

# Placement Stability and Mental Health Costs for Children in Foster Care

David M. Rubin, MD, MSCE\*†§||; Evaline A. Alessandrini, MD, MSCE\*§||  
Chris Feudtner, MD, PhD, MPH\*†§||; David S. Mandell, ScD\*†#; A. Russell Localio, JD, MS||\*\*; and  
Trevor Hadley, PhD#

**ABSTRACT.** *Objective.* Although prior population-based studies have found that children in foster care use more mental health services than their Medicaid peers, less is known about how different experiences in foster care impact the likelihood of mental health service use. The primary aim of this study is to test the hypothesis that instability of foster care placements is associated with higher costs for mental health care services. The secondary aim is to test the hypothesis that foster care children are also more likely to generate high costs for mental health services if they generate higher costs for non-mental health claims.

*Methods.* Using administrative child welfare data linked to Medicaid claims, we assembled a unique retrospective cohort of adjudicated dependent children >2 years old who entered foster care between July 1993 and June 1995, spent at least 9 months in care, and were Medicaid eligible during a 1-year follow-up period. The primary outcome was high mental health service use, defined as having costs in the top decile of the sample. The primary independent variables were the number of foster care placements during the year and whether placements were interrupted by a return home for at least 1 month during that year (episodic foster care). We used logistic regression to estimate the association between placements and service utilization, with adjustment for age and physical health care costs.

*Results.* Of the 1635 children in the study, 41% had  $\geq 3$  foster care placements, and 5% had episodic foster care during the year of observation. The top 10% of mental health service users accounted for 83% of the \$2.4 million in mental health costs. Both multiple placements and episodic foster care increased the predicted probability of high mental health service use. Higher physical health care costs also increased the probability of high mental health use for all children, but this increased probability was most dramatic among children with episodic foster care (probability of high mental health use: 0.78; 95% confidence interval: 0.42–0.94).

*Conclusions.* Foster care placement instability was associated with increased mental health costs during the first year in foster care, particularly among children with increasing general health care costs. These findings high-

light the importance of interventions that address the global health of children in foster care and may permit better targeting of health care resources to subgroups of children most likely to use services. *Pediatrics* 2004;113:1336–1341; *foster care, mental health services, health care costs, placement stability.*

ABBREVIATIONS. CI, confidence interval; OR, odds ratio.

The 550 000 children in the US foster care system have significant and often unmet health care needs.<sup>1–6</sup> This population comprises a heterogeneous group of children, whose needs, subsequent health service use, and outcomes may be modified by their diverse experiences within the foster care system. Theory and current evidence suggest that placement stability, or the avoidance of multiple placement changes and transfers to restrictive settings such as group homes or residential treatment facilities, is a fundamental attribute of this diverse experience that may have considerable impact on long-term outcomes.<sup>1,7–16</sup>

Children's experiences in the foster care system are also linked to their overall health. A child with medical problems,<sup>9,17</sup> developmental problems,<sup>18</sup> and mental health problems<sup>5,8,12,19–25</sup> is more likely to drift from placement to placement and spend considerable time in the foster care system. The stability of a child's placements might also modify the increased needs<sup>5,26–31</sup> and service use by this population and in part may explain why children in foster care account for 25% to 41% of the annual expenditures for Medicaid mental health services.<sup>32</sup>

At the same time, the increased mental health needs and service use may also be related to the physical health needs and overall general health of these children. Emerging literature demonstrates that children with behavioral disorders generate higher overall general health care costs than those without behavioral disorders<sup>33–38</sup> and that, among children with mental health problems, those with poorer overall physical health use more mental health services than those in better health.<sup>39</sup> Despite this evidence, the interdependence of mental health and physical health has not been examined in the foster care population.

A number of studies have used administrative data to examine the delivery and utilization of health care services, particularly mental health services, to children in foster care.<sup>32,40–42</sup> Although contributing

From the \*Pediatric Generalist Research Group and Divisions of †General Pediatrics and ‡Pediatric Emergency Medicine, Children's Hospital of Philadelphia, Philadelphia, Pennsylvania; and Departments of §Pediatrics; #Psychiatry, and \*\*Biostatistics and ||Center for Clinical Epidemiology and Biostatistics, University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania.

