# Impact of Safe@Home on Placement and Permanency Outcomes:

## Results of a quasi-experimental study

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## Abstract

The purpose of this study was to rigorously test the effectiveness of Safe@Home, an in-home parent skill-based intervention implemented in Clark County, Nevada. Safe@Home is designed to prevent out-of-home placement for children at imminent risk of placement (Placement Prevention population) and minimize time in out-of-home care for children already in foster care (Reunification population). This paper presents a retrospective, longitudinal, quasi-experimental study that examined placement and permanency outcomes of Safe@Home. Using Coarsened Exact Matching (CEM), children who received Safe@Home were matched to a historical comparison group of children served before Safe@Home was available in their community. All children in the study were determined by Clark County Department of Family Services to be unsafe and in need of immediate intervention. Children were matched based on age, race/ethnicity, previous in-home or out-of-home child welfare case, and safety threats Matched study samples demonstrated strong baseline equivalence. Children who received Safe@Home experienced a significantly lower rate of out-of-home placements, substantially higher rate of permanency with a parent, fewer days in out-of-home care, and shorter time to case closure. There was no effect of Safe@Home on post-permanency outcomes of maltreatment after case closure and re-entry. Large favorable placement prevention effects were sustained for 12 months after the end of Safe@Home.

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# Impact of Safe@Home

## ON PLACEMENT AND PERMANENCY OUTCOMES: RESULTS OF A QUASI-EXPERIMENTAL STUDY

Sarah Kaye, Ph.D. & Lucia M. Reyes, Ph.D.

This summary presents results of a rigorous quasi-experimental study examining the effectiveness of Safe@Home, implemented by Clark County Department of Family Services (CCDFS) as part of their comprehensive SAFE practice model. Children served by Safe@Home were matched to a comparison group of children served before Safe@Home was available in their community. Children were matched based on age, race/ethnicity, previous history with child welfare, and safety threats. All children in the study were determined to be unsafe by CCDFS.

## Key Finding

### Lower rates of out-of-home placement


21% of **Safe@Home** cases were placed out-of-home, compared to 84% in the **comparison** group. **Placement prevention effects were sustained for over 12 months after the end of Safe@Home.**

## Findings

Children who received Safe@Home experienced:

### Outcomes for Unsafe Kids At-Risk of Placement

180 children whose families received Safe@Home to prevent their placement in foster care were matched with 344 children in the comparison group

87% of children served by **Safe@Home** achieved permanency with a parent, compared to 53% in the **comparison** group.

### Higher rates of permanency with parent

### Outcomes for Unsafe Kids in Foster Care

330 children whose families received Safe@Home after being placed out-of-home to facilitate reunification were matched with 507 children in the comparison group

88% of children served by **Safe@Home** achieved reunification with a parent, compared to 50% in the **comparison** group.

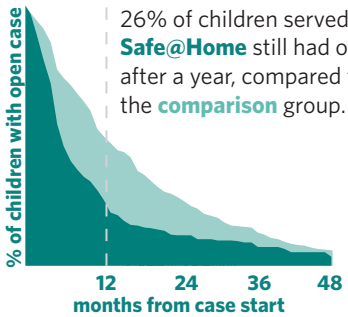
### Days in Out-of-Home Care


On average, one year from case opening, children served by **Safe@Home** spent 55 days in out-of-home care, compared to 221 days in the **comparison** group.

### Fewer days in foster care

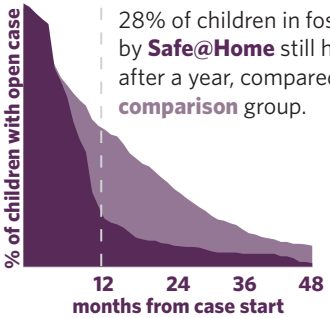
### Days in Out-of-Home Care


On average, one year from case opening, children served by **Safe@Home** spent 153 days in out-of-home care, compared to 228 days in the **comparison** group.




26% of children served by **Safe@Home** still had open cases after a year, compared to 53% in the **comparison** group.

### Shorter time to case closure




28% of children in foster care served by **Safe@Home** still had open cases after a year, compared to 57% in the **comparison** group.

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Action 4 Child Protection

For more information about this study, please contact Sarah Kaye at sarah@kayeimplementation.com.

# Safe@Home Intervention

## About Safe@Home

Safe@Home is an in-home parent skill-based intervention designed to keep children together with their families. Its goal is to minimize time in foster care or prevent out-of-home placement altogether for children that have been determined to be unsafe with their family. Safe@Home offers safety services in the categories of:

- behavior management (supervision and monitoring, stress reduction, behavior modification),
- social connection (parenting assistance, home management, social networking),
- crisis management (suicide prevention, relapse prevention, problem solving),
- separation (respite, day care, activities), and
- resource support (employment assistance, housing assistance, food, clothing, furnishings).

Safe@Home is tailored to address the unique safety threats identified by CCDFS for each family, and its service objectives, frequency, and duration can vary from family to family. Safe@Home is delivered by trained, professional, community-based Safety Managers who work with children's caseworkers to manage safety plans and make adjustments as needed. Service intensity is customized to ensure that threats are sufficiently managed, needs are met, and children are safe while at home.

## Service Populations

Safe@Home serves children of all ages who are determined by CCDFS to be unsafe with their families and who have cases opened for ongoing service

**(1) Placement Prevention:** Children and their families receive Safe@Home as part of in-home safety plans that are intended to prevent out-of-home placement.

**(2) Reunification:** Children and their families receive Safe@Home in order to reunify children and parents/caregivers following out-of-home placement.

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Safe@Home is the community-based safety management component of a comprehensive child welfare practice model, the Safety Assessment and Family Evaluation (SAFE) developed by Action for Child Protection. SAFE provides structured assessments and decision-making criteria that guide case activities within the public child welfare agency.[1] The practice model was implemented by CCDFS during the Safe@Home study period.

