



MMWRTM

Morbidity and Mortality Weekly Report

Recommendations and Reports

July 2, 2004 / Vol. 53 / No. RR-10

Therapeutic Foster Care for the Prevention of Violence

**A Report on Recommendations of the Task Force
on Community Preventive Services**

The *MMWR* series of publications is published by the Epidemiology Program Office, Centers for Disease Control and Prevention (CDC), U.S. Department of Health and Human Services, Atlanta, GA 30333.

SUGGESTED CITATION

Centers for Disease Control and Prevention. Therapeutic foster care for the prevention of violence: a report on recommendations of the Task Force on Community Preventive Services. *MMWR* 2004;53(No. RR-10): [inclusive page numbers].

Centers for Disease Control and Prevention

Julie L. Gerberding, M.D., M.P.H.
Director

Dixie E. Snider, Jr., M.D., M.P.H.
(Acting) Deputy Director for Public Health Science

Tanja Popovic, M.D., Ph.D.
(Acting) Associate Director for Science

Epidemiology Program Office

Stephen B. Thacker, M.D., M.Sc.
Director

Office of Scientific and Health Communications

John W. Ward, M.D.
Director
Editor, MMWR Series

Suzanne M. Hewitt, M.P.A.
Managing Editor, MMWR Series

C. Kay Smith-Akin, M.Ed.
Lead Technical Writer/Editor

Jeffrey D. Sokolow, M.A.
Project Editor

Beverly J. Holland
Lead Visual Information Specialist

Lynda G. Cupell
Malbea A. LaPete
Visual Information Specialists

Kim L. Bright, M.B.A.
Quang M. Doan, M.B.A.
Erica R. Shaver
Information Technology Specialists

CONTENTS

Background	1
Introduction	2
Methods	2
Results	5
Research Concerns	6
Use of the Recommendation in States and Communities	6
Additional Information About the <i>Community Guide</i>	7
References	7

Therapeutic Foster Care for the Prevention of Violence

A Report on Recommendations of the Task Force on Community Preventive Services

Prepared by
 Robert A. Hahn, Ph.D.¹
 Jessica Lowy, M.P.H.¹
 Oleg Bilukha, M.D., Ph.D.¹
 Susan Snyder, Ph.D.¹
 Peter Briss, M.D.¹
 Alex Crosby, M.D.²
 Mindy T. Fullilove, M.D.^{3,4}
 Farris Tuma, Sc.D.^{5*}
 Eve K. Moscicki, Sc.D.^{5*}
 Akiva Liberman, Ph.D.^{6†}
 Amanda Schofield, M.P.H.¹
 Phaedra S. Corso, Ph.D.¹

¹Division of Prevention Research and Analytic Methods, Epidemiology Program Office, CDC

²Division of Violence Prevention, National Center for Injury Prevention and Control, CDC

³New York State Psychiatric Institute, Columbia University, New York, New York

⁴Task Force on Community Preventive Services

⁵National Institute of Mental Health, Bethesda, Maryland

⁶National Institute of Justice, U.S. Department of Justice, Washington, DC

Summary

In therapeutic foster care programs, youths who cannot live at home are placed in homes with foster parents who have been trained to provide a structured environment that supports their learning social and emotional skills. To assess the effectiveness of such programs in preventing violent behavior among participating youths, the Task Force on Community Preventive Services conducted a systematic review of the scientific literature regarding these programs. Reported and observed violence, including violent crime, were direct measures. Proxy measures were externalizing behavior (i.e., behavior in which psychological problems are acted out), conduct disorder, and arrests, convictions, or delinquency, as ascertained from official records, for acts that might have included violence. Reviewed studies assessed two similar interventions, distinguished by the ages and underlying problems of the target populations. Therapeutic foster care for reduction of violence by children with severe emotional disturbance (hereafter referred to as cluster therapeutic foster care) involved programs (average duration: 18 months) in which clusters of foster-parent families cooperated in the care of children (aged 5–13 years) with severe emotional disturbance. The Task Force found insufficient evidence to determine the effectiveness of this intervention in preventing violence. Therapeutic foster care for the reduction of violence by chronically delinquent adolescents (hereafter referred to as program-intensive therapeutic foster care) involved short-term programs (average duration: 6–7 months) in which program personnel collaborated closely and daily with foster families caring for adolescents (aged 12–18 years) with a history of chronic delinquency. On the basis of sufficient evidence of effectiveness, the Task Force recommends this intervention for prevention of violence among adolescents with a history of chronic delinquency. This report briefly describes how the reviews were conducted, provides additional information about the findings, and provides information that might help communities in applying the intervention locally.

Background

Therapeutic foster care is also known by other names, including therapy foster care, multidimensional treatment foster care, specialist foster care, treatment-foster family care, family-based treatment, and parent-therapist programs (1). Such care

is provided as an alternative to incarceration, hospitalization, or different forms of group and residential treatment for children and adolescents with a history of chronic antisocial behavior, delinquency, or emotional disturbance. This intervention is also used to address multiple public health goals for various juvenile

The material in this report was prepared by the Epidemiology Program Office, Stephen B. Thacker, M.D., Director; Division of Prevention Research and Analytic Methods, Anne Haddix, Ph.D., Acting Director.