Received for publication May 19, 2003; accepted Sep 19, 2003.  
Reprint requests to (D.M.R.) General Pediatrics, CHOP North, Room 1533, Children's Hospital of Philadelphia, 34th St and Civic Center Blvd, Philadelphia, PA 19104. E-mail: rubin@email.chop.edu  
PEDIATRICS (ISSN 0031 4005). Copyright © 2004 by the American Academy of Pediatrics.

to our understanding of how children in foster care use health services, these studies were unable to investigate variability within the foster care population and the implications of this heterogeneity on needs and use of health care services by these children. This inability was due to how these studies identified children as being in foster care, namely by program codes available in Medicaid data, and not by linking claims data to administrative data from the child welfare system. Investigators thus were unable to conduct more detailed analyses that included characteristics of both children and placements that might be associated with health service utilization.

The present study takes advantage of individually identified Medicaid and child welfare administrative data from a large city to investigate the association of placement stability and general health status with mental health service utilization during the first year in foster care. The study specifically examines mental health costs for children in foster care, a measure that is highly related to the intensity of service use.<sup>33–38</sup> Specifically, we hypothesized that children with poor placement stability would be more likely to generate high costs for mental health services than children with better placement stability. We also hypothesized that children would be more likely to generate high costs for mental health care if they also generated high general health care costs.

## METHODS

We identified a retrospective cohort of 1635 children >2 years old who entered a new spell of foster care in Philadelphia, Pa, between July 1, 1993, and June 30, 1995; spent at least 9 months in foster care; and were continuously eligible for Medicaid services for a 1-year follow-up period. Children <2 years old were excluded because of their infrequent mental health service use. The study cohort and follow-up period could not be extended beyond 1996; from 1997 onward, Medicaid-eligible residents of Philadelphia were mandated to enroll in managed care, and associated encounter data since then have been unavailable for analysis.

The sample was identified from foster care data provided by the Department of Public Welfare from the Commonwealth of Pennsylvania. These data then were linked to Medicaid claims by using a 3-stage process. First, data were linked by using social security numbers; these matches accounted for 78% of the sample. If a match by social security number failed, a unique identifier was created from each child's name, date of birth, and gender; this process accounted for an additional 13% of the sample. When these data were not available, a combination of first placement date and date of birth were used to create a match to the starting date of Medicaid eligibility and date of birth in the Medicaid claims data; this process accounted for an additional 5% of the sample. Only children whose foster care and Medicaid data successfully linked using one of these methods were included for the study.

Restricting our population to continuously Medicaid-eligible children required a careful consideration of well-documented challenges associated with measuring welfare dependence using administrative data sets.<sup>43–45</sup> These challenges are related to the fact that a significant portion of the welfare population cycles on and off welfare repeatedly.<sup>46</sup> Monthly welfare recipient data are generally provided in administrative data sets, offering the opportunity for relatively fine analysis of patterns of welfare use; however, monthly data may lead to the inclusion of misleading administrative mistakes and brief sanctions, sometimes called "administrative churning" in the welfare patterns.<sup>43</sup> There is the added concern that recipients using fewer services are more likely to cycle on and off eligibility. Using monthly data, Pavetti<sup>47</sup> found that 70% of women who leave Aid to Families With Dependent Children in a given month return to welfare within 3 months.

Given this finding and the fact that 3 months is the maximum administrative sanction in Pennsylvania, children were considered eligible for this study if they were enrolled in 9 of the 12 months of the study period.

To check whether this definition of continuous eligibility was valid, we performed all multivariable analyses (described below) on children who satisfied a full year of eligibility (82% of our sample) and compared it with analyses on a full sample by using the 9-month eligibility definition. Both analyses revealed similar associations, but the overall use of services and the magnitude of association was greater among the cohort if it was restricted to only those with a full year of eligibility (data not shown). Thus, to limit the potential bias of excluding children who may have used fewer services, we have chosen to report the more conservative estimates using a 9-month definition of continuous eligibility during the follow-up period.