Detailed information about Safe@Home is available in its intervention manual.[2] Implementation supports for Safe@Home include:

- multiple family assessments,
- training for caseworkers and community-based safety managers,
- training for supervisors,
- case consultation,
- fidelity review tools, and
- implementation planning and technical assistance that is tailored to the needs and goals of the implementing agency.

For more information, visit action4cp.org/our-services/practice-model or contact Todd Holder at todd.holder@actionchildprotection.org.

[1]Holder, T. (2021) Safety Assessment and Family Evaluation model: A systematic change based approach to public child welfare intervention. Child Welfare, 99(2).

[2]Holder, T., Holder, W. & Kleinedler, J. (2016). Safety Assessment Family Evaluation. Safe@Home: A community based approach to safety management [Manual]. ACTION for Child Protection.

# Research Methods

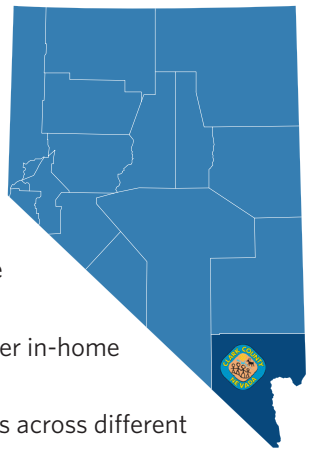
## Sample Selection

The intervention study sample was drawn from children whose families received Safe@Home in Clark County, Nevada, between August 2015 and April 2019. Using population-level administrative data, children that received the intervention were matched to children from a historical comparison group who were also determined to be unsafe and served by CCDFS prior to Safe@Home implementation in their community.

Children in both service populations were matched to comparison children at the completion of the initial assessment. Children were matched based on child age, child race/ethnicity, previous in-home or out-of-home (OOH) child welfare case, and impending danger threats (i.e., specific safety threats identified by CCDFS during the initial assessment). Matching was conducted using coarsened exact matching (CEM).[3-4] A focal child for each family was randomly selected after matching to account for non-independence.

## Analysis

The evaluation team utilized several strategies to ensure a rigorous quasi experimental study, consistent with standards and procedures outlined by the Title IV-E Prevention Services Clearinghouse.[5]



- Analysts developed and used data quality assurance standards to ensure valid and reliable measurement.
- Statistical analyses included logistic regressions, Tobit regressions, and Cox proportional hazard models.
- Final statistical models controlled for child age, child race, and impending danger threats
- Analysts accounted for differences in observation periods between the intervention and historical comparison group, as well as "censored" permanency outcomes for cases that were still open at the end of the observation period.[6-7]
- Strategies used to analyze sustained effects were informed by analysis strategies used by other in-home parent skill-based programs rated by the Clearinghouse as supported and well-supported.[8-9]
- Analysts calculated effect sizes following guidance from the Clearinghouse to compare results across different statistical models.[10-11]

## Limitations

This study was limited by a retrospective design that relied entirely on administrative data, which restricted the outcomes that could be examined. Contemporaneous comparison groups are typically preferred over historical comparison groups when it is feasible. To minimize potential confounding factors due to historic comparison periods, analysts (1) carefully matched comparison cases to increase internal validity, and (2) sampled from discrete periods of time to accommodate other potential influences identified by CCDFS leadership -- most notably SAFE implementation timeframes.

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[4]King, G., & Nielsen, R. (2019). Why propensity scores should not be used for matching. Political Analysis, 24(4). https://doi.org/10.1017/pan.2019.11

[5]Wilson, S. J., Price, C. S., Kerns, S. E. U., Dastrup, S. D., & Brown, S. R. (2019). Title IV-E Prevention Services Clearinghouse Handbook of Standards and Procedures, version 1.0, OPRE Report # 2019-56, Washington, DC: Office of Planning, Research, and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services. Retrieved from: https://tacfs.org/docs/psc_handbook_v1_final_508_compliant.pdf

[6]Cox, D. R. (1972). Regression models and life tables. Journal of the Royal Statistical Society, 34, 187–220.

[7]Sashegyi, A., & Ferry, D. (2017). On the interpretation of the hazard ratio and communication of survival benefit. The Oncologist, 22(4), 484–486. https://doi.org/10.1634/theoncologist.2016-0198

[8]Beachy-Quick, K., Lee, C., McConnell, L., Orsi, R., Timpe, Z., & Winokur, M. (2018). SafeCare Colorado program evaluation report 2014-2017. Colorado Office of Early Childhood.

[9]Huhr, S., & Wulczyn, F. (2020a). Do intensive in-home services prevent placement?: A case study of Youth Villages' Intercept® program. The Center for State Child Welfare Data. https://fcda.chapinhall.org/wp-content/uploads/2019/10/YV-Intercept-Results-1-8-2020-final.pdf

[10]Sánchez-Meca, J., Marín-Martínez, F., & Chacón-Moscoso, S. (2003). Effect-size indices for dichotomized outcomes in meta-analysis. Psychological Methods, 8(4), 448.

[11]Grant, R. L. (2014). Converting an odds ratio to a range of plausible relative risks for better communication of research findings. BMJ, 348, f7450.

# Results

This rigorous quasi-experimental study offers strong initial support for average population-level treatment effects of Safe@Home in key outcome areas that are important to child welfare systems' goals of keeping children safe and families together.

## Child Characteristics

Both of the study populations demonstrated strong "baseline equivalence" with their matched comparison groups. Meaning, at the beginning of their cases, the intervention groups and comparison groups were similar to one another. Any minor differences between groups were statistically controlled during analysis.

