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FIXING THE STATISTICAL YARDSTICK THAT MEASURES STATE CHILD WELFARE PERFORMANCE

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Stories chronicling the inadequacies of state child welfare systems are routinely reported in our country's newspapers. Headlines about failures in Oregon, Wisconsin and Massachusetts are just the latest in a spate of tragedies that point to systems in crisis. In addition, the findings from the federal Children and Family Services Reviews (CFSR) showed that every state, along with the District of Columbia and Puerto Rico, fell short of the marks set by the federal government (Administration for Children and Families [ACF], 2004).

There is little denying that state child welfare systems are in need of reform. But there is an alternative storyline that is overlooked by most news media and federal overseers responsible for holding state systems accountable. The fact is that substantial improvement in child welfare performance has already occurred. More children are being adopted or placed with permanent guardians, fewer children are languishing in long-term foster care, and for the first time in years, public foster care caseloads are shrinking (ACF, 2006a, 2006b, 2006c, 2006d).

In April 2005, the *CQ Researcher* singled out Illinois as setting the "gold standard" for child welfare reform (Price, 2005). The size of the Illinois foster care program dropped from a peak of 52,000 children in 1997 to less than 17,000 in 2005, and child removal rates were cut in half. More than 45,000 foster children in the state were moved from long-term foster care into permanent homes with relatives, adoptive parents, or legal guardians. Median length of stay in foster care decreased from 45 to less than 24 months (Children and Family Research Center, 2006; Illinois Department of Children and Family Services, 2003). Despite this solid record of accomplishment, Illinois was put on the watch list of 16 states that flunked all seven national standards, based on the results of the CFSR.

This inconsistency illustrates that the federal evaluation of state child welfare services is seriously flawed. It is mainly due to the problem that the CFSR relies on state

data submitted to the federal Adoption and Foster Care Analysis and Reporting System (AFCARS), which is limited to cross-sectional snapshots of child welfare data at six-month intervals (Bishop, Grazian, McDonald, Testa, & Gatowski, 2002; Courtney, Needell, & Wulczyn, 2004). While this point-in-time method provides statistical descriptions that are far superior to the aggregate counts previously reported by the states, AFCARS inability to track children prospectively from foster care entry to exit seriously limits measurement and can severely distort the assessment of performance trends.

Then, can AFCARS be rescued? Are its flaws correctable, or should the program be scrapped before undergoing potentially costly corrections? Should we declare that AFCARS is unsalvageable and rebuild from the ground up rather than invest in fixing what some would argue is a hopelessly flawed data collection system?

Overview

This study addresses the issues around AFCARS by presenting the results of a year-long investigation by *Fostering Results* a public education campaign funded by the Pew Charitable Trusts through a grant to the Children and Family Research Center at the University of Illinois at Urbana-Champaign. *Fostering Results* is working in ten targeted states and at the national level with the Child Welfare League of America, the American Public Human Services Association and other child welfare organizations to educate key audiences about issues of federal financing, service innovation, program accountability and judicial oversight in child welfare.

In May 2004, the Pew Commission on Children in Foster Care issued its recommendations for restructuring the existing federal financing system to provide states with continuing, reliable funding while also giving them greater flexibility and requiring increased accountability. To improve accountability, the commission recommended that the CFSR make use of longitudinal data, rather than point-in-time data, to produce more complete and accurate assessments of state performance in child welfare service delivery (The Pew Commission on Children in Foster Care, 2004). Following up on this recommendation, *Fostering Results* tested special software programs developed at Hornsby Zeller Associates, Inc. to reconstruct partially longitudinal files from 6-month AFCARS submissions. The tests compared statistical analyses from these partially longitudinal files to analyses obtained from fully longitudinal data. The encouraging news is that the measurements are reasonably close to one another.

This study applies these special programming and analytical techniques to AFCARS data supplied by the *Fostering Results* partner states of Arizona, Illinois, Missouri, Ohio, and Wisconsin to generate alternative prospective measures of child welfare outcomes, which can substitute for the standard retrospective measures currently utilized in the CFSR. It discusses the advantages and disadvantages of alternative plans in addressing the needs for quality data on child and family outcomes.

AFCARS—A Reporting System Not a Tracking System

Calls for a mandatory data collection system to replace the old voluntary reporting system that the U.S. Department of Health, Education and Welfare had abandoned in 1971 led Congress to pass legislation in 1986 that instructed the Secretary of Health and Human Services (HHS) to establish an Advisory Committee to study "the various methods of establishing, administering, and financing a system for the collection of data with respect to adoption and foster care in the United States." The Committee recommended the implementation of a mandatory system that collected individual child-level, case information from the states. Consultants to the Committee had recommended a longitudinal set-up that tracked children's progress from point of entry into and exit out of foster care. But the Committee favored a traditional cross-sectional design, stating that child-level data was to be used for "conducting program and policy analyses and generating reports, and not be used for tracking individual children" (Administration for Children, Youth, and Families, 1987).

When HHS subsequently issued AFCARS regulations in 1993, it patterned the reporting and analysis system after the point-in-time collection procedures commonly used in census taking and polling at the time. To maintain client confidentiality, states were given the option of either assigning sequential numbers to case data or encrypting case identifiers to preclude the release of information about identifiable individuals at the federal level. Little attention was paid to the importance of linking case-level data across reporting periods, which some officials perceived as violating the prohibition against tracking.[1]

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[1] The perceived prohibition against tracking gradually changed over time. The HHS official who staffed the 1986 Advisory Committee later extolled the merits of encryption "since it facilitates the analysis of data, as an encrypted number can be used to follow a particular case over time across a sequence of AFCARS 6-month reporting periods" (Collins, 1999). He correctly noted that encryption allows for longitudinal analysis while protecting the child's identity. But he admitted that it remained to be seen the extent to which failing to require a unique encrypted identifier would restrict the longitudinal analysis of AFCARS data.

As long as AFCARS could generate point-in-time case counts and retrospectively report the number of foster care entries and exits for simulating case flow dynamics, officials saw little need at the time for tracking case progress prospectively from date of entry to date of exit.

The shortsightedness of this view eventually came to light after Congress mandated HHS in 1997 to develop a set of outcome measures that could be used to assess the performance of states in operating child protection and child welfare systems. Saddled with a data collection system that allowed only point-in-time description and retrospective reporting of outcomes, HHS did its best to make do with the available data. The Department promulgated a set of indicators that were based mostly on cases that had either exited the foster care system or else remained active at the end of the reporting period.

Entry Cohorts, Exit Cohorts, and Cross-Sectional Snapshots

The major problem with HHS' quick-fix is that it throws away important chunks of information. Not only are children discharged from care unlikely to be representative of all children who enter foster care, but statistical snapshots of active cases are slanted toward the experiences of children with the least satisfactory outcomes. Generalizability is sacrificed, measurement is truncated, and selected samples of data can seriously distort the assessment of trends and performance.

The problem can be illustrated with the three samples of data that are generated by the stocks and flows of cases in and out of foster care: 1) *cross-sectional snapshots* of active foster care cases (stocks), 2) *exit cohorts* of children discharged from foster care (outflow), and 3) *entry cohorts* of children coming into foster care (inflow). Figure 1 graphs the annual caseload changes that are produced by these case flow dynamics for selected states using linked 6-month AFCARS files. The cross-sectional snapshots of children in foster care at the end of a quarter (EOQ) are the result of the count of children in care at the start of the quarter (SOQ) plus the number of children who enter care (EN) minus the number of children who exit care (EX). Mathematically, $EOQ = SOQ + EN - EX$. As illustrated in the graphs, the end-of-quarter caseload rises when the number of entries into foster care exceeds the number of exits from the system and declines when the number of exits exceeds the number of entries.
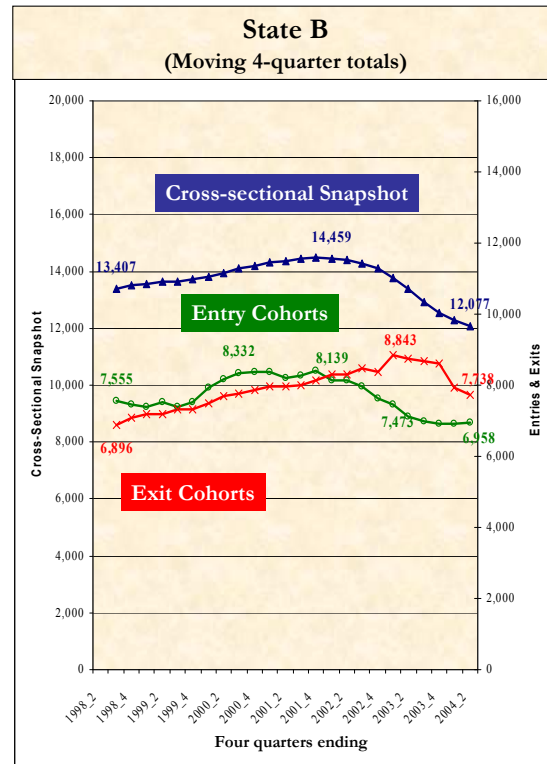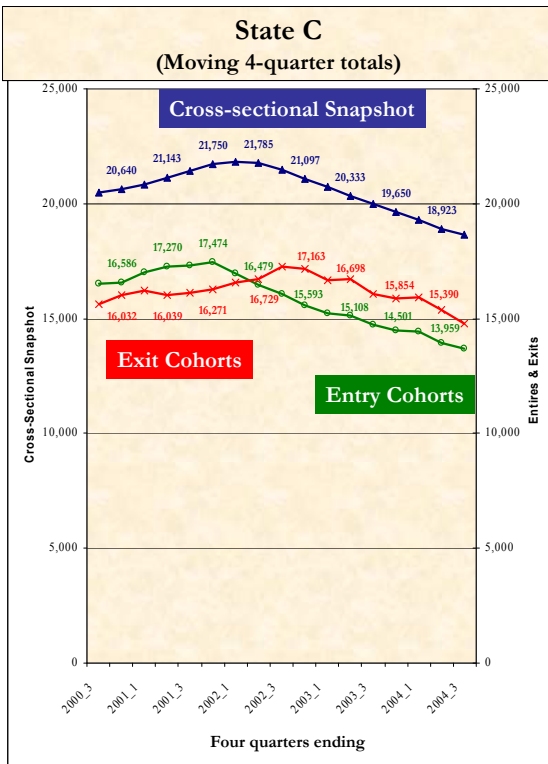
State A
(Moving 4-quarter totals)

Cross-Sectional Snapshot

Entries & Exits

Cross-sectional Snapshot

8,303   7,658   6,942

Exit Cohorts

3,255   3,247   3,417   3,236

2,804   2,743   3,031

Entry Cohorts

1999_3 2000_1 2000_3 2001_1 2001_3 2002_1 2002_3 2003_1

Four quarters ending

State D
(Moving 4-quarter totals)

Cross-sectional Snapshot

23,673
22,106
21,402
19,939 19,911
18,707

Cross-Sectional Snapshot

Entries & Exits

Entry Cohorts

10,628   11,340   11,776   12,024   13,335

10,941   11,394   11,027

8,495   10,181

Exit Cohorts

2000_3 2001_1 2001_3 2002_1 2002_3 2003_1 2003_3 2004_1 2004_3

Four quarters ending

State C
(Moving 4-quarter totals)

