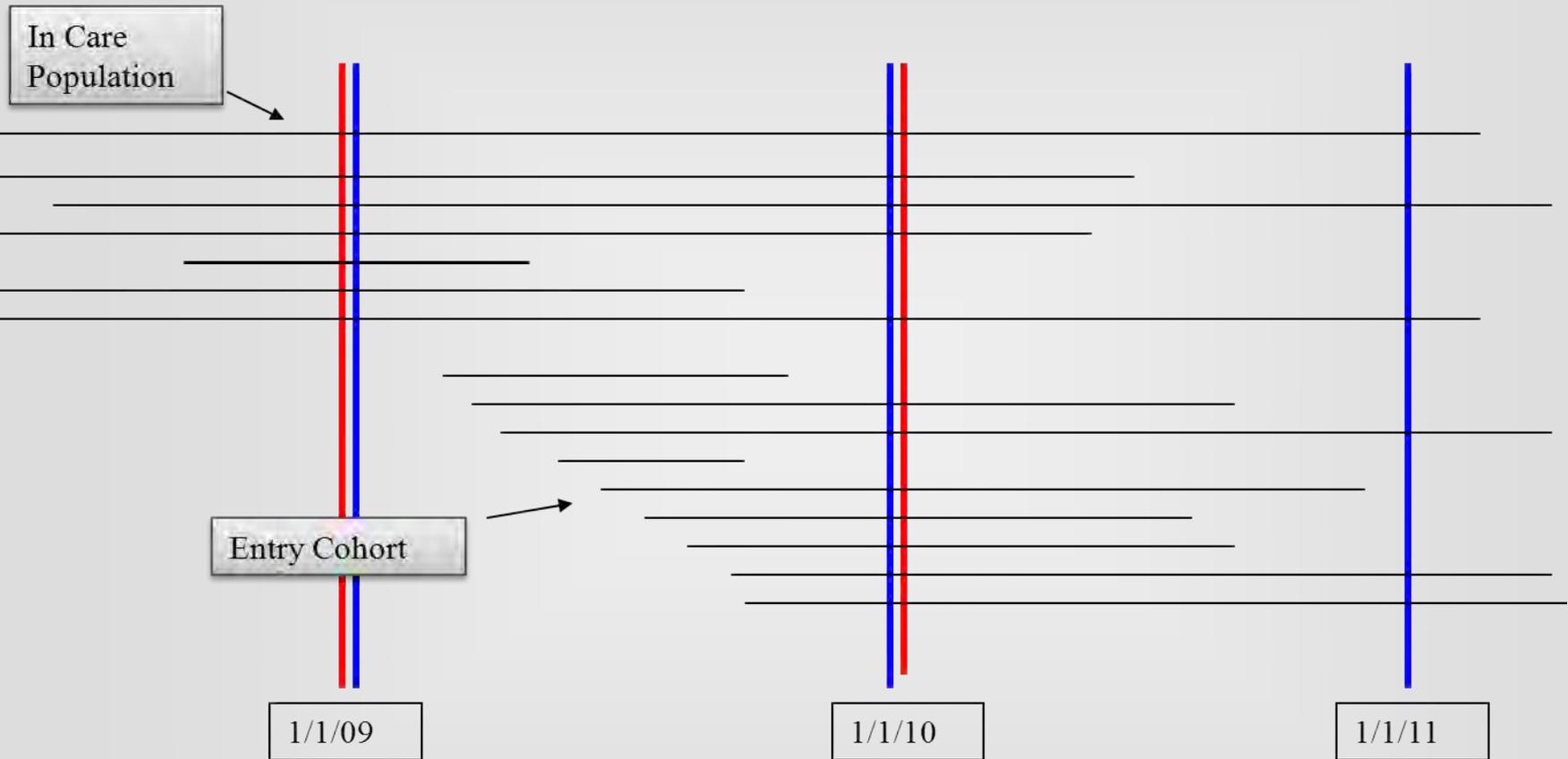
- Point-in-time - only children in care
- Exit cohort - only children who left care
- Entry cohort - all children who entered

} These two approaches depend on whether the child is still in care.

- By definition, these are very **different** samples.

# The Window: Reform can only influence that which has yet to happen.

---



The blue lines are calendar years.  
The red boundary is the first annual entry cohort.

# Something to consider

---

Why spend time trying to interpret a measure that doesn't measure what you're doing?

Put another way:

How does the time period covered by the measure line up with the time period where our action took place?

# If there's time...

---

- More “window” questions
- More formulating question practice.

# More “window” questions...

---

- Of all children entering foster care for the first time in during a given year, the percent who were discharged to reunification in less than 12 months from the date of the first entry into foster care. (change in time to reunification)
- Of all children in foster care the first of the year, the percent with a prescription for psychotropic medications. (change in the prevalence of children on these medications in the foster care population)

# More “window” questions...

---

- Of all children who exited foster care with a discharge reason of emancipation prior to their 18<sup>th</sup> birthday or who reached their 18<sup>th</sup> birthday while in foster care, the percent who were in foster care for three years or longer. (change in proportion of children who spend at least three years in foster care and exit to emancipation)