Health service utilization data were derived from the Medicaid Management Information System, to which the foster care administrative data had been merged. Data included paid claims for inpatient and outpatient mental health services provided in psychiatric and community mental health settings and paid claims in all general health care settings for which the provider was a physician. Information was not available for diagnostic procedures (such as radiographs) and pharmacy utilization. Claims records also included coded diagnoses and reimbursements associated with each claim. Because no copayment is associated with Medicaid, reimbursements accurately reflected expenditures.

The primary dependent variable of interest, high mental health service use, was defined as the top 10% of mental health users by cost during a 1-year follow-up period after placement in foster care. Costs were summed from reimbursements on claims for which the location of service specified a mental health setting. This measure was chosen due to a prior population-based study of children in foster care in Washington that demonstrated that the top decile of utilizers accounted for much of the cost of delivering care to this population.<sup>48</sup> The primary independent variables included the number of placements that a child experienced during the year (dichotomized at  $\leq 2$  and  $> 2$  placements) and whether the child's foster care spell was interrupted by a return home of at least 1 month during the year (episodic foster care). The number of placements was dichotomized at 2 placements, because children with stable placement histories commonly have an emergency placement during a maltreatment investigation before a more stable placement is achieved. Covariates included age, race, gender, physical health care costs estimated from claims occurring in general health settings for which the provider was noted to be a physician, and whether the child received a special classification of "medical foster care" due to perceived special health care needs by the child welfare system. Age was categorized into 3 mutually exclusive groups including preschool toddlers (2–5 years old), early school-aged children (6–10 years old), and adolescents (11–18 years old).

$\chi^2$  analysis was used to test the bivariate associations between independent variables and the dependant variable of mental health use. Multivariable logistic regression was used to determine the independent associations of placement variables with level of mental health service use after adjustment for age, gender, race, medical foster care designation, and tertiles of physical health care costs derived from physician encounters. The models were checked for colinearity between the frequency of placements and episodic foster care by running models with each risk factor alone and comparing those models with a combined model with both risk factors included. Predicted probabilities of high mental health service use (with 95% confidence intervals [CIs]) among children with good and poor placement stability then were derived from parsimonious logit models developed independently for episodic foster care and number of placements. To simplify these models, race and medical foster care assignment were excluded, because their addition to the model did not change the log likelihood of the model, nor did they impact the magnitude of the association between placement patterns and mental health service use. Although independently associated with high mental health use, gender was also excluded from these models, because its addition did not alter the magnitude of the association between placements and mental health use. The predicted probabilities obtained from these models then were standardized to the middle age group and stratified by tertiles of physical health care costs.

The study was approved by the Children's Hospital of Phila-

delphia Institutional Review Board. Permission to use the data was granted by a memorandum of understanding between the Center for Mental Health Policy and Services Research at the University of Pennsylvania and the Commonwealth of Pennsylvania.

## RESULTS

A total of 1710 adjudicated dependent children >2 years old entered a new spell of foster care of at least 9 months duration between July, 1993, and June, 1995. By using the 3-stage linkage process, Medicaid and child welfare data were linked successfully for 96% of the cohort or for 1635 children who provided data for the study. Children whose data were linked successfully differed from other children only in having >2 foster care placements during the follow-up period ( $P < .05$ ).

Of the 1635 children, 41% had >2 placements, and 5% had episodic placements during the year of observation (Table 1). The mean age of the children was 8.8 years (SD: 4.4 years). Children were divided nearly equally among the 3 age groups. The majority (73%) of children had at least 1 physician claim during the year; 39% had at least 1 mental health claim during the year. Older children were more likely to receive mental health services; 50% of the children >6 years old had at least 1 mental health visit during follow-up.

The top 10% of mental health users accounted for 83% of the sample's \$2.4 million in mental health costs. Children also were divided into equal tertiles of physical health care costs estimated from physi-

cian claims to permit a stratified analysis of mental health use by level of nonpsychiatric service use. The total costs for nonpsychiatric physician claims totaled \$204 700, and 72 children (4.4% of the cohort) accounted for one third of these costs.