* Points of view are those of the contributor and do not necessarily reflect those of the National Institutes of Health.

† Points of view are those of the contributor and do not necessarily reflect those of the National Institute of Justice or the Department of Justice.

populations, including children with physical health problems (e.g., acquired immunodeficiency syndrome, cerebral palsy, deafness, and other disabilities) (2).

Participants in therapeutic foster care are placed for several months in foster families (one to two participants per family) whose members are trained and compensated for their work in providing a structured environment in which participants can learn social and emotional skills (e.g., emotional self-awareness, anger management, and conflict resolution). In certain programs, participants are separated from their usual peer environment and closely supervised in school, at home, and in the community. These programs might include psychological therapy for participants and for members of their biologic families to improve family functioning if and when youths are able to return to their homes.

Juvenile violence is a substantial problem in the United States. In 2001, U.S. adults reported >1.87 million crimes of violence committed by persons estimated to be aged 12–20 years, representing a rate of approximately 5.7 crimes of violence/100 persons in this age group (3). On the basis of reports by victims, juvenile perpetrators committed violence at a higher rate than persons of any other age group (4). Two thirds of reported violent incidents in 2001 were simple assaults (i.e., attacks without a weapon that did not result in an injury requiring >2 days' hospitalization), and one third were serious violent crimes (i.e., aggravated assaults, robberies, or rapes). (Because these data were derived from victim surveys, murder was excluded from the analysis.) Since the early 1970s, juveniles aged 10–17 years, who constitute <12% of the population, have been involved as offenders in approximately 25% of serious violent crimes (5). Risk factors for juvenile violence include low socioeconomic status, inadequate parental supervision, harsh and erratic discipline, and delinquent peers (6). Delinquent juveniles commonly have additional problems, including drug abuse, difficulties at school, and mental illness (7).

Only a limited proportion of violent offenses by juveniles are reported and responded to by law enforcement and justice agencies. During 1992–2000, <50% of all violent crimes and <60% of serious violent crimes were reported to law enforcement agencies (8). In 2001, approximately 67,000 persons aged <18 years were arrested for homicide, aggravated assault, robbery, or rape (4), indicating that <10% of seriously violent juveniles (as assessed by self-report or victim report) were apprehended. A previously published comparison of self-reports of chronic juvenile offenders with official records indicated that 86% of chronic juvenile offenders had no record of arrest (9). Rates of arrest for violent crime among juveniles

aged 10–17 years increased from 300/100,000 juveniles in the early 1980s to >500 in 1994 and then declined to 300 by 2001 (10). Despite this decline, communities continue to be concerned about the prevalence of juvenile violent crime and the need to rehabilitate juvenile offenders (11).

Introduction

The independent nonfederal Task Force on Community Preventive Services (Task Force) is developing the *Guide to Community Preventive Services* (*Community Guide*). This resource includes multiple systematic reviews, each focusing on a preventive health topic. The *Community Guide* is being developed with the support of the U.S. Department of Health and Human Services (DHHS), in collaboration with public and private partners. Although CDC provides staff support to the Task Force for development of the *Community Guide*, the recommendations presented in this report were developed by the Task Force and are not necessarily the recommendations of CDC, DHHS, or other participating agencies.

This report is one in a series of topics included in the *Community Guide*. It provides an overview of the process used by the Task Force to select and review evidence and summarize its recommendations regarding use of therapeutic foster care to prevent youth violence. A full report on the recommendations, providing additional evidence (i.e., discussions of applicability, additional benefits, potential harms, existing barriers to implementation, program costs, and cost-benefit analysis) and remaining research questions, will be published in the *American Journal of Preventive Medicine*.

The findings from systematic reviews of eight types of firearm laws (12), early-childhood home visitation to prevent violence (12), and transfer of juveniles to the adult judicial system have been completed previously. Reviews of other violence-prevention interventions, including school-based violence-prevention programs, community policing, and antihate campaigns, are under way or pending.

Methods

Community Guide team members conduct systematic reviews to evaluate the evidence of intervention effectiveness; review findings serve as the basis for Task Force recommendations. Interventions are recommended by the Task Force when review findings indicate that evidence of effectiveness is sufficient or strong (13). Other types of evidence can also affect a recommendation. For example, evidence of harm resulting from an intervention might lead to a recommendation that the intervention not be used if

adverse effects outweigh benefits. In addition, if relevant data are available, the cost and cost-effectiveness of interventions determined to be effective are evaluated (14). (The instrument used for economic evaluations is available at <http://www.thecommunityguide.org/methods/econ-abs-form.pdf>.) Although the option exists, the Task Force has not yet used economic information to modify recommendations.

A finding of insufficient evidence to determine effectiveness should not be interpreted as evidence of ineffectiveness but rather as an indicator that additional research to determine effectiveness is needed. In contrast, sufficient or strong evidence of harmful effect(s) or of ineffectiveness would lead to a recommendation against use of an intervention.

The methods used by the *Community Guide* to conduct systematic reviews and to link evidence to recommendations have been described elsewhere (14). In brief, for each *Community Guide* topic, a multidisciplinary team conducts a review that includes the following:

- developing an approach to selecting the interventions for review;
- systematically searching for, retrieving, and evaluating evidence of effectiveness of selected interventions;
- assessing the quality of, summarizing the strength of, and drawing conclusions from the body of evidence;
- assessing cost and cost-effectiveness analyses and identifying applicability and barriers to implementation of all effective interventions;
- summarizing information regarding evidence of other effects of the intervention; and
- identifying and summarizing research gaps.