Cross-sectional Snapshot

21,750 21,785
21,143   21,097
20,640   20,333
                               19,650
                                    18,923

Cross-Sectional Snapshot

Entries & Exits

17,270 17,474
16,586   16,479 17,163
                           16,698
16,032 16,039 16,271 15,593 15,854 15,390
                16,729 15,108 14,501 13,959

Exit Cohorts

Entry Cohorts

2000_3 2001_1 2001_3 2002_1 2002_3 2003_1 2003_3 2004_1 2004_3

Four quarters ending

State B
(Moving 4-quarter totals)

Cross-sectional Snapshot

14,459

13,407   12,077

Cross-Sectional Snapshot

Entries & Exits

Entry Cohorts

8,332   8,139   8,843

7,555   7,473   7,138

6,896   6,958

Exit Cohorts

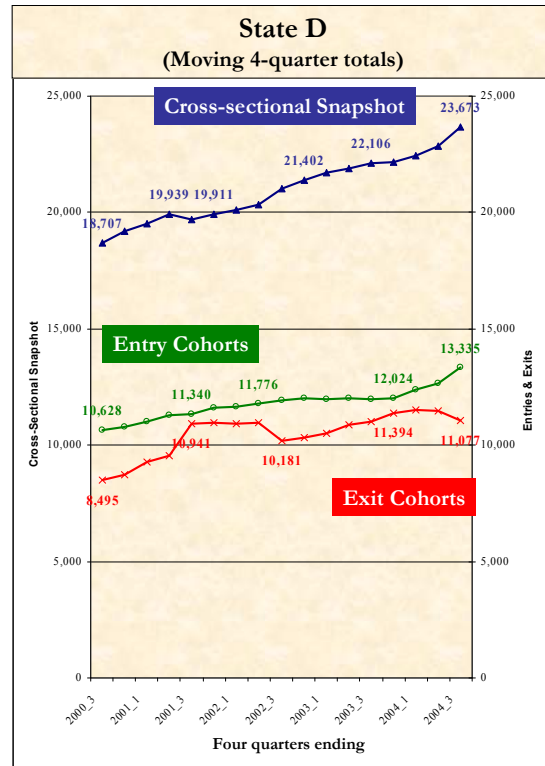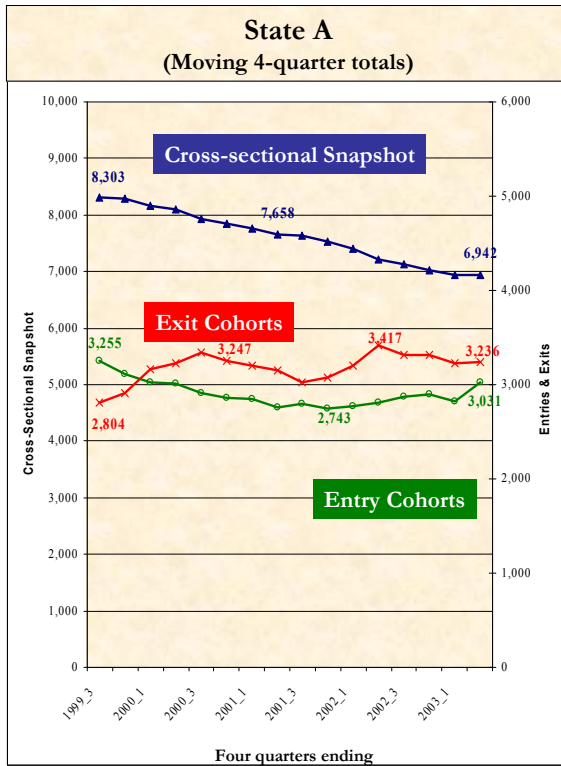1998_2 1998_4 1999_2 1999_4 2000_2 2000_4 2001_2 2001_4 2002_2 2002_4 2003_2 2003_4 2004_2

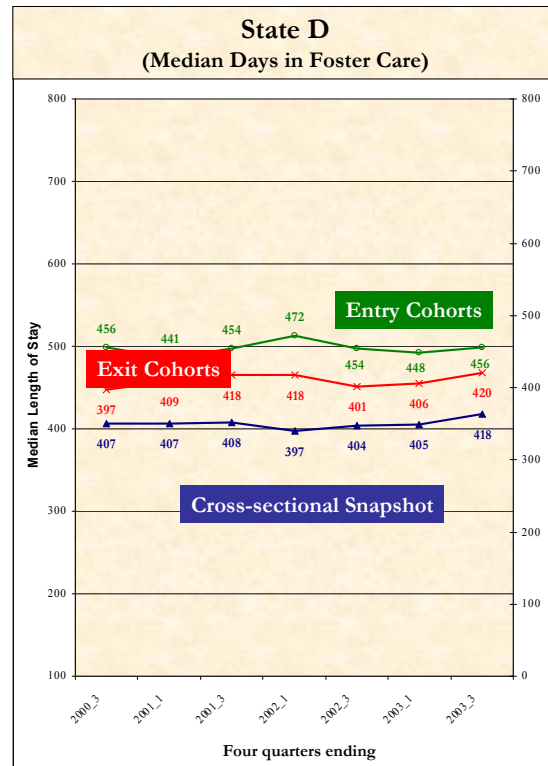Four quarters ending

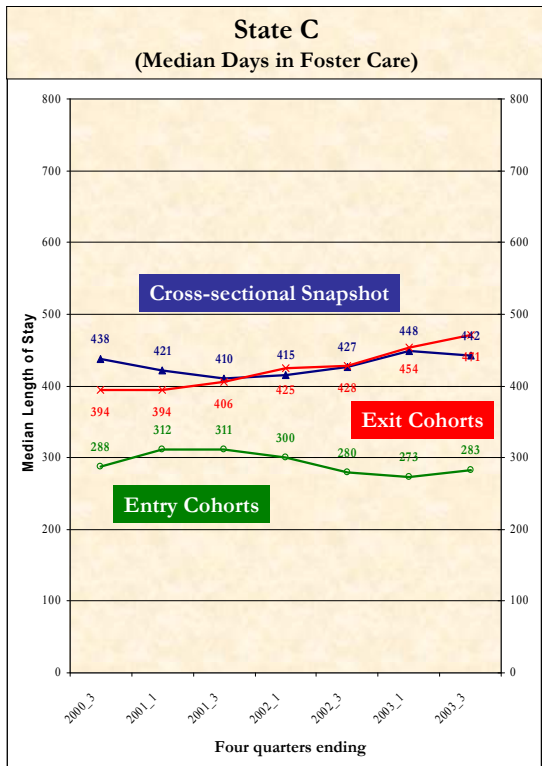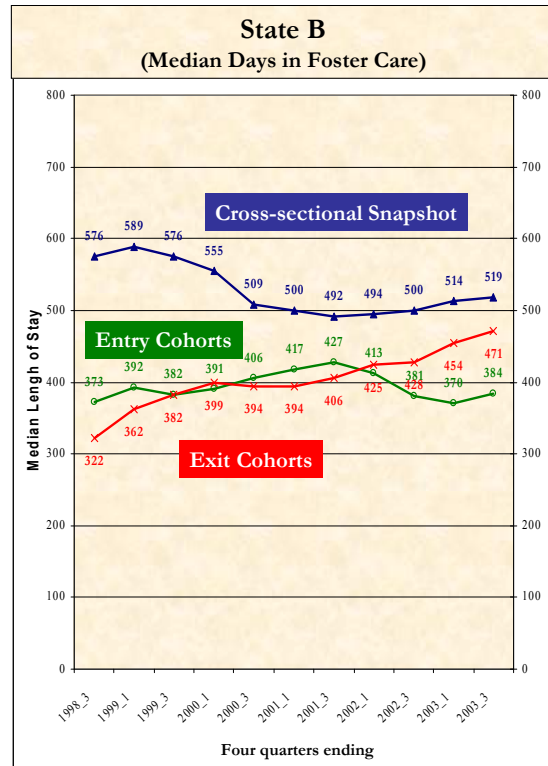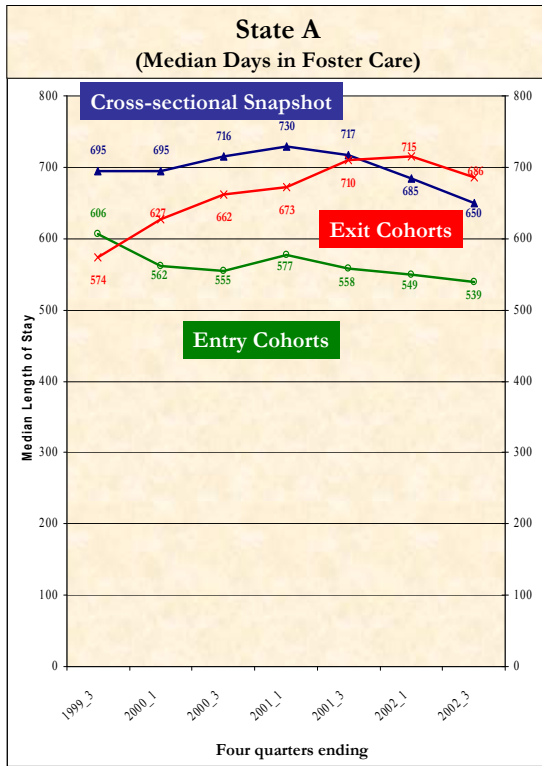**Figure 1**.—Components of Caseload Change

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Figure 2.— Alternative Measures of Median Length of Stay

Statistics calculated from the three samples of AFCARS data turn out to be very sensitive to the kinds of cases that are retained or dropped as a result of caseload dynamics. So for example, the cross-sectional EOQ sample includes the backlog of SOQ cases that have not exited foster care but omits the cases that have left the system. As a result, EOQ statistics tend to be biased toward the experiences of children with the least satisfactory permanency outcomes.

This is illustrated in Figure 2 that charts the three different ways of calculating median length of stay from cross-sectional EOQ data, entry cohorts, and exit cohorts. The median length of stay statistics calculated from the cross-sectional EOQ snapshots measure the cumulative amount of time that one-half of the children have spent in foster care as of the end of the reporting quarter. In three of the four states, the cross-sectional calculation tends to yield the longest of the three alternatives measure of median length of stay. This is because timely exits to permanence are overlooked by point-in-time calculations. While this is also true in State D, the state's median EOQ time in care is biased downward by the excess of entrants over exits from foster care during this period (see Figure 1). Shorter times of children just beginning care are counted while longer times of children just leaving care are excluded.

Looking only at the children exiting care doesn't solve the problem. The calculations for exit cohorts in Figure 2 measure the cumulative amount of time that one-half of the children have spent at the point of discharge. In three of the four states, these statistics suggest rising lengths of stay in foster care. But these impressions are largely an artifact of the drive these and other states undertook in the late 1990s to discharge children from long-term care to adoption and guardianship. Counting only exits in these states inflates the median time that children are estimated to spend in care.

The solution is to track the time all children spend in care. This is best done on the samples of children entering care. Only calculations done on entry cohorts into foster care capture the experiences of all children and yield valid estimates of the amount of time children are expected to stay in care. As illustrated in Figure 2, clocking the cumulative length of time that one-half of the children spend in care before discharge shows that length of stay has remained level or declined in these selected states. This correct trend is easily missed by alternative calculations of median time that AFCARS is able to produce. AFCARS inability to track children prospectively across reporting periods means that

only the cross-sectional and exit calculations can be done for the federal CFSR process, which as shown in Figure 2 often gives misleading or contradictory results.