The adjusted association of study variables with mental health service use is shown in Table 2. Experiencing multiple placements (odds ratio [OR]: 2.01; 95% CI: 1.50–3.05) and episodic foster care (OR: 1.86; 95% CI: 1.05–3.29) each independently increased the likelihood of being a high mental health service user even after adjustment for age and the costs for physical health claims. Older children were at much greater risk of being high mental health service users ( $P < .001$ ), as were children with higher physical health care costs ( $P < .001$ ).

The probability of being a high mental health service user by placement history is shown in Table 3. These probabilities were derived from logit models adjusted only for the most important confounders of age and physical health care costs. The results are presented for each tertile of physical health care costs. The probability of being a high mental health service user was greater if children had multiple placements and if they experienced episodic foster care during the year of observation. Although physical health care costs increased the probability of high mental health service use among all children, this increased probability was most dramatic among children with episodic foster care versus those without episodic foster care (Mantel-Haenszel  $P = .001$

TABLE 1. Characteristics of the Study Population ( $n = 1635$  Children)

Characteristic	Percent of Total Cohort	Percent With This Characteristic Who Are High Mental Health Service Users
Age, y		
2–5	34.2	1.2
6–10	30.3	7.9
11–18	35.5	20.3
Gender		
Male	50.9	12.0
Female	49.1	8.0
Race		
White	10.6	14.4
Nonwhite	89.4	9.5
Frequency of placements		
1	19.6	9.1
2	39.2	5.2
3	23.2	12.4
4	11.3	17.4
>4	6.7	20.9
Episodic foster care?		
No	94.8	9.2
Yes	5.2	25.9
Medical-designated foster care?		
No	96.6	10.1
Yes	3.4	8.9
Had a mental health claim		
No	60.6	0.0
Yes	39.4	25.3
Had a non-mental health claim		
No	26.0	5.0
Yes	73.0	11.9
Tertile of physician claim costs*		
Lowest tertile	80.1	8.9
Middle tertile	15.5	14.6
Highest tertile	4.4	27.8

**TABLE 2.** Adjusted Odds of High Mental Health Service Use for Each Independent Variable\*

Characteristic	OR	95% CI
Frequency of placements		
≤2	...	...
≥3	2.01	1.50–3.05
Episodic foster care?		
No	...	...
Yes	1.86	1.05–3.29
Tertile of physician claim cost <sup>†</sup>		
Lowest tertile	...	...
Middle tertile	1.51	0.98–2.34
Highest tertile	3.45	1.85–6.44
Age, y		
2–5	...	...
6–10	6.82	3.00–15.51
11–18	17.86	8.19–38.96
Gender		
Female	...	...
Male	1.89	1.32–2.69
Race		
White	...	...
Nonwhite	0.70	0.43–1.15
Medical-designated foster care?		
No	...	...
Yes	0.76	0.26–2.15

\* High mental health use was defined as being in the top 10% for costs for mental health services.

† Tertiles were categorized based on the total costs of nonpsychiatric physician claims of \$204 700 divided into equal tertiles of cost.

for interaction between episodic foster care and physical health care costs).

## DISCUSSION

The present study revealed a significant association between mental health service utilization and 2 constructs of placement instability: 1) placement frequency and 2) episodic foster care. Higher physical health care costs also were associated with the greater use of mental health services, particularly among children who were in foster care episodically. Although these findings support other research that has shown a fundamental relationship between placement experience and health care needs for children in foster care,<sup>12</sup> a particular attribute and strength of this study was the linkage of child welfare data to Medicaid claims data. This linkage allowed us both to invoke a careful definition of foster care and subsequently to differentiate among children's placement experiences within foster care. This improved definition and differentiation of the foster care population strengthens the external validity of the study findings and may be more helpful in developing interventions for specific groups of children in foster care, such as those in their first year of placement. Furthermore, the classification of children by the stability of their placements may allow for the better targeting of scarce resources, particularly in our largest cities, to specific subgroups of children who are most in need of services (such as children with multiple placements during the first year of foster care).