For the systematic review of violence-prevention intervention programs, a multidisciplinary review team[§] generated a comprehensive list of strategies and created a priority list of interventions for review. Therapeutic foster care was identified as a high-priority intervention. The team's evaluations were based on the following:

- the potential of an intervention to reduce violence;
- the potential benefits of expanding use of seemingly effective but underused interventions and reducing use of seemingly ineffective but overused interventions;
- interest among violence-prevention constituencies; and
- diversity among intervention types.

The intervention included in this review might be useful in reaching objectives outlined in *Healthy People 2010* (15), the disease prevention and health promotion agenda for the United States. These objectives identify preventable threats to health and provide a focus for the efforts of public health systems, legislators, and law enforcement officials in addressing those threats. Certain proposed violence-specific objectives listed in Chapter 15 (Injury and Violence Prevention) of *Healthy People 2010* relate to therapeutic foster care and its proposed effects on violence-related outcomes (Table).

To be included in the review of effectiveness, studies had to be consistent with the following criteria:

- be primary investigations of an intervention rather than, for example, guidelines or reviews;
- provide information on at least one outcome of interest from a list of violent outcomes selected in advance by the team;
- be conducted in an established market economy;[¶]
- compare outcomes among persons exposed to the intervention with outcomes among persons not exposed or less exposed to the intervention (either concurrent comparison between different groups or before-and-after comparison within the same group); and
- have been published before December 2001.

The purpose of this review is to determine the effectiveness of therapeutic foster care programs in preventing violence. Studies of therapeutic foster care were reviewed only if they assessed violent outcomes or proxies for violent outcomes. Studies were reviewed regardless of whether violence was the primary target or outcome of the program, as long as the study was consistent with the specified inclusion criteria. The effects on other outcomes were not assessed systematically but are reported selectively if they were addressed in the studies reviewed. Studies were reviewed if they assessed reported (including self-reported) or observed violence, including violent crime (e.g., assault, robbery, rape, and homicide). Studies

[§] Laurie M. Anderson, Ph.D., Division of Prevention Research and Analytic Methods, Epidemiology Program Office, CDC, Olympia, Washington; Carl Bell, M.D., Community Mental Health Council, Chicago, Illinois; Red Crowley, Men Stopping Violence, Atlanta, Georgia; Sujata Desai, Ph.D., Division of Violence Prevention, National Center for Injury Prevention and Control, CDC, Atlanta, Georgia; Deborah French, Colorado Department of Public Health and Environment, Denver, Colorado; Darnell F. Hawkins, Ph.D., J.D., University of Illinois at Chicago, Chicago, Illinois; Danielle LaRaue, M.D., Harlem Hospital Center, New York, New York; Colin Loftin, Ph.D., State University of New York, Albany, New York; Barbara Maciak, Ph.D., M.P.H., Division of Prevention Research and Analytic Methods, Epidemiology Program Office, CDC, Detroit, Michigan; James Mercy, Ph.D., Division of Violence Prevention, National Center for Injury Prevention and Control, CDC, Atlanta, Georgia; John Reid, Ph.D., Oregon Social Learning Center, Eugene, Oregon; Suzanne Salzinger, Ph.D., New York State Psychiatric Institute, New York, New York; Patricia Smith, Michigan Department of Community Health, Lansing, Michigan.

[¶] As defined by the World Bank, these include Andorra, Australia, Austria, Belgium, Bermuda, Canada, Channel Islands, Denmark, Faeroe Islands, Finland, France, Germany, Gibraltar, Greece, Greenland, Holy See, Iceland, Ireland, Isle of Man, Italy, Japan, Liechtenstein, Luxembourg, Monaco, The Netherlands, New Zealand, Norway, Portugal, San Marino, Spain, St. Pierre and Miquelon, Sweden, Switzerland, the United Kingdom, and the United States.

TABLE. Selected objectives related to therapeutic foster care programs — Healthy People 2010

Objective	Population	Rate	
		Baseline*	2010 target
Injury prevention			
Reduce nonfatal firearm-related injuries (15-5)	All ages	24.0 [†] (1997)	8.6 [†]
Reduce firearm-related deaths (15-3)	All ages	11.3 [†] (1998)	4.1 [†]
Reduce hospital emergency department visits (15-12)	All ages	131 [§] (1997)	126 [§]
Reduce hospitalization for nonfatal head injuries (15-1)	All ages	60.6 [†] (1998)	45.0 [†]
Reduce hospitalization for nonfatal spinal cord injuries (15-2)	All ages	4.5 [†] (1998)	2.4 [†]
Violence and abuse prevention			
Reduce physical assaults (15-37)	Persons aged ≥12 years	31.1 [§] (1998)	13.6 [§]
Reduce physical fighting (15-38)	Persons aged 12–18 years	36% [¶] (1999)	32%
Reduce homicides (15-32)	All ages	6.5 [†] (1997)	3.0 [†]
Reduce maltreatment (15-33a)	Persons aged <18 years	12.9 [§] (1998)	10.3 [§]
Reduce child maltreatment fatalities (15-33b)	Persons aged <18 years	1.6 [†] (1998)	1.4 [†]
Reduce physical assault by current or former intimate partners (15-34)	Persons aged ≥12 years	4.4 [§] (1998)	3.3 [§]
Reduce rape or attempted rape (15-35)	Persons aged ≥12 years	0.8 [§] (1998)	0.7 [§]
Reduce sexual assault other than rape (15-36)	Persons aged ≥12 years	0.6 [§] (1998)	0.4 [§]

Source: US Department of Health and Human Services. Healthy People 2010. 2nd ed. Washington, DC: US Government Printing Office, 2000.