Truncated, Censored and Selected Data

The problem with the statistics generated from cross-sectional samples and exit cohorts is best understood as a problem of incomplete information. Calculations of most statistics on case processes and outcomes grapple with one or more of the following types of incomplete data:

1) *Truncated* data in which the occurrence of an event of interest is inexactly observed. All that is known about the times to the event is that it is less than (left truncated) or greater than (right truncated) a specific date or in between two dates (interval truncated data).
2) *Censored* data in which the occurrence of an event of interest is incompletely observed for a sample of cases. All that is known about the times to the event is that it is greater than the cumulative time the cases have been observed.
3) *Selected* data in which the occurrence of an event of interest is observed but only for the sample of children experiencing the event. Although the times to the event are known, it is unknown how fully representative these times are of the experiences of all children.

Two kinds of statistical errors should be avoided when measuring case processes and outcomes: 1) treating truncated or censored data as if they were *uncensored*, that is, as if the time to an event of interest were known exactly, and 2) treating selected data as if they were fully representative of the complete sample of cases. As illustrated above for median length of stay, large biases can be introduced into measurement when selected data on exit cohorts are treated as if they were fully representative of all cases or when truncated data for cross-sectional snapshots are treated as though they were uncensored. Calculating median length of stay for entry cohorts solves the selection problem but still leaves open the problem of what to do about censored data for entry cohorts.

Fortunately, a corpus of statistical methods originally developed for engineering and medical applications to describe mechanical or biological systems can readily be applied to model incomplete case processes and outcomes in child welfare. Known variously as survival, failure-time, or event-history analysis, these methods track the progress of cases prospectively from some origination time, for example date of case

opening, to the date of occurrence of some event, such as reunification or adoption. In the calculation of median length of stay, for example, individual times from case opening are clocked until one-half of the entry cohort are observed to exit from foster care. The discharge time at the 50th percentile fixes the median time that entering children spend in foster care. Alternatively, discharge times at the 25th or 75th percentile can be calculated, or the proportion discharged from care at one, two or three years after entry can also be computed.[2]

The same methods for computing median length of stay can be applied to entry cohorts, with some qualifications noted below, to measure times to reunification and adoption. When the trend lines for these prospective measures are charted, the results can sometimes run opposite to the conclusions that are drawn from the retrospective measures currently in use for the CFSR.

Time to Reunification

The national standard relies on exit cohorts of children reunified within the preceding year. It looks back at how long cases were active prior to reunification. A state passes this standard if 76.2 percent or more children reunified with parents are reunified within 12 months of their latest removal from the home. Figure 3 compares this retrospective measure to an alternative prospective measure that tracks forward the proportion of children reunified within one year from the date of removal.

The two measures can give very different readings on system performance. For example in State A, the retrospective measure shows that the state was falling farther below the national standard from 48.7% in the 3rd quarter of 2000 to 36.9% in the 3rd quarter of 2002 before rebounding back to 45.8% at the end of the last reporting period. Conversely, the prospective measure shows uneven but gradual improvement in the proportion reunified within a year from 21.8% to 23.6%. State D illustrates an even more striking disparity. The retrospective measure suggests little change, while the prospective measure shows an increasing proportion of children being reunified each year.

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[2] Some defenders of the exiting standards have portrayed the necessity of tracking entry cohorts as though it were a limitation. But just because an entry cohort must be followed for two years to determine the proportion discharged within 24 months doesn't mean that the information on children entering two years earlier is any less timely than the information on children discharged within the last year. Both are equally as current as of the date of last reporting. The difference is that an entry cohort constitutes a well-defined sample with known time referents, while the exit cohort is a hodgepodge of selected cases originating in different periods.

The reason for the different views is that the national standard selectively includes only reunified children in the comparison, while the alternative prospective measure tracks the experiences of all children entering foster care. Selectively dropping observations from annual comparisons can distort performance trends and give misleading signals to administrators. Under certain circumstances, it could potentially reward bad practice. For example, counties in a state that curtailed reunification efforts after children had been in care in excess of 12 months would always look better than counties that continued to reunify children after a year's time. It is doubtful that federal monitors would want to see states achieve compliance with the reunification standard in this way.
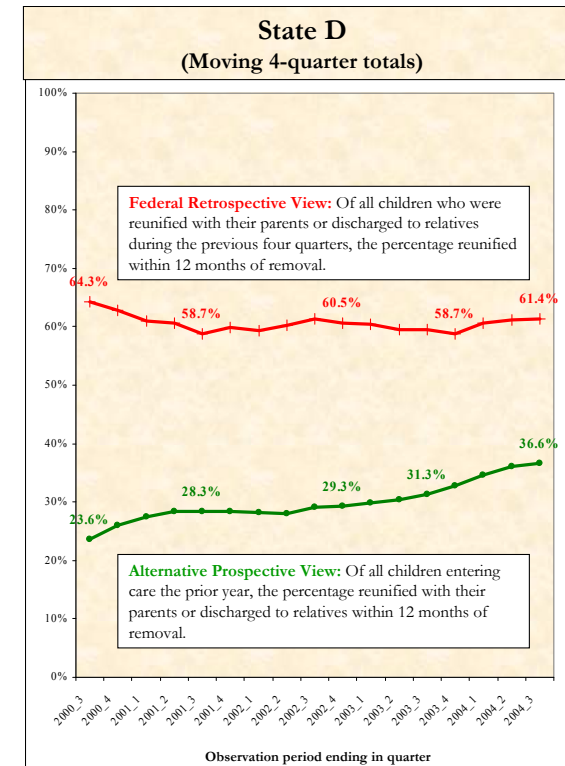
State A
(Moving 4-quarter totals)

Federal Retrospective View: Of all children who were reunified with their parents or discharged to relatives during the previous four quarters, the percentage reunified within 12 months of removal.

48.7%   44.3%   36.9%   45.8%

21.8%   20.6%   23.3%   23.6%

Alternative Prospective View: Of all children entering care the prior year, the percentage reunified with their parents or discharged to relatives within 12 months of removal.

Observation period ending in quarter

State B
(Moving 4-quarter totals)

Federal Retrospective View: Of all children who were reunified with their parents or discharged to relatives during the previous four quarters, the percentage reunified within 12 months of removal.

65.7%   68.9%   67.4%   61.6%   65.8%

39.6%   37.1%   33.6%   36.9%   38.2%

Alternative Prospective View: Of all children entering care the prior year, the percentage reunified with their parents or discharged to relatives within 12 months of removal.

Observation period ending in quarter

State C
(Moving 4-quarter totals)

Federal Retrospective View: Of all children who were reunified with their parents or discharged to relatives during the previous four quarters, the percentage reunified within 12 months of removal.

75.7%   73.4%   72.7%

47.9%   47.7%   50.7%   49.2%

Alternative Prospective View: Of all children entering care the prior year, the percentage reunified with their parents or discharged to relatives within 12 months of removal.

Observation period ending in quarter

State D
(Moving 4-quarter totals)

Federal Retrospective View: Of all children who were reunified with their parents or discharged to relatives during the previous four quarters, the percentage reunified within 12 months of removal.

64.3%   58.7%   60.5%   58.7%   61.4%

23.6%   28.3%   29.3%   31.3%   36.6%

Alternative Prospective View: Of all children entering care the prior year, the percentage reunified with their parents or discharged to relatives within 12 months of removal.
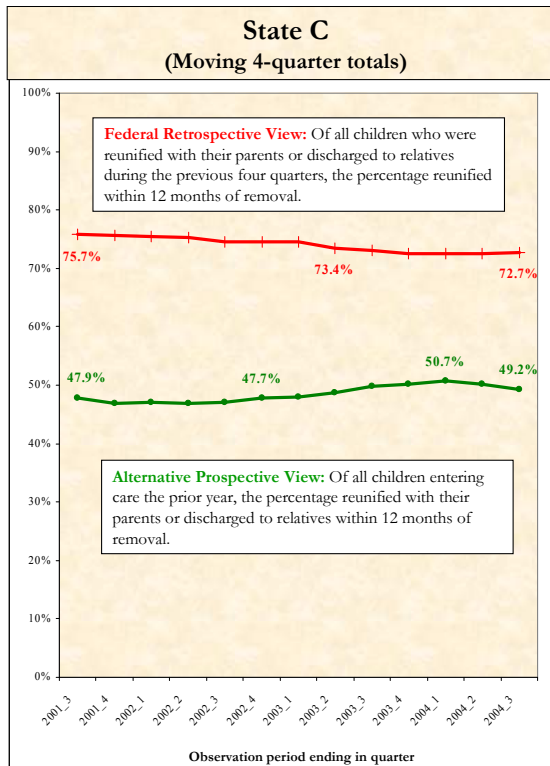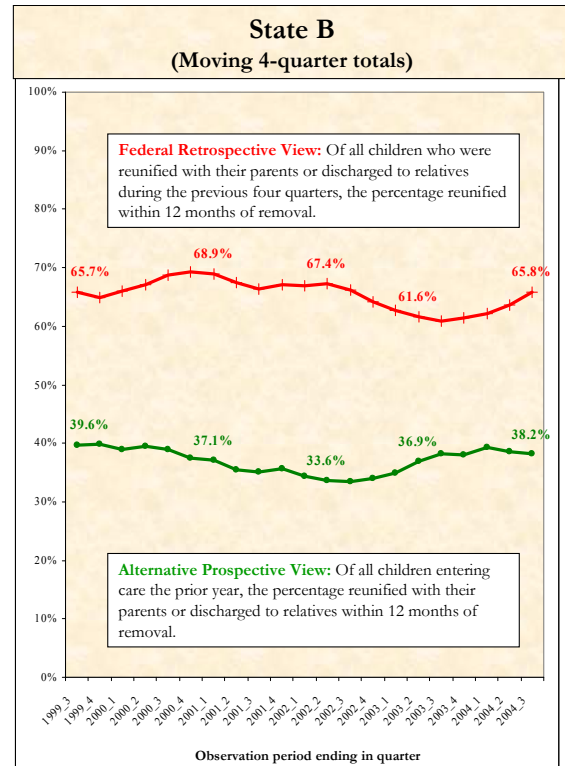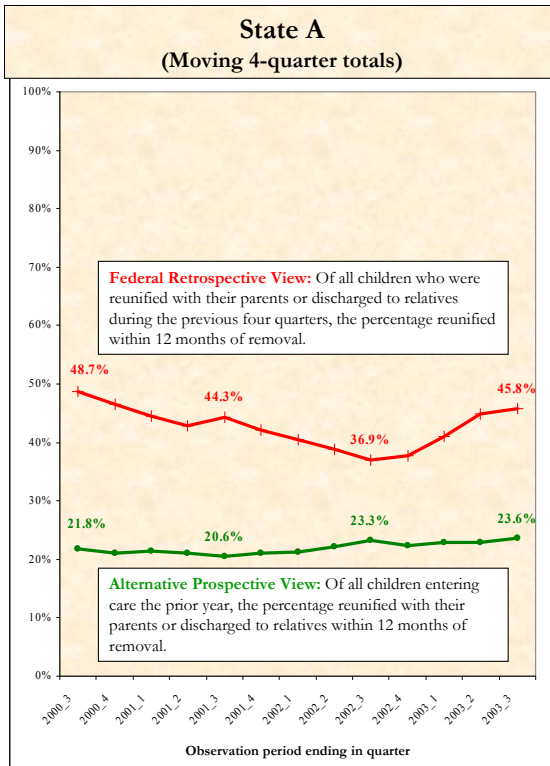
Observation period ending in quarter

Figure 3.—Retrospective and Prospective Measures of Time to Reunification

Time to Adoption

The same problem arises with the national adoption standard. A state passes if 32 percent or more of the children adopted from foster care are adopted within 24 months of their latest removal. Figure 4 compares this retrospective measure to an alternative prospective measure that tracks forward the proportion of children adopted within two years from the date of removal. Although the trend lines don't diverge as much as time to reunification, the retrospective measure is far more volatile than the prospective measure. Moving 4-quarter totals only slightly smooth out the jerky quarter-to-quarter changes in the proportions of adoptions that were finalized within 24 months of removal. Administrators guided by the CFSR retrospective measure could easily be misled into making abrupt adjustments in trying to steer the system back on course. The prospective measure provides more reliable and useful feedback.