**Table 1. Characteristics of the intervention samples and their matched comparison groups**

| | Placement Prevention | | Reunification | |
|---|---|---|---|---|
| | Safe@Home *n* = 180 | Matched Comparison *n* = 344 | Safe@Home *n* = 330 | Matched Comparison *n* = 507 |
| Child age, years, M | 6.2 | 6.2 | 5.1 | 5.4 |
| Black | 23.9% | 27.9% | 24.6% | 30.6% |
| White | 33.3% | 32.9% | 36.4% | 34.5% |
| Hispanic | 28.3% | 28.8% | 25.5% | 25.3% |
| Other/unknown | 14.4% | 10.5% | 13.6% | 9.7% |
| Previous In-home or OOH program | 22.2% | 23.0% | 26.4% | 24.5% |
| ID: Maltreatment | 2.2% | 2.0% | 4.6% | 3.9% |
| ID: Child Functioning | 3.3% | 3.5% | 5.5% | 5.1% |
| ID: Parenting | 71.7% | 74.4% | 69.7% | 72.6% |
| ID: Adult Functioning | 75.6% | 79.1% | 88.2% | 87.2% |

ID= impending danger threat

*None of the differences between the intervention and comparison group were statistically significant

## Outcomes

Results revealed that children who received Safe@Home experienced:

- **Lower rates of out-of-home placement**
- **Fewer days in foster care**
- **Higher rates of permanency with parent**
- **Shorter time to case closure**

**The prevention of out-of-home placement effect for children in the placement prevention population was sustained for 12 months after the end of Safe@Home services.**

Effect sizes describe the magnitude of the difference between the intervention and comparison groups. Conventional cutoffs describe effects as small (*d* = 0.20 to .49), medium (*d* = .50-.79), and large (*d* ≥ .80).

**Table 2. Summary of outcomes and effect sizes**

| | Placement Prevention | | Reunification | |
|---|---|---|---|---|
| *Outcome* | *d* | *Effect Size* | *d* | *Effect Size* |
| OOH placement prevention (during case episode) | 1.95 | Large favorable | - | - |
| OOH placement prevention (sustained for 12 months after end of services) | 1.07 | Large favorable | - | - |
| Length of time in OOH | 2.51 | Large favorable | .55 | Medium favorable |
| Case closure within a year | .76 | Medium favorable | .75 | Medium favorable |
| Permanency with a parent | .29 | Small favorable | .29 | Small favorable |

Study found no significant differences in maltreatment after case closure or re-entry into OOH at 6 months or 12 months.

# Background

Public child welfare agencies around the United States are charged with the responsibility for ensuring children's safety. When believed necessary, agencies and courts intervene in families' lives, sometimes removing children from their families in order to keep children safe. Once removed, agencies must promote children's ongoing safety, permanency, and well-being. The overarching goal, however, is to keep children safe with their families intact as often as possible, either through prevention of out-of-home placements or timely reunification.

## Family First Prevention Services Act (FFPSA)

The *Family First Prevention Services Act (FFPSA)* of 2018 is federal legislation designed to prioritize keeping families together. FFPSA allows states more flexibility with federal funds by enabling them to maintain children who are "candidates for foster care" in their homes with prevention services in place. Under FFPSA, states can use federal funds to deliver evidence-based (1) mental health, (2) substance abuse, and (3) in-home parent skill-based programs to (a) families with children who are identified in a prevention plan as being at "imminent risk for foster care" but who can remain safely at home with these support programs in place, or (b) children in foster care who are pregnant or parenting (Family First Prevention Services Act, 2018).

## Candidates for Foster Care

The FFPSA legislation and program instructions that have been released through the Children's Bureau, the federal agency in the U.S. Department of Health and Human Services that oversees child welfare programs and services, has allowed flexibility in how states define "candidates for foster care" (Children's Bureau, 2018). A recent review of FFPSA candidacy by child welfare jurisdictions suggests that states are defining candidacy in different ways. Some states have proposed broad definitions of candidacy that could expand their agency's service population to include children in the community with significant risk factors. Other states have proposed to deepen their current work with more narrowly defined candidacy that focuses on children at high risk that are already being served by the child welfare agency (Chapin Hall & Casey Family Programs, 2020).

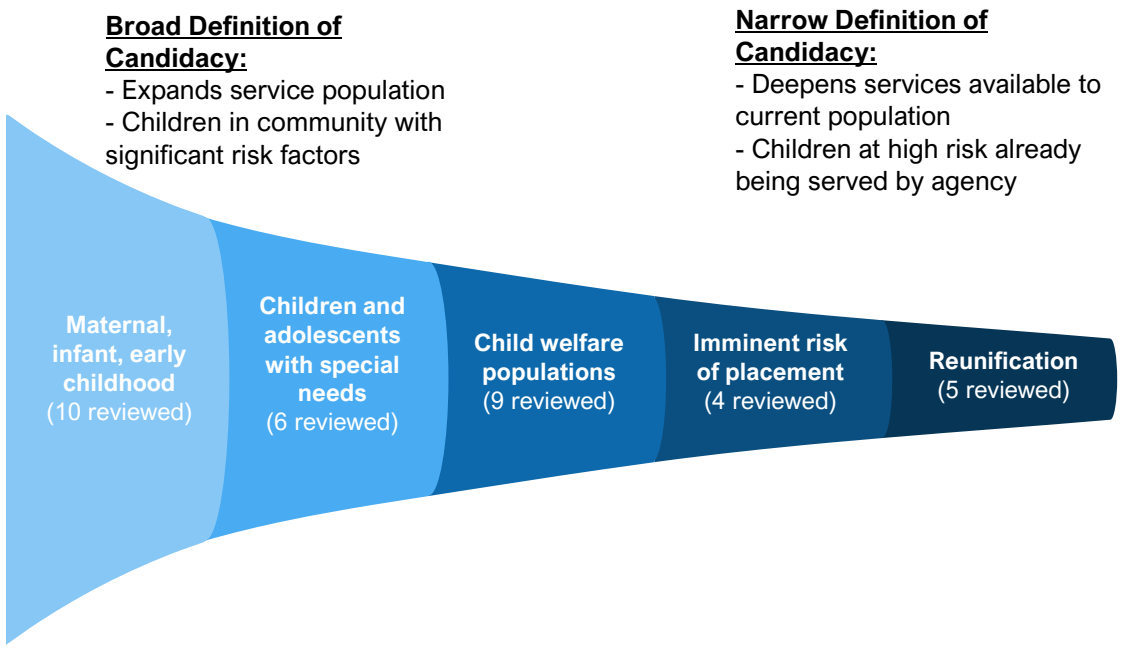
## Review of Current FFPSA-approved Programs

The Title IV-E Prevention Services Clearinghouse (Clearinghouse) is responsible for reviewing and rating the research evidence to curate the list of programs that states may choose from as part of their Prevention Services Plan. Eighteen in-home parent skill-based programs had been reviewed by the Clearinghouse through the end of March 2021 (Title IV-E Prevention Services Clearinghouse, 2021). Among the 18 reviewed, six were rated as well-supported, three were supported, and two were promising. Seven interventions did not meet review criteria, typically because their evaluation design did not meet the Clearinghouse's rigorous methodological requirements.