Although this study has addressed some important limitations from previous population-based studies on children in foster care, it is not without its

own limitations. First, there are other constructs of placement stability that we were unable to include in our model. Traditionally (and as we have done), placement stability has been quantified by enumerating the number of placement changes a child experiences during a spell in foster care,<sup>7,9,10</sup> but a number of more recent studies are beginning to address other facets of the foster care experience that are not addressed by simple enumeration of placement changes. Such facets include the duration of time between placement changes, the type of placement the child receives (eg, kinship versus nonrelative foster care),<sup>8,19,22,49–56</sup> whether that child bounces in and out of foster care from home (ie, episodic foster care),<sup>19</sup> and the restrictiveness of the foster care setting in which the child is placed (eg, in-home foster care versus residential treatment facility).<sup>7,10,55,57</sup> Second, although costs are an important proxy for level of health service use, they are not a good proxy for quality of service use that might be measured better with other outcome measures (eg, continuity of care,<sup>58</sup> hospitalizations, or reliance on the emergency department for ambulatory care<sup>59</sup>). Third, children were included in the cohort if they spent >9 months in foster care, and thus the results of the study are only generalizable to children who spend at least that much time in foster care. Omitting children with shorter stays was necessary, because we could not verify their Medicaid eligibility during the 1-year follow-up period. Finally, our measurement of general health care costs included only the costs for physician-billed services. We were unable to consider the contribution of other services (such as hospital charges or laboratory, radiology, or pharmacy costs) that would have provided a better total accounting of general health care costs. However, to the degree that physician-billed services are a proxy for quantity of use, we were more interested in the effect of relative health care costs on mental health use, and we have no reason to believe that the addition of those other costs would have changed the relative associations of health care costs with level of mental health service use.

These limitations notwithstanding, the results of this study offer more detailed knowledge of health service use among children in foster care than previous studies. An added challenge is what to infer from those results. Although this study demonstrated that children with unstable placement histories use more mental health services than those with stable placement histories, use clearly does not equal needs. Although prior investigators revealed that use correlated with foster care parents' perceptions of mental health care needs,<sup>23,57,60</sup> this issue remains unresolved. Furthermore, in the present study, 48% of children with ≥3 placements and 46% of children in episodic foster care did not have a mental health visit.

Thus, the dilemma becomes one of defining priorities: an accounting of the burden of resources used by children with unstable placement histories or the description of children whose needs remain unmet. Both goals are important. From a policy perspective, accounting for the health care resources used by

**TABLE 3.** Predicted Probability (With 95% CI) of High Mental Health Use by Placement History and Costs for Nonpsychiatric Physician Claims

	Costs for Nonpsychiatric Physician Claims		
	Low	Medium	High
Frequency of placements			
≤2	0.05 (0.04–0.07)	0.08 (0.05–0.12)	0.15 (0.09–0.26)
≥3	0.10 (0.07–0.15)	0.15 (0.10–0.23)	0.28 (0.17–0.43)
Episodic foster care?			
No	0.06 (0.05–0.09)	0.10 (0.06–0.16)	0.11 (0.05–0.21)
Yes	0.08 (0.04–0.17)	0.13 (0.04–0.34)	0.78 (0.42–0.94)

High mental health use was defined as being in the top 10% for costs for mental health services. Costs for nonpsychiatric physician claims were derived from logistic regression and standardized to the middle age group. Results are stratified by tertile of non-mental health services physician costs.

subgroups of children can better allow administrators to target quality-improvement initiatives to ensure timely and effective care delivery among those subgroups. In this regard, it is less important that we were unable to identify causality in the relationship between placement stability and health service use, because merely the identification of groups of children who are at high risk for escalating health care costs may prove useful in targeting interventions and resources to children who need them most.

At the same time, understanding shortfalls in service use may allow administrators to track the performance of their child welfare units in guaranteeing universal mental health services to children who need them most. Although many advocates and researchers argue for universal mental health screening for all children entering foster care,<sup>61,62</sup> the reality is that resources to support such an initiative are often limited, particularly in our largest cities. Lacking a mechanism to deliver services to all children, we first must be able to identify the children most in need of such services and then have a mechanism to track our performance in improving service delivery to those groups. If one accepts this argument, then clearly children with multiple placements or those who experience episodic foster care would meet the “face validity” of children expected to have the greatest needs.