Despite the lesser volatility, the prospective measure of adoption is not without its own drawbacks. The reason that the proportions adopted within 24 months tend to be low is because the measure's denominator includes the large fraction of reunified children who don't have much of a chance of making it into the numerator. These reunification "drop-outs" are treated the same in computing survival statistics as the censored observations of children still waiting to be adopted. Although having a large number of reunifications in the denominator doesn't matter much for descriptive statistics, it can play havoc with estimates of analytical parameters, for example, the effect of age on adoption rates, if the characteristics of reunified children differ systematically from those of adopted and waiting children. Reunified children typically look different, so the assumption can not be made that they are a "random subset" of all children entering care.

A better approach is to narrow the denominator to the subset of children who are truly eligible for adoption. This could mean fixing the origination date for calculating times to adoption at the date a child's permanency goal changed from reunification or the date parental rights were terminated. This would clear out reunifications from the denominator, but the drawback is that other potentially adoptable children whose reunification goal has not yet been changed or parental rights terminated would also be omitted. A compromise is to build on the Adoption and Safe Families Act (AFSA) requirement that states pursue termination of parental rights for all children who have been in foster care for 15 out of the last 22 months. All waiting children would then be tracked prospectively to calculate the proportion adopted within 12 months after reaching
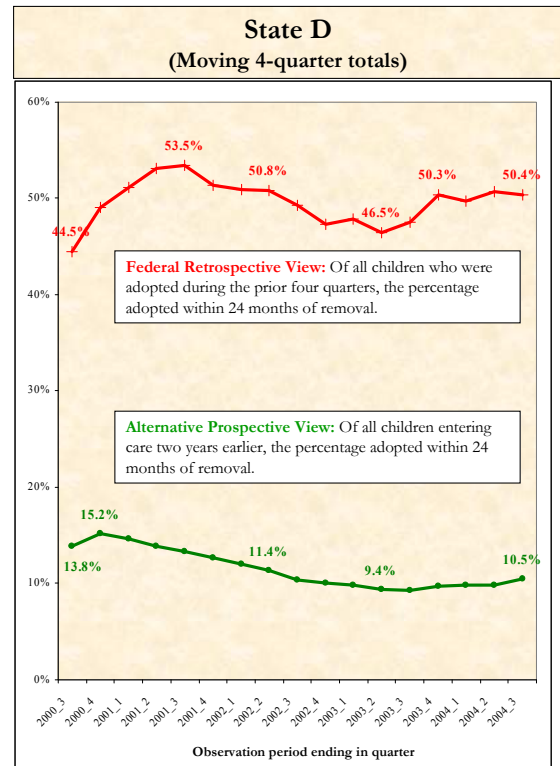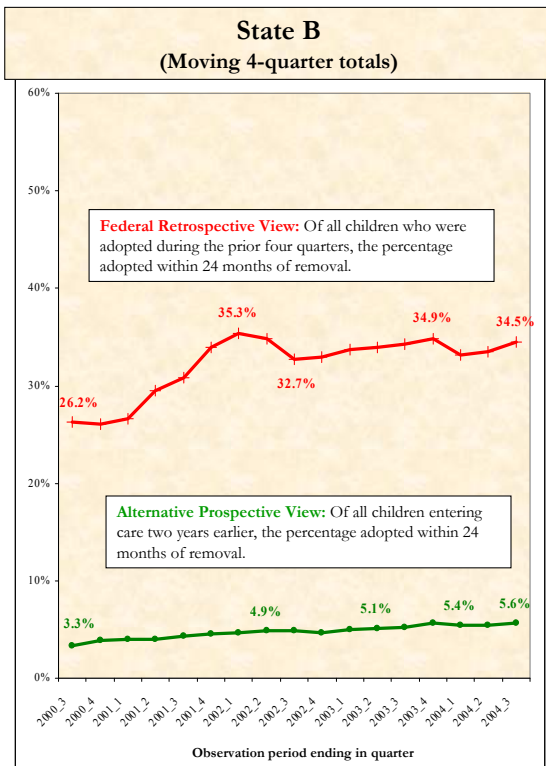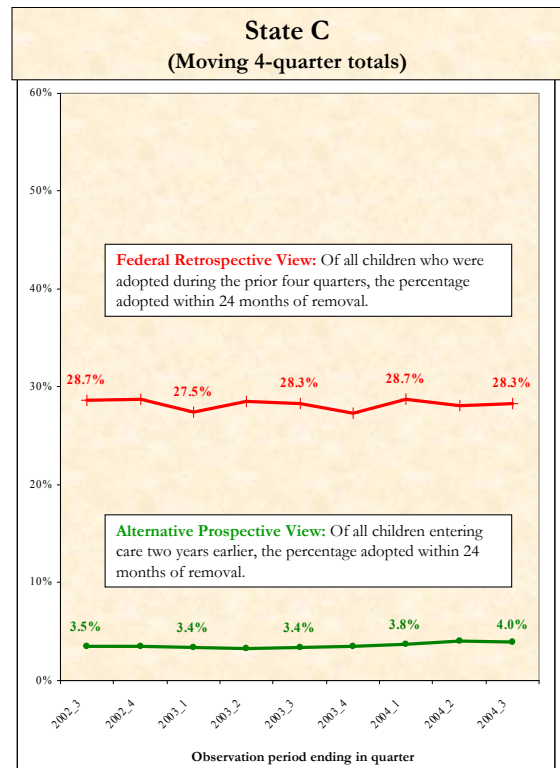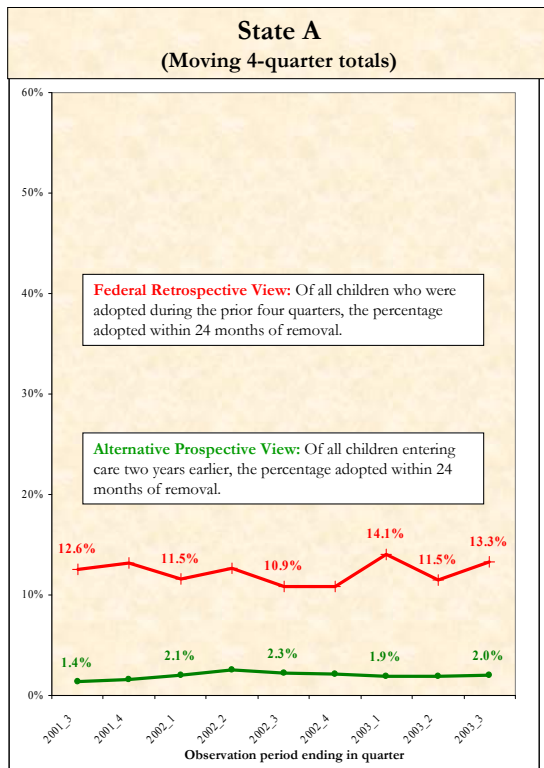
State A
(Moving 4-quarter totals)

Federal Retrospective View: Of all children who were adopted during the prior four quarters, the percentage adopted within 24 months of removal.

Alternative Prospective View: Of all children entering care two years earlier, the percentage adopted within 24 months of removal.

12.6% 11.5% 10.9% 14.1% 11.5% 13.3%

1.4% 2.1% 2.3% 1.9% 2.0%

Observation period ending in quarter

State C
(Moving 4-quarter totals)

Federal Retrospective View: Of all children who were adopted during the prior four quarters, the percentage adopted within 24 months of removal.

28.7% 27.5% 28.3% 28.7% 28.3%

Alternative Prospective View: Of all children entering care two years earlier, the percentage adopted within 24 months of removal.

3.5% 3.4% 3.4% 3.8% 4.0%

Observation period ending in quarter

State B
(Moving 4-quarter totals)

Federal Retrospective View: Of all children who were adopted during the prior four quarters, the percentage adopted within 24 months of removal.

35.3% 34.9% 34.5%

26.2% 32.7%

Alternative Prospective View: Of all children entering care two years earlier, the percentage adopted within 24 months of removal.

3.3% 4.9% 5.1% 5.4% 5.6%

Observation period ending in quarter

State D
(Moving 4-quarter totals)

53.5% 50.8% 50.3% 50.4%

44.5% 46.5%

Federal Retrospective View: Of all children who were adopted during the prior four quarters, the percentage adopted within 24 months of removal.

Alternative Prospective View: Of all children entering care two years earlier, the percentage adopted within 24 months of removal.

15.2% 11.4% 10.5%

13.8% 9.4%

Observation period ending in quarter

Figure 4.—Retrospective and Prospective Measures of Time to Adoption

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this milestone. The new data measures to be used in the second round of the CFSR accommodate this to some extent, including the indicators that calculate the proportion of adopted and legally freed children out of all children who have been in foster care for 17 continuous months or longer as of the first day of the reporting period.

Permanency Types or Permanency Outcomes

Tracking time prospectively from removal date to reunification or from the 15-out-of-22-month milestone to adoption would be an improvement over the retrospective measures currently used in the CFSR. However, establishing national performance standards for these measures would still necessitate choosing some benchmark for gauging performance. Should State C's 49.2% reunified within 12 months be judged superior to State D's 36.6%, or State D's 15.2% adopted within 24 months be favored over State C's 4%? The difficulty with choosing a single national standard is that these measures are very sensitive to state-specific removal practices, protective custody policies, and a myriad of factors that bring children to the attention of child protective authorities.

Researchers at the Children and Family Research Center correlated state removal rates, i.e. children taken into foster care per 1000 child population, with state deviations from the national reunification standard. States with removal rates closer to the national standard tended to exhibit higher removal rates than states farther below the standard, which tended to exhibit lower removal rates. The researchers surmised that states with higher rates of removal bring more children who are easily reunified into care, while states with lower rates may remove children who have the least prospects of remaining safely in their homes. This suggests that low-removal states like State D and Illinois may have difficulty reaching the higher levels of reunification that are achievable by states that remove a larger proportion of children from their homes.