**18 In-Home Parent Skill-Based Programs Reviewed** (as of March 2021)
6 Well-supported
3 Supported
2 Promising
7 Do not meet criteria

The in-home parent skill-based programs reviewed by the Clearinghouse focus on different service populations. Ten interventions include primary prevention programs that are designed to prevent maltreatment; these are often early intervention programs for infants and toddlers. Six programs are designed to support parents with child or adolescent behavior or adjustment challenges. Nine programs were developed for families that have been referred to child protective services and may have open foster care cases. Four programs specifically focus on children that are at imminent risk of placement into foster care due to child abuse or neglect and/or aiming to reunify from foster care, and five are designed to support children in out-of-home care to reunify with their families.

**Figure 1. Service populations of reviewed in-home parent skill-based programs**
Note: Programs may serve more than one service population




The in-home parent skill-based programs that serve children and families actively involved with child welfare services use different approaches to working with families, including:

- standardized parenting curricula (Nurturing Parenting Program, SafeCare, SafeCare Augmented),
- pairing parents of children in foster care with an advocate with lived experience for support and advocacy (Iowa Parent Partner Approach),
- a casework practice model (Solution Based Casework),
- family therapy (Family Centered Treatment), and
- intensive home visits with individualized case planning (Homebuilders, Intercept, Sobriety Treatment and Recovery Teams-START).

As of March 2021, four programs reviewed by the Clearinghouse have demonstrated favorable effects on preventing out-of-home placement (Homebuilders, Intercept, SafeCare, START), and three programs have demonstrated favorable effects on facilitating timely reunification (Homebuilders, Intercept, Iowa Parent Partner Approach).

## Additional Research Needed

Families with children at imminent risk of placement are different from other vulnerable populations. This is important to consider when aspiring to adopt evidence-based models, build evidence-based systems, or engage in rigorous evaluations of existing child welfare practices.

(1) Families involved with child welfare are typically involuntary participants involved with the child welfare agency as a result of government intervention.

(2) Children have often experienced maltreatment and/or circumstances dangerous enough that intervention is warranted to ensure that children are safe.

(3) Ongoing safety assessment and active safety management may be necessary for families whose children are assessed to be at imminent risk.

Child welfare agencies around the country serve children who are either at risk of entering foster care or seeking to reunify with their families every day. Often, accepted child welfare practices are not rigorously tested, and leaders are uncertain whether services and programs are achieving the outcomes they had hoped for children and families. Initiatives to adopt interventions that have been proven in other contexts can quickly become stifled by questions about the fit of these services for child welfare-involved families and whether similar outcomes can be expected. There is a clear and urgent need to continue studying how to effectively intervene in ways that ensure child safety while also preserving families whenever possible. Child welfare agency administrators need sound evidence to inform their decision-making about how to best keep children safe and respond to the needs of families.

# Study Objectives and Hypotheses

The purpose of this study was to rigorously test the effectiveness of an in-home parent skill-based intervention implemented by Clark County Department of Family Services (CCDFS) as part of their larger comprehensive practice model. This study aimed to examine the impact of Safe@Home on child safety and permanency outcomes, relative to a matched sample of children who were served before Safe@Home was available in their community. At the conclusion of their initial assessment, all of the children in the study were assessed by CCDFS to be unsafe and in need of immediate intervention. Prior to the implementation of Safe@Home, CCDFS had few safety resources to support families and allow children to remain home while parents/caregivers worked towards their case plan goals. Without in-home, community-based support, out-of-home safety plans were often the only option available to protect children.

The implementation and evaluation teams hypothesized that as a result of Safe@Home, children would experience improved placement, permanency, and safety outcomes. Specifically, we hypothesized that, relative to children with comparable characteristics and safety threats, children that received Safe@Home would experience:

1. lower rates of out-of-home placement,
2. reduced length of time in out-of-home care,
3. reduced time to case closure,
4. higher rates of permanency with a parent at case closure,
5. lower rates of repeat substantiated maltreatment after case closure, and
6. lower rates of entry in out-of-home care after case closure.

# Safe@Home Intervention

Safe@Home is the community-based safety management component of a larger child welfare practice model: the Safety Assessment and Family Evaluation (SAFE). Safe@Home provides home-based services to ensure that children are safe while at home with their families and parents/caregivers are making progress toward their case plan goals.

## Service Populations

Safe@Home serves children of all ages who are determined by CCDFS to be unsafe with their families and who have cases opened for ongoing services. Safe@Home has two primary service populations.

**(1) Placement Prevention:** Children and their families receive Safe@Home services as part of in-home safety plans that are intended to prevent out-of-home placement.

**(2) Reunification:** Children and their families receive Safe@Home services in order to reunify children and parents/caregivers following out-of-home placement.

## Description of Services

Safe@Home is tailored to address the unique safety threats identified by CCDFS for each family, and its service objectives, frequency, and duration can vary from family to family. Service intensity is customized to ensure that threats are sufficiently managed and needs are met, so that children are safe while at home. The typical duration of Safe@Home is 4-6 months, with an average of in-home services 4 days per week, and 17.25 hours of monthly contact.

Safe@Home offers in-home safety services that include:

- behavior management (supervision and monitoring, stress reduction, behavior modification),
- social connection (parenting assistance, home management, social networking),
- crisis management (suicide prevention, relapse prevention, problem solving),
- separation (respite, day care, activities), and
- resource support (employment assistance, housing assistance, food, clothing, furnishings).