A final but important contribution of this study was demonstrating the interdependence of mental health and the global health of children in foster care. Children were more likely to be high-cost mental health service users if they also had high costs for nonpsychiatric services. This finding supports emerging literature about the interaction between general health care needs and mental health needs for children with behavioral problems.<sup>33–38</sup> These results have important policy implications toward the development of interventions in this population, suggesting that initiatives to improve the delivery of mental health services that fail to consider the global health of children in foster care may fall short in addressing their needs. In this regard, such results support the recommendation of the American Academy of Pediatrics for specialized health programs to provide the global case management that is imperative for improving the health of these children.

Overall, although previous population-based studies have described the cumulative health care

experiences of all children in foster care, this study offers more practical implications for intervention development, having rigorously defined its cohort and quantified utilization as a function of the experiences children have while in foster care. Our findings suggest that the provision of health services, long viewed as beyond the auspices of the child welfare system, is closely linked to the stability of foster care placements. Consequently, when considering interventions and targeting resources to children in foster care, we should account for the heterogeneity of their experience and consider the importance of global health, and not merely the single domain of mental health, in initiatives to improve the health of this vulnerable population.

#### ACKNOWLEDGMENTS

Dr Rubin thanks the following people from Children’s Hospital of Philadelphia: Heather Forkey, MD, and Cindy Christian, MD, for guidance on behalf of Safe Place: the Center for Child Protection and Health in the Division of General Pediatrics; and Jennifer Loftus for administrative support in the Division of General Pediatrics.

#### REFERENCES

1. Simms MD, Dubowitz H, Szilagyi MA. Health care needs of children in the foster care system. *Pediatrics*. 2000;106(4 suppl):909–918
2. Rosenfeld AA, Pilowsky DJ, Fine P, et al. Foster care: an update. *J Am Acad Child Adolesc Psychiatry*. 1997;36:448–457
3. Simms MD. The foster care clinic: a community program to identify treatment needs of children in foster care. *J Dev Behav Pediatr*. 1989;10:121–128
4. Wyatt DT, Simms MD, Horwitz SM. Widespread growth retardation and variable growth recovery in foster children in the first year after initial placement. *Arch Pediatr Adolesc Med*. 1997;151:813–816
5. Halfon N, Mendonca A, Berkowitz G. Health status of children in foster care. The experience of the Center for the Vulnerable Child. *Arch Pediatr Adolesc Med*. 1995;149:386–392
6. Chernoff R, Combs-Orme T, Riskey-Curtiss C, Heisler A. Assessing the health status of children entering foster care. *Pediatrics*. 1994;93:594–601
7. James S, Landsverk JA, Slymen DJ. Placement movement in out-of-home care: patterns and predictors. *Child Youth Serv Rev*. 2004. In press
8. Webster D, Barth RP, Needell B. Placement stability for children in out-of-home care: a longitudinal analysis. *Child Welfare*. 2000;79:614–632
9. Barth RP, Courtney ME, Berrick JD, Albert V. *From Child Abuse to Permanency Planning: Child Welfare Services Pathways and Placements*. New York, NY: Aldine de Gruyter; 1994
10. Usher CL, Randolph KA, Gogan HC. Placement patterns in foster care. *Social Service Review*. 1999;73:22–36
11. Barth RP, Jonson-Reid M. Outcomes after child welfare services: implications for the design of performance measures. *Child Youth Serv Rev*. 2000;22:763–787
12. Newton RR, Litrownik AJ, Landsverk JA. Children and youth in foster care: disentangling the relationship between problem behaviors and number of placements. *Child Abuse Negl*. 2000;24:1363–1374