Instead of establishing national standards specific to permanency types, such as reunification and adoption, it may be preferable to establish more generic standards such as the percentage achieving any permanency outcome within 24 months. This would permit low removal states to hit the permanency mark by discharging more children to adoption and other permanent living arrangements and high removal states to accomplish the same through reunifications. It would also solve the problem of where to count legal guardianships, which are sometimes counted under reunifications if relatives are involved and sometimes under guardianships.
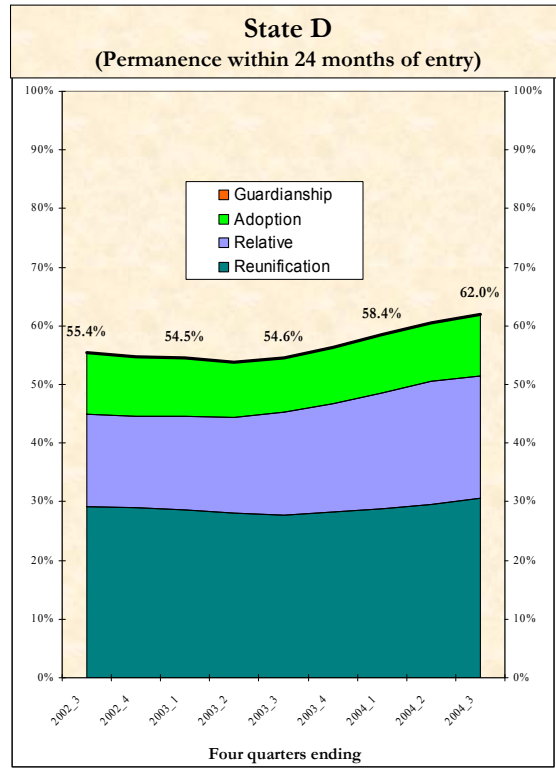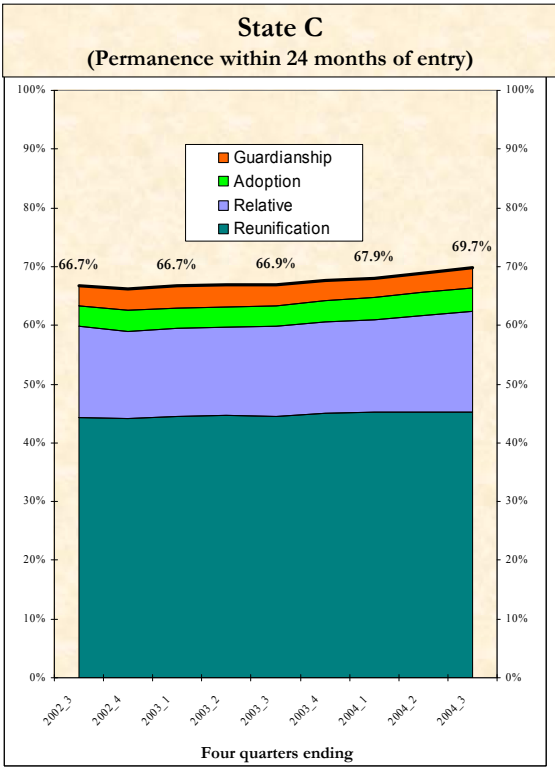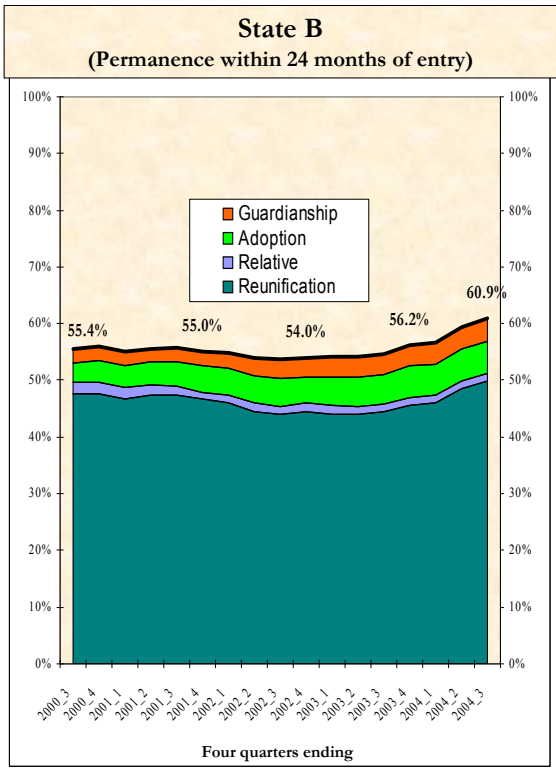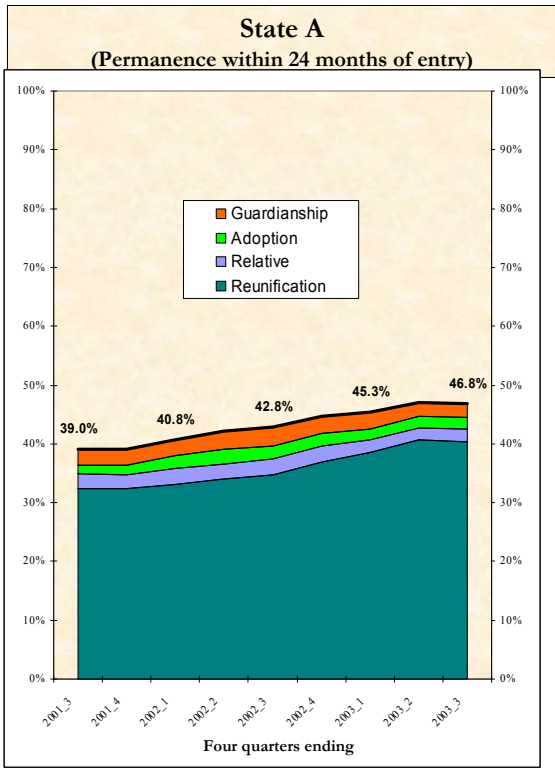
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Figure 5.—Percentage Attaining Permanence Within 24 Months of Entry

Figure 5 illustrates this alternative way of gauging permanency progress. Focusing on all permanency outcomes first of all narrows the variance among these states. State B and State D are within earshot of each other hitting 60.9% and 62.0%, respectively, within 24 months of cases entering (two years earlier). State D accomplishes this by discharging a larger proportion to adoption or to live with relatives (which AFCARS currently classifies as reunification). State B reaches its level by discharging a larger proportion to live with parents and by boosting legal guardianships (which AFCARS omits from the national standards). State C uses all four pathways to move the largest proportion among the four states to permanence. State A lags significantly behind State C, but largely because it doesn't engage as much in State C's practice of quickly closing cases by discharging children to the homes of relatives. State C pays for these quick closings, however, with significantly higher rates of re-entry back into foster care.

Re-Entry into Foster Care

Tracking the proportion of discharged children who return to foster care within a year provides a good check on the adequacy of a state's permanency practices. States that quickly discharge large numbers of children only to receive a large fraction back into foster care do the children a great disservice. A half-century research demonstrates convincingly that children's well-being builds upon meeting first their primary needs for a stable and lasting family life.

AFCARS inability to track re-entry prospectively from the date of discharge, severely limits federal monitoring of how well states are fulfilling this responsibility. The problem is not with the use of exit cohorts, but instead with the retrospective look-back. A state passes the federal re-entry standard if 8.6 percent or fewer children entering foster care during a year under review are re-entering care within 12 months of a previous foster care episode. This look-back is analogous to judging the quality of a new educational program by only counting the number of incoming students who have repeated a grade. Clearly grade repetition is a risk factor, but it is not a measure of a program's impact on student performance. Imagine the uproar that would be fomented if the Secretary of Education announced that henceforth schools would be judged under *Leave No Child Behind* according to students' reading scores prior to their arriving at school rather than by their scores at the end of the academic year. But for some reason, this practice is tolerated in child welfare.
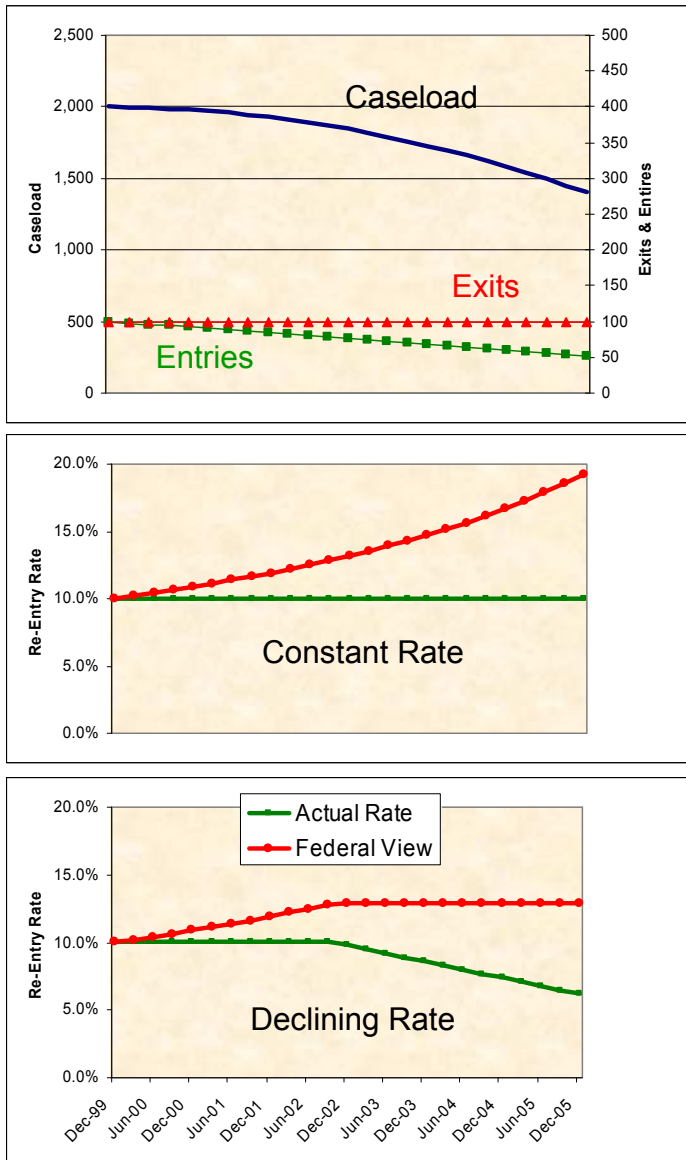
Figure 6—Simulations of Actual and Federal View of Re-Entry to Foster Care

The major hitch is that the federal re-entry measure is very sensitive to fluctuations in the numbers of children entering and exiting care. To illustrate how the retrospective measure can misrepresent re-entry trends, *Fostering Results* ran simulations of re-entry patterns under different assumptions about caseload growth and re-entry rates. Consider the caseload dynamic graphed in Figure 6 in which exit volume remains high but entry volume declines, as occurred in many states in the late 1990s. If a constant percentage of children discharged from care re-enter within 12 months, the federal retrospective measure will show increasing re-entry because a larger fraction of entrants each quarter show up as having previously been in care even though the actual re-entry rate remains constant. This would give the illusion of worsening performance when in actuality performance remained unchanged. A true declining rate would give the illusion of no change when in actuality performance improved. Depending on caseload dynamics, the distortion can work the opposite way, suggesting improving performance when there is in fact no change. This feature of the federal retrospective standard makes it highly unreliable for gauging state performance in discharging children to stable and lasting homes.