## Service Providers

Safe@Home is delivered by community-based safety managers. Safety managers have bachelor's degrees in helping professions (such as psychology, sociology, counseling, social work, etc.). They receive 36 hours of training in a range of topics including assessing threats to children's safety, distinguishing negative from dangerous family conditions, and roles and responsibilities for safety management. In Clark County, Safe@Home was administered by five community-based agencies, five supervisors, and 43 safety managers.

Key features of Safe@Home in comparison to "services as usual" are highlighted in Table 1, below.

**Table 1. Description of practice in the intervention and comparison groups**

| Domain | Comparison: Services as Usual | Intervention: Safe@Home |
|---|---|---|
| **Safety Decision-Making** | Structured safety assessment and decision-making criteria were guided by the SAFE model. | Structured safety assessment and decision-making criteria were guided by the SAFE model. |
| **Availability of In-Home Safety Plans** | In-home safety plans were only available to families with natural supports available in their local communities. | Safe@Home community-based safety management services were available to all families who met criteria. |
| **In-Home Safety Service Providers** | When available, in-home safety providers were informal: friends, family or other supports for families. | Safe@Home in-home safety providers were formal: trained professionals working directly with families and managing safety plans which could also involve informal family supports. |
| **Service Delivery** | Out-of-home placements were relied upon to ensure safety for most children. When informal safety supports were available, safety services were delivered to families in their homes. | Safe@Home services were delivered to families in their homes either at the beginning of their cases (Placement Prevention population) or after placement in foster care (Reunification population). |
| **Ongoing Communi-cation** | When in-home safety services were available, no formal feedback mechanism existed between informal in-home safety providers and caseworker. | Safe@Home community-based safety managers provided regular updates to permanency specialists (i.e., CCDFS caseworkers) as part of ongoing communication and safety management. |

### Implementation Supports

Detailed information about the Safe@Home intervention and its components are available in its intervention manual (Holder, Holder, & Kleinedler, 2016). Implementation supports for Safe@Home include:

- multiple family assessments,
- training for caseworkers and community-based safety managers,
- training for supervisors,
- case consultation,
- fidelity review tools, and
- implementation planning and technical assistance that is tailored to the needs and goals of the implementing agency.

For more information contact Todd Holder at todd.holder@actionchildprotection.org.

# Previous Research

CCDFS implemented Safe@Home during its Title IV-E Waiver Demonstration Project from July 2015 to September 2019. As part of that project, outcomes of children who received Safe@Home were evaluated relative to a comparison group of children who received informal in-home safety services during the same time period (Nevada Institute for Children's Research and Policy, 2020).

Results from the implementation study revealed a high demand for Safe@Home services, with caseworkers referring nearly double the number of families than expected. The implementation study also gathered qualitative feedback from families, community-based in-home safety managers, and caseworkers which indicated overall positive experiences with Safe@Home and some specific recommendations for improvements (Nevada Institute for Children's Research and Policy, 2020).

The outcome study focused primarily on incidents of maltreatment while cases were open and after case closure. The study did not detect significant differences between the intervention and comparison groups. Results from the outcome study are difficult to interpret because the treatment and comparison groups were imbalanced on several measured characteristics. Additionally, the authors noted, "It is possible that just by virtue of having access to these types of informal supports, the comparison group families had a greater likelihood of success than the treatment group families" (NICRP, 2020, p. 64).

To supplement the external evaluation, CCDFS conducted additional analyses on its internal data in a final report to the Children's Bureau. CCDFS reported that Safe@Home helped the county to achieve the goals of the Title IV-E Waiver. CCDFS included aggregate population-level analysis that demonstrated a trend toward (1) increasing percentages of children served through in-home safety plans and (2) decreasing average lengths of stay in out-of-home care during the period that Safe@Home was implemented (Nevada Department of Health and Human Services Division of Child and Family Services, 2020).

The study described in this report is designed to add to stakeholders' understanding of Safe@Home in Clark County and to contribute to the evidence base about Safe@Home more broadly, by:

- examining placement and permanency outcomes that are directly related to FFPSA's goals for keeping families together,
- constructing a comparison group that is matched on child characteristics and case circumstances, and
- defining the counterfactual to capture the population-level treatment effects of Safe@Home compared to public child welfare services as usual for a population of children determined by CCDFS to be unsafe with their families.

# Research Methods

## Retrospective Longitudinal Quasi-Experimental Design

CCDFS leadership feels a strong responsibility to provide high-quality interventions in the least restrictive environment. With resources provided by the Title IV-E Waiver, CCDFS had the ability to make Safe@Home available county-wide relatively quickly. Although evaluation designs that include random assignment offer the highest levels of research rigor to assess the impact of interventions, CCDFS believed that withholding services that could keep children with their families and prevent the trauma of out-of-home placements would be unethical.

As an alternative, the evaluation team at Kaye Implementation & Evaluation proposed a quasi-experimental design using a historical within-county comparison group. Several research design considerations influenced this recommendation. A principal concern was that child welfare policies and practices vary from state to state. This could have introduced numerous confounding factors to a cross-jurisdictional examination of the child welfare outcomes that were of interest in this study. Within the state of Nevada, Clark County (Las Vegas) is the largest and most urban community with unique social-demographic characteristics and a unique service array, which limits the validity of comparison to other counties within the state. Additionally, the most similar county within Nevada (Reno) had been implementing a related version of Safe@Home prior to implementation in CCDFS and would not have offered a strong "services as usual" comparison.

While a historic comparison group offered the most rigorous comparison group in these circumstances, it also introduced limitations.

### Potential Limitation #1 - Differences in the characteristics of children and families served during the intervention period and the comparison period

Children were selected into the study sample over a multi-year period, during which there could have been natural fluctuations in the types of cases reported to CCDFS or opened for service. To account for possible differences in cases served over the study period, children in the intervention group were matched to children in the comparison group based on demographics and other case characteristics that could influence outcomes.