13. Bowlby J. *A Secure Base: Parent-Child Attachment and Healthy Human Development*. New York, NY: Basic Books, Inc; 1988
14. Sroufe L, Carlson EA, Levy A, K., Egeland B. Implications of attachment theory for developmental psychopathology. *Dev Psychopathol*. 1999;11:1-13
15. Egeland B, Sroufe A, Erickson M. The developmental consequence of different patterns of maltreatment. *Child Abuse Negl*. 1983;7:459-469
16. Egeland BR, Carlson E, Sroufe L. Resilience as process. *Dev Psychopathol*. 1993;5:517-528
17. Groze V, Haines-Simeon M, Barth RP. Barriers in permanency planning for medically fragile children: drug affected children and HIV infected children. *Child Adolesc Social Work J*. 1994;11:63-85
18. Horwitz SM, Simms MD, Farrington R. Impact of developmental problems on young children's exits from foster care. *J Dev Behav Pediatr*. 1994;15:105-110
19. Fanshel D, Shinn E. *Children in Foster Care: A Longitudinal Study*. New York, NY: Columbia University Press; 1978
20. Palmer SE. Placement stability and inclusive practice in foster care: an empirical study. *Child Youth Serv Rev*. 1996;18:589-601
21. Pardeck JT. Multiple placement of children in foster family care: an empirical analysis. *Soc Work*. 1984;29:506-509
22. Pardeck JT. *The Forgotten Children: A Study of the Stability and Continuity of Foster Care*. Washington, DC: University Press of America; 1982
23. Landsverk J, Davis I, Ganger W, Newton R. Impact of child psychosocial functioning on reunification from out-of-home placement. *Child Youth Serv Rev*. 1996;18:447-462
24. Cooper CS, Peterson NL, Meier JH. Variables associated with disrupted placement in a select sample of abused and neglected children. *Child Abuse Negl*. 1987;11:75-86
25. Teare JF, Larzelere RE, Smith GL, Becker CY, Castrianno LM, Peterson RW. Placement stability following short-term residential care. *J Child Fam Stud*. 1999;8:59-69
26. Landsverk JA, Garland AF, Leslie LK. *Mental Health Services for Children Reported to Child Protective Services*. Thousand Oaks, CA: Sage Publications; 2002
27. Glisson C. The effects of services coordination teams on outcomes for children in state custody. *Adm Soc Work*. 1994;18:1-23
28. Trupin EW, Tarico VS, Low BP, Jemelka R, McClellan J. Children on child protective service caseloads: prevalence and nature of serious emotional disturbance. *Child Abuse Negl*. 1993;17:345-355
29. Clausen JM, Landsverk J, Ganger W, Chadwick D, Litrownik A. Mental health problems of children in foster care. *J Child Fam Stud*. 1998;7:283-296
30. Urquiza AJ, Wirtz SJ, Peterson MS, Singer VA. Screening and evaluating abused and neglected children entering protective custody. *Child Welfare*. 1994;73:155-171
31. Garland AF, Hough RL, Landsverk JA, et al. Racial and ethnic variations in mental health care utilization among children in foster care. *Child Serv Soc Policy Res Pract*. 2000;3:133-146
32. Takayama JI, Bergman AB, Connell FA. Children in foster care in the state of Washington. Health care utilization and expenditures. *JAMA*. 1994;271:1850-1805
33. Chan E, Zhan C, Homer C. Health care use and costs for children with attention-deficit/hyperactivity disorder. *Arch Pediatr Adolesc Med*. 2002;156:504-511
34. Guevara J, Lozano P, Wickizer T, Mell L, Gephart H. Utilization and cost of health care services for children with attention-deficit/hyperactivity disorder. *Pediatrics*. 2001;108:71-78
35. Guevara J, Mandell D. Costs associated with attention-deficit/hyperactivity disorder: overview and future projections. *Expert Rev Pharmacoeconomics Outcomes Res*. 2003;3:201-210
36. Mandell D, Guevara J, Rostain A, Hadley T. Medical expenditures among children diagnosed with psychiatric disorders in a Medicaid population. *Psychiatr Serv*. 2003;54:465-467
37. Kelleher K, Childs G, Harman J. Healthcare costs for children with attention-deficit/hyperactivity disorder. *Econ Neurosci*. 2001;3:60-63