* Years indicate when data were analyzed to establish baseline estimates. Certain estimates were age-adjusted to the year 2000 standard population.

[†] Per 100,000 population.

[§] Per 1,000 population

[¶] Percentage of students in grades 9–12 who reported fighting during the previous 12 months.

also were reviewed if they examined any of the following six proxies for violent outcomes, which might include either clearly violent behavior or behavior that is not clearly violent:

- measures of the psychiatric diagnosis of conduct disorder (i.e., conduct in which “the basic rights of others or major age-appropriate societal norms or rules are violated”) (16);
- measures of externalizing behavior (i.e., rule-breaking behaviors and conduct problems, including physical and verbal aggression, defiance, lying, stealing, truancy, delinquency, physical cruelty, and criminal acts) (17);
- rates of delinquency;
- rates of arrest;
- rates of conviction; and
- rates of incarceration.

The review team also considered the possibility that therapeutic foster care might reduce suicidal behavior or violent victimization among juveniles. However, no studies were found that examined suicidal behavior or victimization as outcomes of this intervention.

The team developed an analytic framework for therapeutic foster care intervention, indicating possible causal links between therapeutic foster care and the outcomes of interest. To make recommendations, the Task Force required that studies demonstrate decreases among program participants in the selected direct or proxy measures for violence. If both direct and proxy measures were available, preference was given to the direct measure.

Electronic searches for intervention studies were conducted in Medline, Embase, Applied Social Sciences Index and

Abstracts, National Technical Information Service (NTIS), PsychLit (now called PsycInfo), Sociological Abstracts, National Criminal Justice Reference Service (NCJRS), and Cinahl.** The references listed in all retrieved articles were also reviewed, along with additional reports as identified by the team, the consultants, and specialists in the field. Journal articles, government reports, books, and book chapters were all included.

Each study that was consistent with the inclusion criteria was evaluated by using standardized abstraction criteria (18) and was assessed for suitability of the study design and threats to validity (13). On the basis of the number of threats to validity, studies were characterized as having good, fair, or limited execution. Results on each outcome of interest were obtained from each study that had good or fair execution. Measures adjusted for the effects of potential confounders were used in preference to crude effect measures. A median was calculated as a summary effect measure for outcomes of interest. Unless otherwise noted, the results of each study were represented as a point estimate for the relative change in the

** These databases can be accessed as follows: Medline, <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi>; Embase, <http://www.embase.com> (requires identification/password account); Applied Social Sciences Index and Abstracts, <http://www.csa.com> (requires identification/password account); National Technical Information Service (NTIS), <http://www.ntis.gov/products/types/databases.asp?loc=4-4-3>; PsychLit (now called PsycInfo), <http://www.apa.org/psycinfo>; Sociological Abstracts, <http://www.csa.com/csa/factsheets/socioabs.shtml>; National Criminal Justice Reference Service (NCJRS), http://abstractsdb.ncjrs.org/content/AbstractsDB_Search.asp; and Cinahl, <http://www.cinahl.com/wpages/login.htm> (requires identification/password account).

rate of violent outcomes associated with the intervention. Calculations were made in the same way for study outcomes measured as rates or proportions (e.g., arrest rates) and for outcomes measured in scales (e.g., levels of conduct disorder assessed in a behavior checklist)^{††}.

The strength of the body of evidence of effectiveness was characterized as strong, sufficient, or insufficient on the basis of the number of available studies, the suitability of study designs for evaluating effectiveness, the quality of execution of the studies, the consistency of the results, and the effect size (13).

Results

A systematic search identified five studies that reported the effects of therapeutic foster care programs on violence by juveniles (19–23). The studies assessed two similar, but differing interventions, distinguished by both the ages and underlying problems of the target populations. Separate assessments were made of the effectiveness of these two program types.

- The first type of intervention studied was therapeutic foster care for the reduction of violence by children with severe emotional disturbance (SED) (hereafter referred to as cluster therapeutic foster care). Two studies assessed interventions in which, with some guidance from program personnel, clusters of five foster-parent families cooperated in the care of five children (aged 5–13 years) with SED (22,23). These programs were of relatively long duration (average length: 18 months).
- The second type of intervention studied was therapeutic foster care for the reduction of violence by chronically delinquent adolescents (hereafter referred to as program-intensive therapeutic foster care). Three studies assessed interventions in which program personnel collaborated

closely and daily with foster families caring for older juveniles (aged 12–18 years) with a history of chronic delinquency (19,21). The average duration of these programs was 6–7 months.