### Potential Limitation #2 - Changes to practice over time or other major events

The evaluation team assessed this potential limitation in consultation with the CCDFS leadership team who has deep contextual knowledge of child welfare services in Clark County. The implementation and evaluation teams determined that the service array, an important contributor to placement and reunification outcomes, had been stable throughout the previous decade. The primary changes to child welfare services within the county during this period were: (1) implementation of the SAFE practice model, which began at the beginning of the comparison period and continued beyond the intervention period and the end of this study, and (2) the addition of the Safe@Home intervention that was being evaluated, which began at the beginning of the intervention period and continued beyond the end of this study. Therefore, it is important to note that the effects of Safe@Home in this study were observed in the context of SAFE implementation.

## Intervention and Evaluation Timeframes

The SAFE practice model and Safe@Home were implemented using a staged rollout schedule across six administrative geo-zones. Table 2 lists the start and end dates of the intervention groups and the comparison groups for the evaluation. Zone-specific start and end dates for the comparison groups were selected over assigning a single consistent start and end date for all geo-zones to include the greatest number of children and families served and to accommodate known differences in CCFDS practice expectations. The specialized unit includes cases referred for severe physical and sexual abuse, so those specific danger threats were accounted for during the matching process to minimize any potential influence on outcomes.

**Table 2. Intervention and comparison sampling timeframes, by geo-zone**

| Geo-Zone | Comparison Sample Selection Timeframe (Launch of SAFE through launch of Safe@Home) | Intervention Sample Selection Timeframe (Safe@Home served through April 2019) |
|---|---|---|
| South | Nov 2013 - Aug 2015 | September 2015 - April 2019 |
| West | Mar 2014 - Oct 2015 | November 2015 - April 2019 |
| East | Jul 2014 - Dec 2015 | January 2016 - April 2019 |
| Central | Oct 2014 - Dec 2015 | January 2016 - April 2019 |
| North | Apr 2015 - July 2016 | August 2016 - April 2019 |
| Specialized | Jan 2015 - July 2016 | August 2016 - April 2019 |
| **Note: All children were observed until June 30, 2020** | | |

## Participants

Safe@Home serves children of all ages who are determined by CCDFS to be unsafe with their families and who have cases opened for ongoing services. Safe@Home aims to achieve:

(1) **Placement Prevention:** Children and families receive Safe@Home services as part of in-home safety plans that are intended to prevent out-of-home placement.

(2) **Reunification:** Children and families receive Safe@Home services in order to reunify children and parents/caregivers following out-of-home placement.

The population for this study consists of two non-overlapping study samples.

(1) **Placement Prevention:** *n* = 180 Placement Prevention Safe@Home children and *n* = 344 matched comparison children

(2) **Reunification:** *n* = 330 Reunification Safe@Home children and *n* = 507 matched comparison children

Safe@Home and comparison cases were matched based on demographic characteristics, previous child welfare history, and impending danger threats.

## Sample Inclusion/Exclusion Criteria

**Table 3. Inclusion and exclusion criteria for the intervention and comparison groups**

| | Intervention Group | Comparison Group |
|---|---|---|
| **Inclusion** | - Child's case ID listed on Safe@Home program records<br>- Child determined to be "unsafe" at initial assessment<br>- Intake date during intervention timeframe | - Child determined to be "unsafe" at initial assessment<br>- Intake date during comparison timeframe |
| **Exclusion before matching** | - Child determined to be "safe" at initial assessment<br>- Child or case ID listed in Safe@Home program files could not be verified in administrative data<br>- Intake date during comparison timeframe | - Child determined to be "safe" at initial assessment<br>- Zero parent contacts[1]<br>- Child later becomes part of intervention group<br>- Intake date during intervention timeframe |
| **Exclusion after matching** | - Missing outcomes data<br>- Started Safe@Home over one year after child welfare case opening[2] | - Missing outcomes data |

[1] Zero parent contacts could indicate parent whereabouts were unknown, and therefore the child would not be a strong candidate for reunification outcomes.
[2] Outcomes were examined within the first year of case opening. Safe@Home children were excluded from this analysis if they were not served by Safe@Home within that time period.

# Analytic Procedures

Retrospective studies that rely on secondary data are vulnerable to bias because some or all the outcomes have occurred before the study begins. To promote research integrity, the evaluation team structured an approach to data management and analysis that ensured that the analysts were blind to outcomes when applying inclusion/exclusion criteria and selecting matched comparison cases. Examples of methodological safeguards included:

- Children were matched based on demographic and case characteristics data before the evaluation team had access to data about child outcomes.
- Data quality assurance checks were completed during outcome calculations for children in the full sample before any comparative analyses were conducted.

## Coarsened Exact Matching

The comparison group was constructed by matching children in the intervention group to children with similar characteristics, including: child age, race/ethnicity, previous child welfare involvement, and impending danger threats identified during the initial assessment. Children were matched at completion of the initial assessment when workers were determining whether the child was safe or unsafe. When the child was determined to be unsafe, workers also determined whether to intervene with an in-home or out-of-home safety plan. Assessing outcomes from this point forward provided the same baseline information for intervention and comparison groups and allowed for evaluation of placement prevention as well as other child welfare outcomes of interest in this study.

Potential comparison cases that met inclusion criteria for the comparison group were selected to match characteristics of the intervention group in a 1:1 ratio, using coarsened exact matching (CEM; Blackwell, Iacus, King & Porro, 2009). CEM technique temporarily "coarsens" continuous variables by grouping them into categories, exact matches cases using the coarsened data, then prunes unmatched cases before passing the original uncoarsened values for subsequent analyses. Compared to other matching methods (e.g., propensity score matching, approximate/distance matching), CEM provides stricter matching criteria and has been shown to be more effective in reducing imbalance between samples (King & Nielsen, 2019). CEM has been used in quasi-experimental designs that have been rated "moderate" by the Clearinghouse when using similar data to assess similar outcomes (Huhr & Wulczyn, 2020).

Although socio-economic status (SES) was also considered to be an important characteristic on which to match cases, there were no reliable data sources that could be used as indicators of socio-economic status. More than a third of the intervention sample were missing documentation of income data, and income data were more likely to be missing among children in families with in-home safety plans. All children in out-of-home placements were eligible for Medicaid regardless of family income, and therefore Medicaid eligibility was not a valid proxy for SES in this study.