Figure 7 compares the differences in retrospective and prospective views of re-entry for the four selected states. Although the levels are nearer one another than any of
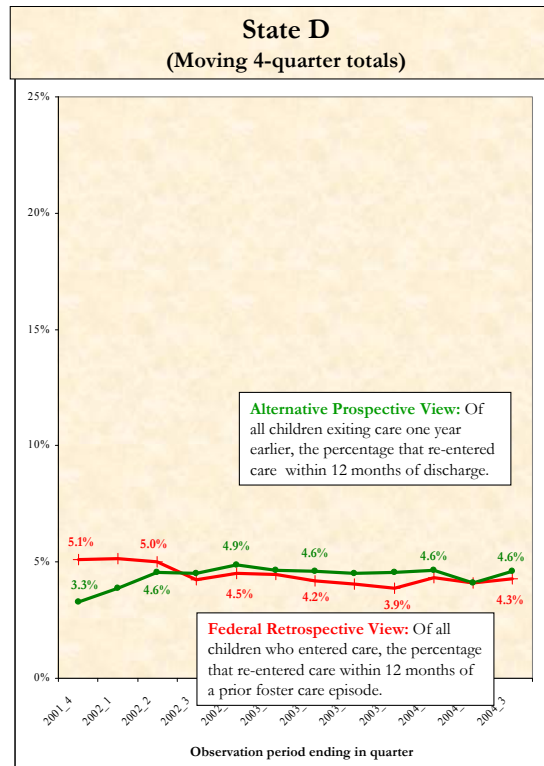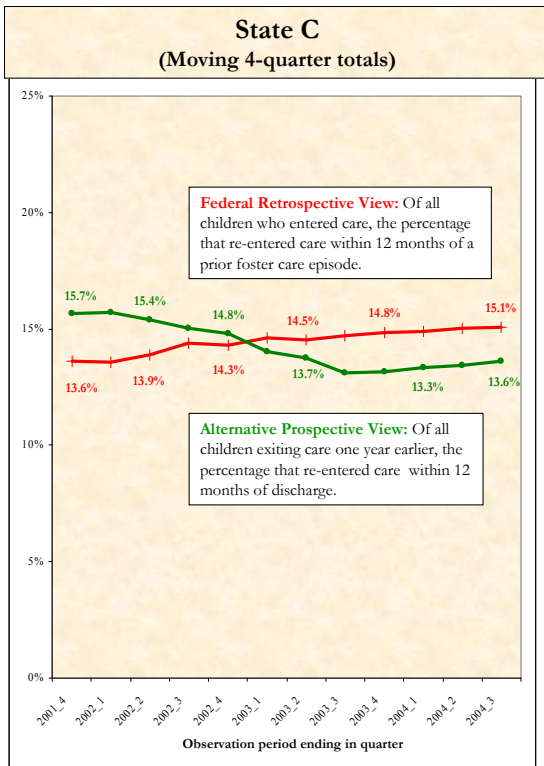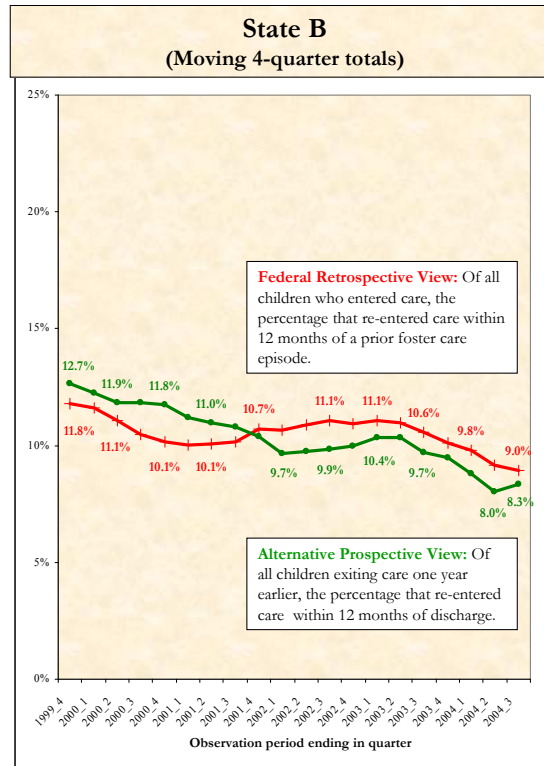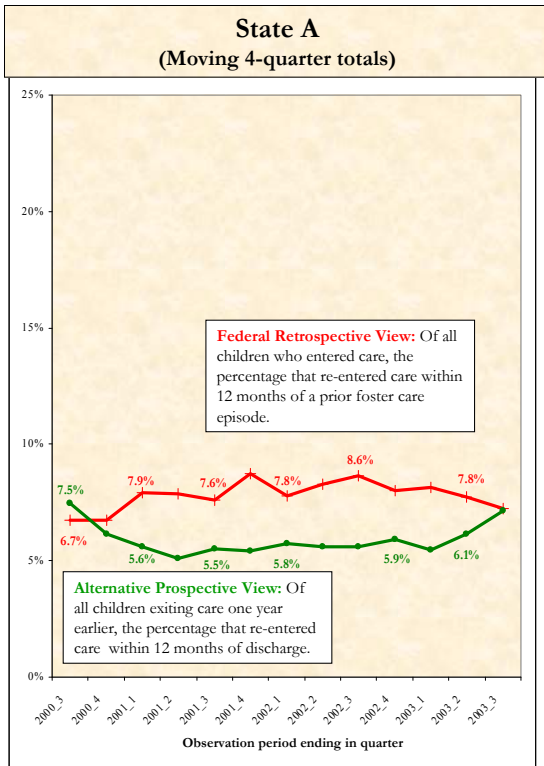
State A
(Moving 4-quarter totals)

Federal Retrospective View: Of all children who entered care, the percentage that re-entered care within 12 months of a prior foster care episode.

7.5%
6.7%
7.9%
7.6%
7.8%
8.6%
7.8%
5.6%
5.5%
5.8%
5.9%
6.1%

Alternative Prospective View: Of all children exiting care one year earlier, the percentage that re-entered care within 12 months of discharge.

2000_3 2000_4 2001_1 2001_2 2001_3 2001_4 2002_1 2002_2 2002_3 2002_4 2003_1 2003_2 2003_3

Observation period ending in quarter

State B
(Moving 4-quarter totals)

Federal Retrospective View: Of all children who entered care, the percentage that re-entered care within 12 months of a prior foster care episode.

12.7%
11.9%
11.8%
11.8%
11.1%
11.0%
10.7%
11.1%
11.1%
10.6%
10.1%
10.1%
9.7%
9.9%
10.4%
9.7%
9.8%
9.0%
8.0%
8.3%

Alternative Prospective View: Of all children exiting care one year earlier, the percentage that re-entered care within 12 months of discharge.

1999_4 2000_1 2000_2 2000_3 2000_4 2001_1 2001_2 2001_3 2001_4 2002_1 2002_2 2002_3 2002_4 2003_1 2003_2 2003_3 2003_4 2004_1 2004_2 2004_3

Observation period ending in quarter

State C
(Moving 4-quarter totals)

Federal Retrospective View: Of all children who entered care, the percentage that re-entered care within 12 months of a prior foster care episode.

15.7%
15.4%
14.8%
14.5%
14.8%
15.1%
13.6%
13.9%
14.3%
13.7%
13.3%
13.6%

Alternative Prospective View: Of all children exiting care one year earlier, the percentage that re-entered care within 12 months of discharge.

2001_4 2002_1 2002_2 2002_3 2002_4 2003_1 2003_2 2003_3 2003_4 2004_1 2004_2 2004_3

Observation period ending in quarter

State D
(Moving 4-quarter totals)

Alternative Prospective View: Of all children exiting care one year earlier, the percentage that re-entered care within 12 months of discharge.

5.1%
5.0%
4.9%
4.6%
4.6%
4.6%
3.3%
4.6%
4.5%
4.2%
3.9%
4.3%

Federal Retrospective View: Of all children who entered care, the percentage that re-entered care within 12 months of a prior foster care episode.

2001_4 2002_1 2002_2 2002_3 2002_4 2003_1 2003_2 2003_3 2003_4 2004_1 2004_2 2004_3

Observation period ending in quarter

Figure 7.—Retrospective and Prospective Measures of Re-Entry to Foster Care

the previously graphed outcome measures, the trend lines can be quite different, particularly over specific periods of time. Relying only on the federal retrospective measure could easily lead to erroneous inferences about state performance.

Converting Cross-Sectional Snapshots into Longitudinal Moving Pictures

The solution to the potentially misleading signals that bounce back from viewing state performance data retrospectively through the AFCARS looking-glass is to filter the information through the prospective lens of a longitudinal data system. This can be easily and efficiently accomplished with software available, for example, from Hornby-Zeller Associates to combine the existing 6-month AFCARS, cross-sectional submissions into a sort of longitudinal moving picture. Longitudinal data linked together in this fashion were used to generate the alternative prospective measures graphed in each of the preceding charts. Looking at state performance longitudinally provides an important check on the reliability of the existing CFSR retrospective measures. These measures may be calculated at the state level for federal monitoring purposes, but day-to-day decisions at the supervisory level should be based on the alternative prospective measures. The problem of reconciling any differences that might arise from looking at aggregate state performance in these two ways is best left to the state administrators and federal overseers at review time.

Converting cross-sectional snapshots only partially reconstructs the full longitudinal picture. The reason it works well for the outcomes already discussed, such as times to reunification, adoption, and re-entry, is that these processes operate at the level of removal episodes. Dates of initial removal, dates and number of latest removal from the home and discharge dates for the current reporting period are each available from the existing 6-month AFCARS submissions. The Hornby-Zeller software requires that case identifiers be encrypted consistently so that child records reported in subsequent years can be linked back to records reported in prior years.

Table 1 illustrates how this is done with the Hornby-Zeller software. The program first sorts the 6-month records by case record number, last removal date and current reporting period as shown in the top panel of Table 1. It then substitutes the last-reported values for fields expected to remain constant, such as race, gender, and birthdates, and imputes missing date fields that are inferable from adjacent records. It finally aggregates the bi-annual records into unique removal episodes as listed in Table I's bottom panel.

Table 1.—Conversion of AFCARS Standard 6-Month Submissions into Removal-Level Longitudinal AFCARS Records

Report Period	Record Number	First Removal	Total Remvls	Last Discharged	Latest Removal	Placement Date	N of Plmt	Placement Setting	Discharge Date	Reason
					Standard 6-Month Submissions					
1998 03	C2424	11/15/1996	1		11/15/1996	11/18/1996	2	Relative	3/6/1998	Reunified
2000 03	C2424	11/15/1996	2	3/6/1998	3/17/2000	3/17/2000	1	Relative		
2000 09	C2424	11/15/1996	2	3/6/1998	3/17/2000	9/18/2000	3	Relative		
2001 03	C2424	11/15/1996	2	3/6/1998	3/17/2000	10/24/2000	4	Relative		
2001 09	C2424	11/15/1996	2	3/6/1998	3/17/2000	7/26/2002	7	Relative		
2002 03	C2424	11/15/1996	2	3/6/1998	3/17/2000	10/26/2001	8	Relative		
2002 09	C2424	11/15/1996	2	3/6/1998	3/17/2000	10/26/2001	8	Relative		
2003 03	C2424	11/15/1996	2	3/6/1998	3/17/2000	10/26/2001	8	Relative		
2003 09	C2424	11/15/1996	2	3/6/1998	3/17/2000	10/26/2001	8	Relative	5/29/2003	Reunified
2004 03	C2424	11/15/1996	3	5/29/2003	1/23/2000	3/11/2004	2	Indep. Liv		
2004 09	C2424	11/15/1996	3	5/29/2003	1/23/2000	3/11/2004	2	Indep. Liv		
					Longitudinal AFCARS					
1998 03	C2424		1		11/15/1996				3/16/1998	Reunified
2003 09	C2424		2		3/17/2000				5/29/2003	Reunified
2004 09	C2424		3		1/23/2000				Censored*	

*Censored means that case is still open as of last reporting period. All that is currently known about future discharge date is that it is greater than 9/31/2004.