The Task Force found insufficient evidence to determine the effectiveness of cluster therapeutic foster care in preventing violence among children with SED. Too few studies on which to base a conclusion of effectiveness were identified, and findings from available studies were inconsistent. The team identified only two studies that assessed the effects of cluster therapeutic foster care on violence by participants (22,23). One study compared a cluster therapeutic foster care intervention (called a parent-therapist program) to group residence for the treatment of SED among youths aged 6–12 years (23). Conduct disorders (characterized by oppositional defiant behavior and physical aggression and not equivalent to the psychiatric diagnosis of conduct disorder) were assessed before and after the intervention by using scores on the Behavior Problem Checklist Factor I (24). The study reported an undesirable effect (a 31.3% increase) in conduct disorders associated with cluster therapeutic foster care for girls, and a negligible effect (a 0.2% decrease) for boys; neither effect was statistically significant. The second study (22) provided information on the effects of New York State's version of cluster therapeutic foster care, Family-Based Treatment, on externalizing behavior among children aged 6–13 years with SED, which was assessed by using the externalizing subscale of the Child Behavior Checklist (25). The study reported a limited (2.5%) increase in externalizing behavior among children after the intervention.

One study evaluated program-intensive therapeutic foster care involving youths aged 9–18 years with SED who were released from a state mental hospital when judged ready for community placement (26). However, the study did not report violent outcomes and thus was not included in this review. In 1997, a review of an early intervention treatment foster care program for severely abused and neglected children aged 4–7 years reported a reduction in behavior problems (from a list of 36 items, only one of which was distinctly violent); this study (27) also was excluded.

Three studies conducted by the same research group in one region of the country assessed the effects of program-intensive therapeutic foster care on violence by juveniles with a history of chronic delinquency (19–21). One study examined rates of incarceration before and after treatment among juveniles aged 12–18 years who were diverted from a corrections institution to foster care (19). Youths receiving other residential treatment (i.e., group care) within the community served as controls and were matched on sex, age, and date of

^{††} Relative percentage changes were calculated as follows:

- for studies with before-and-after measurements and concurrent comparison groups, effect size = $(I_{post} / I_{pre}) / (C_{post} / C_{pre}) - 1$
- for studies with postmeasurements only and concurrent comparison groups, effect size = $(I_{post} - C_{post}) / C_{post}$
- for studies with before-and-after measurements but no concurrent comparison, effect size = $(I_{post} - I_{pre}) / I_{pre}$, where,
 - I_{post} = last reported outcome rate in the intervention group after the intervention;
 - I_{pre} = reported outcome rate in the intervention group before the intervention;
 - C_{post} = last reported outcome rate in the comparison group after the intervention; and
 - C_{pre} = reported outcome rate in the comparison group before the intervention; and
- for studies in which outcomes were reported in scale measures (as in behavior check lists) and information on standard deviations (σ) was available, effect size = $(I_{post} - C_{post}) / \sigma_C$, where σ_C is the standard deviation of the control population.

commitment. The study reported a substantial and statistically significant decrease in the proportion of juveniles in the intervention group incarcerated after the program, compared with those in the control group. This effect declined from 57.1% in the first year after the intervention to 46.7% after 2 years. Duration of therapeutic foster care treatment was inversely correlated ($r = -0.71$; $p = 0.001$) with the number of days of subsequent incarceration, suggesting a dose-response benefit of treatment.

Another study examining a program-intensive therapeutic foster care program involved a before-and-after comparison of arrests for violent interpersonal crimes (based on official records) among youths aged 12–18 years at the time of referral (20). Compared with the year before intervention, the proportion of juveniles arrested for violent crimes the year after intervention decreased 74.7% for boys and 69.2% for girls. All participants in the study benefited, regardless of age or sex, except for girls aged 14 years, for whom an increase was reported in the rate of certain nonviolent status offenses (e.g., truancy and “ungovernability”) that are classified as offenses only because they involve a minor.

A third study used a randomized controlled design to determine the effects of therapeutic foster care on self-reported felony assaults (i.e., aggravated assault, sexual assault, and gang fights) among males aged 12–17 years when the study began (21). When demographic and criminal background were controlled for, boys receiving therapeutic foster care reported committing approximately 73.5% fewer felony assaults after intervention than did those placed in group care. In this study, time in placement was not associated with rates of subsequent criminal behavior, thus failing to confirm the evidence of a dose response from the earlier study. An analysis of the causal pathways of the effects of therapeutic foster care on changes in violent behavior indicated that a substantial portion of the effect of the intervention was attributable to the youth having a positive relationship with an adult combined with not associating with deviant peers (28).

Program-intensive therapeutic foster care is associated with a reduction in violence by juveniles with a history of chronic delinquency; the median effect size (71.9%) was midway between the benefits for males and females in an earlier study (20). On the basis of sufficient evidence of effectiveness, the Task Force recommends program-intensive therapeutic foster care for the prevention of violence among adolescents with histories of chronic delinquency.