Impending danger threats identified during the initial assessment were used as an "alternative pretest" because they directly relate to the safety assessment and the decision to refer to Safe@Home and were also hypothesized to be associated with case outcomes. Eleven impending danger threat indicators were collapsed into four substantive categories in consultation with Safe@Home developers (see Table 4). A dichotomous indicator (i.e., 0 = no, 1 = yes) of the presence of an impending danger in each category was used for matching.

**Table 4. Description and categorization of impending danger threats**

| Category | Impending Danger Threat Description |
|---|---|
| Maltreatment | One or both parents/caregivers cannot or do not explain the child's injuries and/or conditions. |
| Child functioning | A child is extremely fearful of the home situation. |
| Adult functioning | A parent or caregiver is violent and no adult in the home is protective of the child. |
| | One or both parents'/caregivers' emotional stability, developmental status or cognitive deficiency seriously impairs their ability to care for the child. |
| | One or both parents/caregivers cannot control their behavior. |
| | The family does not have resources to meet basic needs. |
| Parenting | No adult in the home will perform parental duties and responsibilities. |
| | One or both parents/caregivers have extremely unrealistic expectations. |
| | One or both parents/caregivers have extremely negative perceptions of a child. |
| | One or both parents/caregivers lack parenting knowledge, skills, and motivation which affect child safety. |
| | A child has exceptional needs which the parents/caregivers cannot or will not meet. |

## Assessing Baseline Equivalence

Differences in baseline characteristics between the Safe@Home groups and comparison groups were compared using independent samples *t*-tests for continuous variables (e.g., child age) and chi-squared tests for categorical variables (e.g., child race/ethnicity). Effect sizes for baseline differences were also estimated using Hedges' *g* (Hedges & Olkin, 1985) for continuous variables (e.g., child age) and Cox's *d* (Cox, 1970) cited by Haddock and colleagues (1998) for dichotomous variables (e.g., previous child welfare involvement). Cox's *d* was calculated by dividing the log odds ratio by the constant 1.65 and was used to approximate a normal distribution, so that effects in dichotomous data could be compared in a similar metric to other standardized measures, such as Hedges' *g* (Sánchez-Meca, Marín-Martínez, & Chacón-Moscoso, 2003). Effect sizes that fell within the Clearinghouse adjustment range are noted in Table 7 in the Results section.

## Outcome Calculations

Outcome data about placements and permanency were only provided for the matched sample of children in the intervention and comparison groups. Outcome variables were constructed based on the following definitions:

1a. **Rate of out-of-home placement** was defined as the percent of children that were ever placed in out-of-home care during the identified child welfare episode.

1b. **Sustained prevention of out-of-home placement** was defined as having spent no days in out-of-home care during the twelve-months following the end of services for children that received Safe@Home (or a comparable twelve-month follow-up period for the comparison group; see Examining Sustained Effects section for details).

2. **Length of time in out-of-home care** was calculated by summing the total days that children spent in out-of-home placements within a child welfare episode.

3. **Time to case closure** was quantified as the total number of days between the child welfare case start and end dates, regardless of whether the child was in an in-home or out-of-home placement.

4. **Permanency with a parent** was operationalized as being in a parental placement when the child welfare case closed.

5. **Repeat maltreatment** was defined as the presence of one or more substantiated maltreatment allegations (a) within six months of case closure and (b) within twelve months of case closure.[3]

6. **Re-entry in out-of-home care** was defined as whether the child experienced a new out-of-home placement (a) within six months of case closure and (b) within 12 months of case closure.

[3] The initial design aimed to evaluate maltreatment reports while cases were open, but implementation data and feedback from CCDFS staff indicated that maltreatment reports were substantiated for Safe@Home cases as a workaround necessary to trigger a change in safety plans due to early implementation practice and a requirement of the UNITY data system. It was not possible to distinguish true repeat maltreatment from intentional intervention activities in the intervention group with the available data. This circumstance was only present in the intervention group and not the comparison group. As a result, maltreatment reports while cases were open were no longer a valid measure of repeat maltreatment so this outcome was dropped from the study.

## Quality Assurance

Because child welfare administrative data involves hundreds of workers entering information about children and families, data entry procedures and quality can vary. For example, children living at home with their parents could be recorded by CCDFS workers in its data system as (a) a "parent placement" in the out-of-home placements table, (b) receiving an "in-home program" in the program table, or (c) both. Data analysts used several strategies to ensure data quality while constructing outcome variables and developed decision-making criteria to promote valid and reliable measurement. Data were triangulated using multiple sources of administrative records. Child welfare in-home program dates were used to corroborate suspected data entry errors in placement data (e.g., placements that were missing end dates). The same data management procedures were used in both the intervention and comparison groups, and new exclusion criteria were developed during the quality assurance stage.

- If necessary information to construct variables for the outcome analysis could not be located (e.g., children had no child welfare program dates or placement information to indicate when the child welfare episode took place), children were excluded during the quality assurance stage.
- Because the study was examining some outcomes within the first year of the case, children in the Safe@Home group were excluded if they started Safe@Home over a year after their placement episode began.[4]

## Outcome Analysis

Outcomes were analyzed using the two Safe@Home samples (Placement Prevention and Reunification) and their respective comparison groups. All analyses were conducted at the child level. All statistical analyses were performed using Stata (v.17).

### Accounting for Multi-Level Influences on Outcomes

The initial analytic approach included all of the children in the family. Analysts attempted to correct for non-independence of children within families using multi-level models, but the intra class correlations (ICC) for the family variable in every model approached 1, which indicated that there was almost no variation within families for these child welfare outcomes. The lack of within-family variation made it impossible to obtain valid estimates using multi-level models. As an alternative, analysts randomly sampled one child per family to serve as a focal child using the *sample* command in Stata v17. This approach reduced the final sample size but eliminated the problem of non-independence. Although the random selection of the focal child occurred after the initial matching, the final reduced sample showed good baseline equivalence between the intervention and comparison group. Baseline equivalence and all the results presented in this report are based on the final reduced sample.