38. Leibson CL, Katusic SK, Barbaresi WJ, Ransom J, O'Brien PC. Use and costs of medical care for children and adolescents with and without attention-deficit/hyperactivity disorder. *JAMA*. 2001;285:60-66
39. Brooks D, Barth RP. Characteristics and outcomes of drug-exposed and non drug-exposed children in kinship and non-relative foster care. *Child Youth Serv Rev*. 1998;20:475-501
40. Halfon N, Berkowitz G, Klee L. Mental health service utilization by children in foster care in California. *Pediatrics*. 1992;89:1238-1244
41. Halfon N, Berkowitz G, Klee L. Children in foster care in California: an examination of Medicaid reimbursed health services utilization. *Pediatrics*. 1992;89:1230-1237
42. Harman JS, Childs GE, Kelleher KJ. Mental health care utilization and expenditures by children in foster care. *Arch Pediatr Adolesc Med*. 2000;154:1114-1117
43. Bane M, Ellwood D. *Welfare Realities: From Rhetoric to Reform*. Cambridge, MA: Harvard University Press; 1994
44. Gottschalk P, Moffitt R. Welfare dependence: concepts, measures and trends. *Am Econ Rev*. 1994;84:38-42
45. Moffitt R. Incentive effects of the US welfare system: a review. *J Econ Lit*. 1992;30:1-61
46. Hoynes H, MaCurdy T. Has the decline in benefits shortened welfare spells?. *Am Econ Rev*. 1994;84:43-48
47. Pavetti L. *How Long Do Families Stay on AFDC? Looking Before we Leap: Social Science and Welfare Reform*. Washington, DC: The Brookings Institution; 1995
48. Takayama JI, Wolfe E, Coulter KP. Relationship between reason for placement and medical findings among children in foster care. *Pediatrics*. 1998;101:201-207
49. Dubowitz H, Zuravin S, Starr RH, Feigelman S, Harrington D. Behavior problems of children in kinship care. *J Dev Behav Pediatr*. 1993;14:386-393
50. Dubowitz H, Feigelman S, Zuravin S. A profile of kinship care. *Child Welfare*. 1993;72:153-169
51. Dubowitz H, Feigelman S, Harrington D, et al. Children in kinship care: how do they fare? *Child Youth Serv Rev*. 1994;16:85-106
52. Sawyer RJ, Dubowitz H. School performance of children in kinship care. *Child Abuse Negl*. 1994;18:587-597
53. Benedict MI, Zuravin S, Somerfield M, Brandt D. The reported health and functioning of children maltreated while in family foster care. *Child Abuse Negl*. 1996;20:561-571
54. Berrick JD, Barth RP. Research on kinship foster care: What do we know? Where do we go from here? *Child Youth Serv Rev*. 1994;16:1-5
55. Leslie LK, Landsverk J, Horton MB, Ganger W, Newton RR. The heterogeneity of children and their experiences in kinship care. *Child Welfare*. 2000;79:315-334
56. Iglehart AP. Kinship foster care: placement, service, and outcome issues. *Child Youth Serv Rev*. 1994;16:107-122
57. Leslie LK. Children in foster care: factors influencing outpatient mental health service use. *Child Abuse Negl*. 2000;24:465-476
58. Christakis DA, Mell L, Wright JA, Davis R, Connell FA. The association between greater continuity of care and timely measles-mumps-rubella vaccination. *Am J Public Health*. 2000;90:962-965
59. Alessandrini EA, Shaw KN, Bilker WB, Perry KA, Baker MD, Schwarz DF. Effects of Medicaid managed care on health care use: infant emergency department and ambulatory services. *Pediatrics*. 2001;108:103-110
60. Garland AF, Landsverk JL, Hough RL, Ellis-Macleod E. Type of maltreatment as a predictor of mental health service use for children in foster care. *Child Abuse Negl*. 1996;20:675-688
61. American Academy of Pediatrics, Committee on Early Childhood and Adoption and Dependent Care. Developmental issues for young children in foster care. *Pediatrics*. 2000;106:1145-1150
62. American Academy of Pediatrics, Committee on Early Childhood, Adoption, and Dependent Care. Health care of children in foster care. *Pediatrics*. 1994;93:335-338