The systematic review team identified two economic evaluations of therapeutic foster care programs. A cost-analysis study (29,30) assessed program costs for therapeutic foster care provided adolescents with chronic delinquency problems. Only those program costs incurred by state and local governments

were considered in the analysis, including costs for personnel (i.e., case manager, program director, therapists, recruiter, and foster parent trainer) and foster-parent stipends, as well as additional health services (e.g., mental health care). Average program costs (in 1997 dollars) ranged from \$18,837 to \$56,047/youth, depending on the emotional state of the child, the intensity of services required, and Medicaid and juvenile corrections division reimbursement rates.

The second study was an incremental cost-benefit analysis (31) of a therapeutic foster care program compared with standard group care. The study found that for every dollar spent in justice system costs, therapeutic foster care saved \$14.07. Incremental program costs (in 1997 dollars) were \$1,912/youth. Incremental benefits for a 37% reduction in crime were \$83,576/youth, including taxpayer benefits (\$22,263/youth) and crime victim benefits (\$61,313/youth). Taxpayer benefits included reduced burden on and expense of sheriff offices, courts and county prosecutors, juvenile detention, juvenile probation, juvenile rehabilitation, adult jail, state community supervision, and the department of corrections. Crime victim benefits included reductions in medical expenses, productivity losses, and pain and suffering. Total net benefits (benefits minus costs) ranged from \$20,351 to \$81,664/youth. This estimate does not include benefits to youth in the programs (e.g., increased earnings and improved life course).

Research Concerns

Additional research is needed to determine whether cluster therapeutic foster care is effective and to evaluate further the effectiveness of program-intensive therapeutic foster care. A research agenda and a full review of the evidence will be published in a supplement to the *American Journal of Preventive Medicine*.

Use of the Recommendation in States and Communities

Because of the substantial burden of violence among adolescents in the United States and the importance of this problem from public health and societal perspectives, the determination of the effectiveness of secondary prevention programs (e.g., therapeutic foster care) in reducing associated forms of violence is critical. The finding that program-intensive foster care is effective in reducing violence in the juvenile population should be relevant and useful in many settings. The identification of insufficient evidence to determine the effect of these programs among children with SED

might encourage additional evaluations of related interventions for this challenging population.

The population of chronic delinquents toward whom therapeutic foster care might be targeted is substantial. In 1999, the most recent year for which data are available, 104,237 juveniles were committed to residential placement for delinquency in the United States, including 38,005 (36.5%) youths who were committed for violent offenses (4). Of the total number of juveniles committed, approximately 25,800 (36%) were held in facilities that were not locked but only “staff secure” (5). Because therapeutic foster care is intended for juveniles thought to be sufficiently safe for treatment within communities, a substantial number of juveniles in residential placement might be eligible for such interventions as therapeutic foster care.

This review assessed only studies of therapeutic foster care that evaluated and assessed intervention effects on violent outcomes. These studies, however, also reported other possible beneficial or harmful effects of therapeutic foster care. Although systematic analysis of other outcomes is beyond the scope of this review, the outcomes are noted. In the randomized trial of therapeutic foster care for chronic male offenders, self-reported rates of general delinquency and “index” offenses (a Federal Bureau of Investigation classification including serious property offenses as well as violent interpersonal offenses) were lower among therapeutic foster care participants than among those in control groups. General delinquency was lower by 55.7%, and index offenses were lower by 62.8% (21). Youths in therapeutic foster care programs were taught responsible family behavior and trained to improve school attendance, relations with teachers and peers, and homework performance; measured findings on these outcomes are not reported. On average, foster care participants also spent almost twice as many days living at home after the program as group-care participants. If sustained, improvements associated with therapeutic foster care probably would have substantial benefits in the course of a participant’s life.

Certain studies reviewed indicated a potentially negative effect of therapeutic foster care among females. One study reviewed found that rates of problem behaviors reported by foster parents increased among female participants during the first 6 months of therapeutic foster care (20). Although females had reduced rates of violence after the program, an initial increase in behavior problems might result in their dismissal or expulsion from foster homes because of an apparent lack of improvement (20).

Communities can use the Task Force recommendation supporting program-intensive therapeutic foster care for prevention of violence among adolescents with a history of chronic

delinquency to support, expand, and improve existing programs and to initiate new ones. In selecting and implementing interventions, communities should carefully assess the need for such programs (e.g., the burden of violence committed by chronically delinquent adolescents).

For local objectives to be achieved, recommendations provided in the *Community Guide* and other evidence should be used in the context of local information (e.g., resource availability; administrative structures; and the economic and social environments of communities, neighborhoods, and health-care systems). Program selection and design should consider the range of options relevant to the particular communities.

This review and the accompanying recommendation from the Task Force on Community Preventive Services can be used by public health policymakers, program planners and implementers, and researchers. It might help to secure interest, resources, and commitment for implementing these interventions and provide direction and scientific questions for additional empirical research to improve the effectiveness and efficiency of these programs.

Additional Information About the Community Guide

Community Guide reviews are prepared and released as each is completed. Previously published reviews and recommendations cover findings from systematic reviews of vaccine-preventable diseases, tobacco use prevention and reduction, motor-vehicle occupant injury, physical activity, diabetes, oral health, the effect of the social environment on health, violence prevention (firearms laws and home visitation), skin cancer, and informed decision making in cancer screening. A compilation of systematic reviews will be published in book form. Additional information regarding the Task Force and the *Community Guide*, together with a list of published articles, is available at <http://www.thecommunityguide.org>.