This particular method of rolling up 6-month AFCARS files works well at the removal level, but it can only partially reconstruct the longitudinal record at the placement level. As shown in Table 1, AFCARS picks up only the last placement setting during a reporting period, which can leave gaps in the placement history. In this example of Case C2424, placement 1 is missing for the first and third removal episodes, and placements 2, 5 and 6 are missing for the second removal. While not necessarily a problem for reporting purposes, an incomplete history of placement changes can greatly limit the ability to track and analyze foster care stability, restrictiveness of care, and other placement related issues.

Placement Stability

Under the CFSR, a state passes the national stability standard if 86.7 percent or more of children are in foster care fewer than 12 months and experience no more than two placement settings. Children who experience a third placement within 12 months of removal according to this definition have unstable foster care. While consistent with research, the major problem with the federal operational measurement is that it treats all three types of incomplete data—truncated, censored and selected—as though they were *uncensored*, that is, as if the time to the third placement was known exactly. Although for the case displayed above (see Table 1) the third placement date is exactly known, it could easily have been otherwise under existing AFCARS reporting procedures. The 4th, 5th or higher-order placement could instead have been the last reported placement setting. Cross-sectional snapshots of these higher-order placements provide truncated data or, at best, interval truncated data if the date of the 1st or 2nd placement can be accessed from a prior reporting period. Equating these truncated or censored data with uncensored and selected data of children discharged after their 3rd placement can introduce large biases into measurement. Treating censored data for children placed near the end of the reporting period as though they represented stable care can further bias measurement. Because the federal measure does not track all children for a full 12 months, the observation window can vary from one day (for children placed at the end of the federal fiscal year) to almost 12 months (for children placed at the start of the federal fiscal year).

The most efficient solution to these measurement problems is longitudinal tracking of placement changes for entry cohorts of children a full year after their removal from the home. The same failure-time methods discussed above can handle censored data for children removed near the end of the reporting period, truncated data for children in

their 4th or higher-order placement setting, and interval censored data, in which the timing of the 3rd placement can be fixed only inexactly between upper and lower dates.

Figure 8 compares the federal retrospective measure of stability to an alternative prospective measure that models the time to third placements. The proportion of children who experienced fewer than three placements at the 365th day after removal are counted as having stable episodes of care. Unlike the other measures previously discussed, the differences are minimal. Other than the gap between the measures, the trend lines pretty much tell the same story—stability is either staying constant or worsening. The similarity likely arises because the federal retrospective measure doesn't discard data but includes all entries, exits, and end-of-period counts. This is not to say that the federal measure is valid, only that the stability bias is not as consequential as the bias for time to reunification, adoption, and re-entry.

Re-Tooling AFCARS for Longitudinal Analysis

The weight of the evidence presented in this report and the consensus of scholarly opinion are that CFSR should make use of longitudinal data, rather than point-in-time data, to produce more complete and accurate assessments of state performance in child welfare service delivery. The fact that this can be accomplished efficiently and effectively by stitching together 6-month AFCARS submissions with exiting software into longitudinal records (albeit partial) argues for including these alternative prospective measures for use in the CFSR. But why settle for partially longitudinal data? Would it not be in the interests of all parties simply to require states to submit AFCARS data in fully longitudinal form in the first place?

The results of *Fostering Results'* year-long investigation indicate that only minimal changes would have to be made to AFCARS' existing reporting procedures to accommodate longitudinal analysis. Instead of reporting only one record per child, multiple records could be transmitted as is currently the practice with the National Child Abuse and Neglect Data System (NCANDS). Still a decision about the level of reporting, i.e. removals, placements, or living arrangements, would need to be reached. For example, consider the complete event history for the case displayed above in Table 1. The shaded rows in Table 2 identify the living arrangements that could not be reconstructed from the 6-month files.
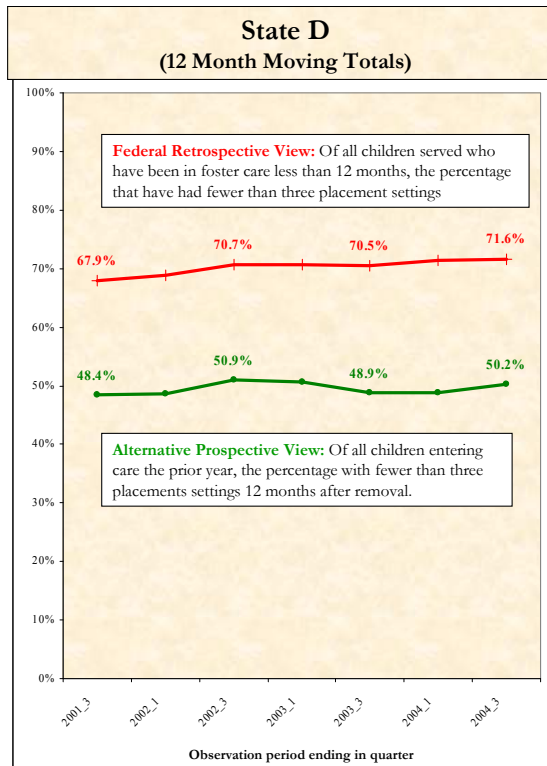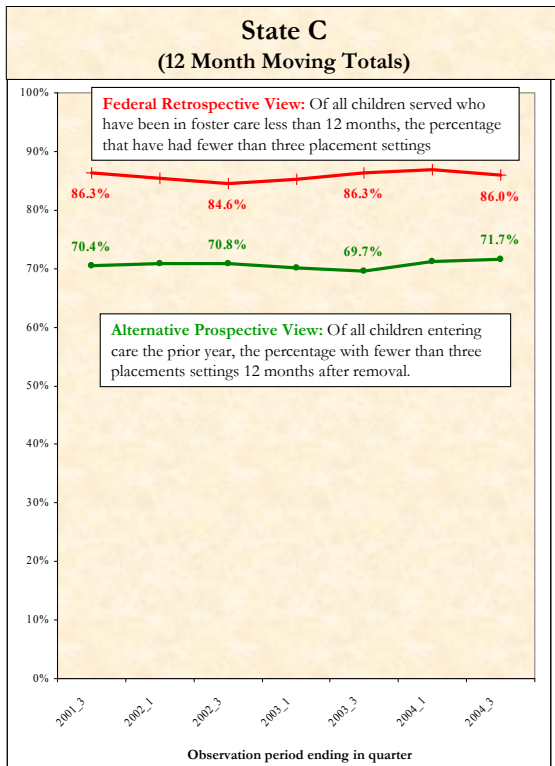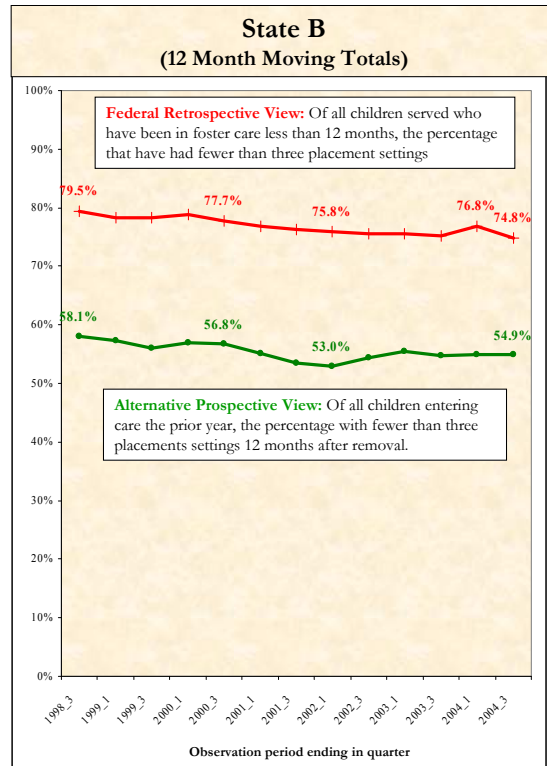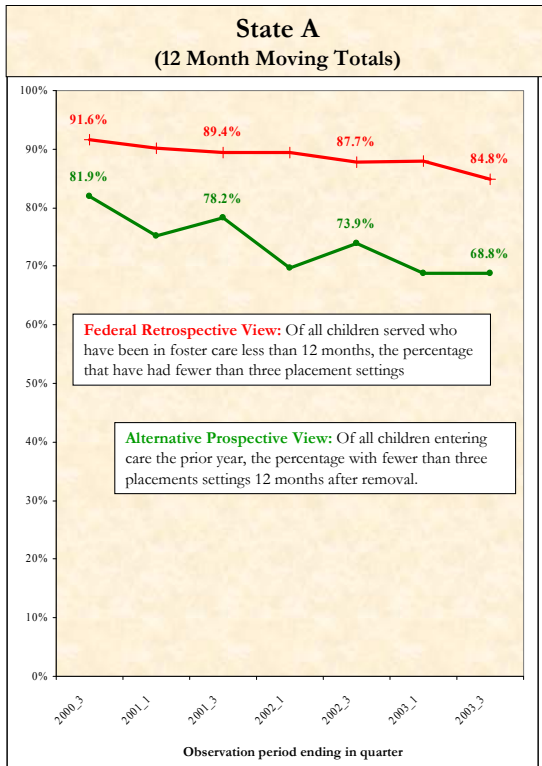
State A
(12 Month Moving Totals)

Federal Retrospective View: Of all children served who have been in foster care less than 12 months, the percentage that have had fewer than three placement settings

Alternative Prospective View: Of all children entering care the prior year, the percentage with fewer than three placements settings 12 months after removal.

Red line (Federal Retrospective View): 91.6%, 89.4%, 87.7%, 84.8%
Green line (Alternative Prospective View): 81.9%, 78.2%, 73.9%, 68.8%

X-axis labels: 2000_3, 2001_1, 2001_3, 2002_1, 2002_3, 2003_1, 2003_3

Observation period ending in quarter

State B
(12 Month Moving Totals)

Federal Retrospective View: Of all children served who have been in foster care less than 12 months, the percentage that have had fewer than three placement settings

Alternative Prospective View: Of all children entering care the prior year, the percentage with fewer than three placements settings 12 months after removal.