References

1. Hudson J, Nutter RW, Galaway B. Treatment foster family care: development and current status. *Community Alternatives: International Journal of Family Care* 1994;6:1–24.
2. Meadowcroft P. Treating emotionally disturbed children and adolescents in foster homes. *Child Youth Serv* 1989;12:23–43.
3. Bureau of Justice Statistics. Criminal victimization in the United States—statistical tables index. US Department of Justice, Bureau of Justice Statistics, 2002. Available at <http://www.ojp.usdoj.gov/bjs/abstract/cvus/age456.htm>.
4. Pastore AL, Maguire K, eds. Sourcebook of criminal justice statistics 2001. Washington, DC: US Department of Justice, Office of Justice Programs, Bureau of Justice Statistics, 2002.

5. Snyder HN, Sickmund M. Juvenile offenders and victims: 1999 national report. Washington, DC: US Department of Justice, Office of Juvenile Justice and Delinquency Prevention, 1999.
6. US Department of Justice, Office of Juvenile Justice and Delinquency Prevention. Serious and violent juvenile offenders. Washington, DC: US Department of Justice, Office of Juvenile Justice and Delinquency Prevention, 1998.
7. Huizinga D, Loeber R, Thornberry TP, Cothorn L. Co-occurrence of delinquency and other problem behaviors. Washington, DC: US Department of Justice, Office of Justice Programs, Office of Juvenile Justice and Delinquency Prevention, 2000; NCJ 182211.
8. Hart TC, Rennison C. Reporting crime to the police, 1992–2000. Washington, DC: US Department of Justice, Office of Justice Programs, 2003; NCJ 195710.
9. Dunford FW, Elliott DS. Identifying career offenders using self-reported data. *J Res Crime Delinq* 1984;21:57–86.
10. Snyder HN. Juvenile arrests 2001. Washington, DC: US Department of Justice, Office of Justice Programs, 2003; NCJ 201370.
11. Chamberlain P. Treatment foster care. Washington, DC: US Department of Justice, Office of Justice Programs, Office of Juvenile Justice and Delinquency Prevention, *Juvenile Justice Bulletin*, December 1998.
12. CDC. First reports evaluating the effectiveness of strategies for preventing violence: early childhood home visitation and firearms laws. Findings from the Task Force on Community Preventive Services. *MMWR* 2003;52(RR-14):1–20.
13. Briss PA, Zaza S, Pappaioanou M, et al. Developing an evidence-based Guide to Community Preventive Services—methods. *Am J Prev Med* 2000;18(Suppl 1):35–43.
14. Carande-Kulis VG, Maciosek MV, Briss PA, et al. Methods for systematic reviews of economic evaluations for the Guide to Community Preventive Services. *Am J Prev Med* 2000;18(Suppl 1):75–91.
15. US Department of Health and Human Services. *Healthy People 2010*. 2nd ed. With understanding and improving health and objectives for improving health (2 vols.). Washington, DC: US Department of Health and Human Services, 2000.
16. American Psychiatric Association. *Diagnostic and statistical manual of mental disorders (DSM-IV)*. Washington, DC: American Psychiatric Association, 1994.
17. Hann DM, Borek N, eds. *Taking stock of risk factors for child/youth externalizing behavior problems*. Bethesda, MD: US Department of Health and Human Services, Public Health Service, National Institutes of Health, National Institute of Mental Health, 2001.
18. Zaza S, Wright-de Agüero L, Briss PA, et al. Data collection instrument and procedure for systematic reviews in the Guide to Community Preventive Services. *Am J Prev Med* 2000;18(Suppl 1):44–74.
19. Chamberlain P. Comparative evaluation of specialized foster care for seriously delinquent youth: a first step. *Community Alternatives: International Journal of Family Care* 1990;2:21–36.
20. Chamberlain P, Reid JB. Differences in risk factors and adjustment for male and female delinquents in treatment foster care. *J Child Fam Stud* 1994;3:23–39.
21. Chamberlain P, Reid JB. Comparison of two community alternatives to incarceration for chronic juvenile offenders. *J Consult Clin Psychol* 1998;66:624–33.
22. Evans ME, Armstrong MI, Kuppinger AD, Huz S, McNulty TL. Preliminary outcomes of an experimental study comparing treatment foster care and family-centered intensive case management. In: Epstein MH, Kutash K, Duchnowski A, eds. *Outcomes for children and youth with emotional and behavioral disorders and their families: programs and evaluation best practices*. Austin, TX: Pro-Ed, Inc., 1998:543–80.
23. Rubinstein JS, Armentrout JA, Levin S, Herald D. The Parent-Therapist Program: alternate care for emotionally disturbed children. *Amer J Orthopsychiatry* 1978;48:654–62.
24. Quay H, Peterson D. *Manual for the Behavior Problem Checklist*. Champaign, IL: University of Illinois, Children's Research Center, 1975.
25. Achenbach TM, Edelbrock C. *Manual for the child behavior checklist and revised child behavior profile*. Burlington, VT: University of Vermont, Department of Psychiatry, 1983.
26. Chamberlain P, Reid JB. Using a specialized foster care community treatment model for children and adolescents leaving the state mental hospital. *J Community Psychol* 1991;19:266–76.
27. Chamberlain P, Moreland S, Reid K. Enhanced services and stipends for foster parents: effects on retention rates and outcomes for children. *Child Welfare* 1992;71:387–401.
28. Eddy JM, Chamberlain P. Family management and deviant peer association as mediators of the impact of treatment condition on youth antisocial behavior. *J Consult Clin Psychol* 2000;68:857–63.
29. Chamberlain P, Mihalic SF. *Blueprints for violence prevention: multi-dimensional treatment foster care*. Boulder, CO: University of Colorado at Boulder, Center for the Study and Prevention of Violence, 1998.
30. Moore KJ, Osgood DW, Larzelere RE, Chamberlain P. Use of pooled time series in the study of naturally occurring clinical events and problem behavior in a foster care setting. *J Consult Clin Psychol* 1994;62: 718–28.
31. Aos S, Phipps P, Barnoski R, Lieb R. *The comparative costs and benefits of programs to reduce crime*. Olympia, WA: Washington State Institute for Public Policy, 2001.

Task Force on Community Preventive Services*

April 1, 2004

Chair: Jonathan E. Fielding, M.D., Los Angeles Department of Health Services, Los Angeles, California

Members: Noreen Morrison Clark, Ph.D., University of Michigan School of Public Health, Ann Arbor, Michigan; John Clymer, Partnership for Prevention, Washington, D.C.; Alan R. Hinman, M.D., Task Force for Child Survival and Development, Atlanta, Georgia; Robert L. Johnson, M.D., New Jersey Medical School, Department of Pediatrics, Newark, New Jersey; Garland H. Land, M.P.H., Center for Health Information Management and Epidemiology, Missouri Department of Health, Jefferson City, Missouri; Patricia A. Nolan, M.D., Rhode Island Department of Health, Providence, Rhode Island; Dennis E. Richling, M.D., Union Pacific Railroad, Omaha, Nebraska; Barbara K. Rimer, Dr.P.H., School of Public Health, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina; Steven M. Teutsch, M.D., Merck & Company, Inc., West Point, Pennsylvania

Consultants: Robert S. Lawrence, M.D., Bloomberg School of Public Health, Johns Hopkins University, Baltimore, Maryland; J. Michael McGinnis, M.D., Robert Wood Johnson Foundation, Princeton, New Jersey; Lloyd F. Novick, M.D., Onondaga County Department of Health, Syracuse, New York.

*Patricia A. Buffler, Ph.D., University of California, Berkeley; Ross Brownson, Ph.D., St. Louis University School of Public Health, St. Louis, Missouri; Mary Jane England, M.D., Regis College, Weston, Massachusetts; Caswell A. Evans, Jr., D.D.S., National Oral Health Initiative, Office of the U.S. Surgeon General, Rockville, Maryland; David W. Fleming, M.D., CDC, Atlanta, Georgia; Mindy Thompson Fullilove, M.D., New York State Psychiatric Institute and Columbia University, New York, New York; Fernando A. Guerra, M.D., San Antonio Metropolitan Health District, San Antonio, Texas; George J. Isham, M.D., HealthPartners, Minneapolis, Minnesota; Charles S. Mahan, M.D., College of Public Health, University of South Florida, Tampa, Florida; Patricia Dolan Mullen, Dr.P.H., University of Texas–Houston School of Public Health, Houston, Texas; Susan C. Scrimshaw, Ph.D., University of Illinois School of Public Health, Chicago, Illinois; and Robert S. Thompson, M.D., Department of Preventive Care, Group Health Cooperative of Puget Sound, Seattle, Washington also served on the Task Force while the recommendations were being developed.

The *Morbidity and Mortality Weekly Report (MMWR)* Series is prepared by the Centers for Disease Control and Prevention (CDC) and is available free of charge in electronic format and on a paid subscription basis for paper copy. To receive an electronic copy each week, send an e-mail message to listserv@listserv.cdc.gov. The body content should read *SUBscribe mmwr-toc*. Electronic copy also is available from CDC's World-Wide Web server at <http://www.cdc.gov/mmwr> or from CDC's file transfer protocol server at <ftp://ftp.cdc.gov/pub/publications/mmwr>. To subscribe for paper copy, contact Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402; telephone 202-512-1800.

Data in the weekly *MMWR* are provisional, based on weekly reports to CDC by state health departments. The reporting week concludes at close of business on Friday; compiled data on a national basis are officially released to the public on the following Friday. Address inquiries about the *MMWR* Series, including material to be considered for publication, to Editor, *MMWR* Series, Mailstop C-08, CDC, 1600 Clifton Rd., N.E., Atlanta, GA 30333; telephone 888-232-3228.

All material in the *MMWR* Series is in the public domain and may be used and reprinted without permission; citation as to source, however, is appreciated.

All *MMWR* references are available on the Internet at <http://www.cdc.gov/mmwr>. Use the search function to find specific articles.

Use of trade names and commercial sources is for identification only and does not imply endorsement by the U.S. Department of Health and Human Services.

References to non-CDC sites on the Internet are provided as a service to *MMWR* readers and do not constitute or imply endorsement of these organizations or their programs by CDC or the U.S. Department of Health and Human Services. CDC is not responsible for the content of these sites. URL addresses listed in *MMWR* were current as of the date of publication.