Red line (Federal Retrospective View): 79.5%, 77.7%, 75.8%, 76.8%, 74.8%
Green line (Alternative Prospective View): 58.1%, 56.8%, 53.0%, 54.9%

X-axis labels: 1998_3, 1999_1, 1999_3, 2000_1, 2000_3, 2001_1, 2001_3, 2002_1, 2002_3, 2003_1, 2003_3, 2004_1, 2004_3

Observation period ending in quarter

State C
(12 Month Moving Totals)

Federal Retrospective View: Of all children served who have been in foster care less than 12 months, the percentage that have had fewer than three placement settings

Alternative Prospective View: Of all children entering care the prior year, the percentage with fewer than three placements settings 12 months after removal.

Red line (Federal Retrospective View): 86.3%, 84.6%, 86.3%, 86.0%
Green line (Alternative Prospective View): 70.4%, 70.8%, 69.7%, 71.7%

X-axis labels: 2001_3, 2002_1, 2002_3, 2003_1, 2003_3, 2004_1, 2004_3

Observation period ending in quarter

State D
(12 Month Moving Totals)

Federal Retrospective View: Of all children served who have been in foster care less than 12 months, the percentage that have had fewer than three placement settings

Alternative Prospective View: Of all children entering care the prior year, the percentage with fewer than three placements settings 12 months after removal.

Red line (Federal Retrospective View): 67.9%, 70.7%, 70.5%, 71.6%
Green line (Alternative Prospective View): 48.4%, 50.9%, 48.9%, 50.2%

X-axis labels: 2001_3, 2002_1, 2002_3, 2003_1, 2003_3, 2004_1, 2004_3

Observation period ending in quarter

Figure 8.—Retrospective and Prospective Measures of Foster Care Stability

Table 2.—Complete Event History of Child Living Arrangements

Report Period	Record Number	First Removal	Total Remvls	Last Discharged	Latest Removal	Liv. Arr. Date	N of Plmt	Liv. Arr. Setting	Discharge Date	Reason
					Standard 6-Month Submissions					
1998 03	C2424	11/15/1996	1		11/15/1996	11/15/1996	1	Institution		
1998 03	C2424	11/15/1996	1		11/15/1996	11/18/1996	2	Relative	3/6/1998	Reunified
2000 03	C2424	11/15/1996	2	3/6/1998	3/17/2000	3/17/2000	1	Relative		
2000 09	C2424	11/15/1996	2	3/6/1998	3/17/2000	7/20/2000	2	Relative		
2000 09	C2424	11/15/1996	2	3/6/1998	3/17/2000	9/18/2000	3	Relative		
2001 03	C2424	11/15/1996	2	3/6/1998	3/17/2000	10/24/2000	4	Relative		
2001 09	C2424	11/16/1996	2	3/6/1998	3/17/2000	3/22/2001	5	Detention		
2001 09	C2424	11/16/1996	2	3/6/1998	3/17/2000	6/22/01	6	Relative		
2001 09	C2424	11/15/1996	2	3/6/1998	3/17/2000	7/26/2001	7	Relative		
2002 03	C2424	11/15/1996	2	3/6/1998	3/17/2000	10/26/2001	8	Relative		
2002 09	C2424	11/15/1996	2	3/6/1998	3/17/2000	10/26/2001	8	Relative		
2003 03	C2424	11/15/1996	2	3/6/1998	3/17/2000	10/26/2001	8	Relative		
2003 09	C2424	11/15/1996	2	3/6/1998	3/17/2000	10/26/2001	8	Relative		
2003 09	C2424	11/15/1996	2	3/6/1998	3/17/2000	3/25/2003	8	Runaway	5/29/2003	Reunified
2004 03	C2424	11/15/1996	3	5/29/2003	1/23/2000	3/11/2004	1	Indep. Liv		
2004 09	C2424	11/15/1996	3	5/29/2003	1/23/2000	3/11/2004	1	Indep. Liv		

The gray shaded rows identify the additional placements that are omitted from AFCARS because only the last placement during a reporting period is reported. The blackened row identifies a runway episode that was not reported because it was posted to the computer system after the 45 day grace period allowed for finalizing AFCARS submissions. Even if the episode were properly noted, AFCARS guidelines stipulate that runaways do not count as foster care placements and so the number of placements remains unchanged at 8.

AFCARS guidelines draw a distinction between foster care placements and temporary living conditions, noting that "there are certain temporary living conditions that are not placements, but rather represent a temporary absence from the child's ongoing foster care placement."[3] These temporary absences include: 1) visitation with a sibling, relative, or other caretaker, 2) hospitalization for medical treatment, acute psychiatric episodes or diagnosis, 3) respite care, 4) day or summer camps, 5) trial home visits, and 6) runaway episodes.

Reporting AFCARS records at the foster care placement level would provide the necessary detail to analyze foster care stability. Including temporary living conditions as well would provide the fullest detail needed for longitudinal data analysis, but also substantially increase the volume of computer records transmitted. Is the additional information from reporting temporary living conditions worth the extra costs in storage space? This would depend on how reliably states are currently counting placement changes in accordance with AFCARS guidelines. If some states are including temporary living conditions in the placement count while others are not, collecting the additional detail might be necessary to assure data comparability.

AFCARS Data Comparability

In 2001, the National Working Group to Improve Child Welfare Data (NWG), hosted by the Child Welfare League of America (CWLA), surveyed all 50 states and the District of Columbia to learn the specifics of how jurisdictions calculated the AFCARS data element for the number of placement settings children experienced during a removal episode. What they discovered is somewhat discouraging from a data comparability viewpoint. Fifty-nine percent of states incorrectly *included* hospitalization for medical treatment in their count of placement, while 33 percent incorrectly *excluded* detentions. In addition,

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[3] Social Security Act - section 479; 45 CFR 1355.40 & appendices; Child Welfare Policy Manual Sections 1.2B.7 and 1.3"(AFCARS Toolkit: User's Guide, September 2003)

29% incorrectly included respite care, 25% incorrectly included runaways, and 16% incorrectly included trial home visits. The lack of data comparability on a key national standard such as foster care stability raises another set of warning flags about the reliability of the CFSR process.

In order to learn whether the problem extends to other national standards, *Fostering Results* commissioned the NWG in 2005 to conduct a survey of the information jurisdictions used in reporting time to reunification. Compared to foster care placements, it might seem that states have far less leeway in how they report on reunifications, but it turns out that there is a fair amount of variation in what states can report on this measure as well.

In many states, a court can return a child to the physical custody of parents without restoring full legal rights until the parents satisfactorily demonstrate their capacity to parent. AFCARS guidelines stipulate that children are to be considered reunified only after the court restores legal custody or at six months after physical custody is transferred, whichever comes first. Despite this guidance, seven of the 40 responding states say they report the date of reunification as the date that physical custody is transferred. Because the transfer of legal custody can extend the waiting time to reunification by up to another six months after physical custody is transferred, states that use physical custody as the date of reunification will gain an advantage on the national standard over states that use the date of legal custody.

There are two possible solutions to the problem of data comparability. One is to promote standardization through explicit guidelines, better training, and periodic on-site audits. The other is for states to submit the information in sufficient detail so that the federal government can run the necessary programs centrally to assure data comparability. The latter solution would greatly increase the volume of records and expand the number of data elements submitted by the states. If this option were to be pursued, it is worth asking whether it is better simply to discard the existing AFCARS reporting structure and rebuild a longitudinal federal tracking system from the ground up to support the complete and accurate assessments of state performance required by federal law.

AFCARS Advisory Panel

The choice of which direction to pursue—retooling the existing system or rebuilding entirely from scratch—is best decided under the guidance of an AFCARS advisory panel

composed of child welfare policymakers, administrators, and researchers. When AFCARS was initially designed in the mid-1980s, it was a major leap forward in child welfare data reporting. But much has changed since then in information technology and methods of statistical analysis. States have a greatly improved capacity to collect, maintain and report data on children and families with much of these advances credited to public investment in Statewide Automated Child Welfare Information Systems (SACWIS).[4] Information technology continues to evolve at a rapid pace opening the door to solutions not previously available. There have been impressive advances in longitudinal data analysis and how to use these methods to assess child welfare performance.

Due to constantly changing technology and improving child welfare analytical capacity, an AFCARS advisory panel should be created to recommend changes in data collection procedures, provide guidance on assessing state performance, suggest revisions to the current outcome measures, and annually evaluate the quality of AFCARS to make recommendations for continuing quality improvement of the system of data collection, analysis and reporting. HHS staff has considerable child welfare knowledge but it is unreasonable to expect them to have the range of expertise needed to stay abreast of continuing developments in information technology, state data handling capacity and child welfare knowledge. This advisory panel should be composed of child welfare administrators and researchers who have worked in the area of measuring child welfare outcomes. The guidance of child welfare administrators is essential to inform DHHS on the operations of state systems. The guidance of researchers is essential due to the explosion of research and writing about child welfare outcomes in recent years.

The advisory panel that guides development of The National Child Abuse and Neglect Data System (NCANDS) is a useful model. Under the Child Abuse Prevention and Treatment Act of 1993, DHHS was directed to establish a national data collection and analysis program on child abuse and neglect.

To design the NCANDS, DHHS convened a State Advisory Group comprising representatives of state Child Protective Services (CPS) agencies and national experts in the fields of child welfare services and information systems. The State Advisory Group helped identify a core set of data items and definitions that would best represent a

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[4] One estimate is that more than $2.4 billion dollars have been invested in the design of these information systems (GAO-03-809).

national profile of child maltreatment. Subsequently, the State representatives assisted in the pilot testing and implementation of the NCANDS. The State Advisory Group continues to play an important role in recommending improvement to the NCANDS.[5]

Like AFCARS, NCANDS is used to produce some of the AFSA outcomes. There appears to be agreement that the NCANDS is useful and that the State Advisory Group has worked well.

AFCARS Can Be Rescued

The Adoption and Safe Families Act is superior public policy that clearly specifies that the national mandate for child welfare is the promotion of the safety, permanence and well-being of children who are in or at risk of foster care. Under the Act, the public has the opportunity to learn how state child welfare systems are accomplishing the national goals of providing safe and permanent homes to foster children and other victims of child abuse or neglect.

The results of the last three-year federal CFSR showed all 50 states and the District of Columbia and Puerto Rico falling short of the targets set by the federal government. This report makes the case that the federal yardstick for measuring state performance is seriously flawed and that the CFSR has failed to provide a complete and accurate picture of state child welfare performance. The primary reason is AFCARS inability to track child welfare outcomes prospectively from foster care entry to exit.

Our conclusion from *Fostering Results*' year-long investigation is that a rescue mission to correct AFCARS' flaws is feasible much like the 1993 National Aeronautics and Space Administration (NASA) mission that solved Hubble's measurement problems. Our tests suggest that the more glaring statistical limitations of AFCARS can be overcome with only minor changes in the way states report and identify data and by requiring the consistent encryption of child identifiers. But we also found that state variation in the reporting of critical data elements undermines comparability and further erodes the reliability of the CFSR.

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[5] (DHHS, ACF http://nccanch.acf.hhs.gov/pubs/factsheets/ncands.cfm (Date last accessed June 4, 2004).

Much progress has been made in identifying the changes needed to improve data comparability since the NWG first began bringing these issues to national attention. It is now time to act on the group's findings and recommended guidelines by establishing an AFCARS advisory panel. Re-tooling AFCARS under the guidance of a panel of policymakers, administrators, and researchers not only preserves the sizeable investments already made by federal and state governments in the existing system but could potentially open the way for impressive advances in child welfare research, program accountability and service improvement.

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