Children in the study population were served within administrative geo-zones that could have introduced a source of variation in practice and/or variations in populations of children and families served as a result of geography across the county. Unconditional multi-level models for

[4] Children typically receive Safe@Home within one year of out-of-home placement, but families are not excluded from Safe@Home based on how the long the child has been in foster care. In some extenuating circumstances, families may not be able to participate in Safe@Home during the first year if the parent is not available due to inpatient treatment or incarceration (as possible examples).

all outcomes showed that ICCs for administrative geo zones were minimal (<.001), which indicated that correcting for geo-zone was not necessary in the final analysis. Thus, fixed effects models were used instead.

## Statistical Models

For the impact analyses, conventional statistical models were selected based on the type of outcome being tested. Logistic regressions were used to model dichotomous outcomes, such as whether an event occurred or not, and were thus used for most of the outcomes tested, as shown in Table 5. Logistic regressions estimate odds ratios, which represent the odds of an event happening in the intervention group compared to the odds of it happening in the comparison group. The odds can be interpreted as the probability of an event happening divided by the probability of the event not happening.

To analyze the impact of Safe@Home on the amount of time that children spent in out-of-home care, Tobit regressions were employed. Tobit regression models allow for continuous outcome variables that are both right and left censored. In the current study, many children in the sample spent zero days in out-of-home care. In addition, the maximum amount of time spent out of home was truncated at 365 days, to explore outcomes within a comparable period of time (i.e., the first year after the child welfare case opened) even for children that had different study observation periods. Tobit regressions attempt to estimate the impact of the independent variable on the uncensored dependent variable (Tobin, 1958).

**Table 5. Summary of statistical inference tests and sample size used for each outcome**

| Outcome (type) | Sample Size | Statistical Test |
|---|---|---|
| 1a. Out-of-home (OOH) placement prevention (dichotomous) | PP/C *n* = 524 | Logistic regression |
| 1b. Sustained OOH placement prevention 12 months after end of services (dichotomous) | PP/C *n* = 524 | Logistic regression |
| 2. Length of time (days) in OOH care within the first year of case start (count) | PP/C *n* = 524<br>R/C *n* = 837 | Tobit regression |
| 3. Case closure within a year of case start (dichotomous) | PP/C *n* = 524<br>R/C *n* = 837 | Logistic regression |
| 4. Permanency with a parent (time-to-event) | PP/C *n* = 524<br>R/C *n* = 837 | Cox proportional hazards regression |
| 5a. Maltreatment within 6 months after case closure (dichotomous) | PP/C *n* = 499<br>R/C *n* = 806 | Logistic regression |
| 5b. Maltreatment within 12 months after case closure (dichotomous) | PP/C *n* = 499<br>R/C *n* = 806 | Logistic regression |
| 6a. Re-entry in OOH within 6 months after case closure (dichotomous) | PP/C *n* = 499<br>R/C *n* = 806 | Logistic regression |
| 6b. Re-entry in OOH within 12 months after case closure (dichotomous) | PP/C *n* = 499<br>R/C *n* = 806 | Logistic regression |

PP/C = Placement prevention vs. comparison
R/C = Reunification vs. comparison
*Note*: A small percentage (< 5%) of the total sample still had open cases at the time that the study's observation period ended. These children were excluded from the analysis of outcomes #5-6 because these models were dependent on case closure.

## Statistical Adjustments

Following guidance from the Clearinghouse, baseline characteristics with effect sizes between *d* = 0.05 and 0.25 in the final matched sample were included as control variables in the final statistical models (Wilson et al., 2019). These control variables included child age, child race/ethnicity, and type of impending danger threats identified during the NIA for both Safe@Home groups and their respective comparison groups, as well as previous child welfare involvement for the Safe@Home Reunification group and its matched comparison group (previous child welfare involvement was not included in final models for the Safe@Home Placement Prevention group and its comparison group, because the baseline difference effect was less than *d* = 0.05).

Additionally, a dichotomous indicator of whether the child achieved permanency with a parent at case closure was included as a covariate in models that explored repeat maltreatment and re-entry in out-of-home care after case closure. Achieving permanency with a parent (as opposed to being adopted or placed with a guardian, for example) was expected to have a strong association with post-closure outcomes.

## Accounting for Time

The historical comparison group was observed for a longer period of time (up to 80 months, from November 2013 to June 2020) than the more recently observed intervention group (up to 59 months, from August 2015 to June 2020). Two strategies were utilized to account for the difference in observation length as well as the possibility that some cases may still be open and have not yet observed case closure or permanency outcomes (<5% of study sample).

First, analysts compared the proportion of children that experienced outcomes within comparable time intervals and calculated odds ratios using logistic regressions predicting whether or not the outcome was observed during that interval. For example, analysts estimated the proportion of cases that closed within 12 months of case start, and the proportion of cases that experienced re-entry within 6 months of case closure.

Second, analysts used Cox proportional hazards regressions to compare the "risk" of permanency with parents across time in both groups. Cox proportional hazard models are used to account for censoring (i.e., cases that have not yet experienced an outcome) in time-dependent outcomes (Cox, 1972). For instance, a case that is observed for longer periods of time is more likely to experience a case closure because case closure is dependent on time. Rather than estimating the odds, Cox proportional hazard models estimate hazard ratios, which in their simplest form can be interpreted as the ratio of the instantaneous rate at which an event is expected to happen in the intervention group compared to the comparison group (Sashegyi & Ferry, 2017). Thus, Cox proportional hazard models accounted for the difference in observation periods by comparing the instantaneous rate rather than an overall probability. In this model, the "time" variable was a continuous indicator of months from case start.

## Examining Sustained Effects

The timeframe for observing a sustained out-of-home placement prevention effect beyond the end of treatment was the twelve months following the end of Safe@Home for children in the Placement Prevention group. Since the comparison group cases did not have a similar end of intervention, their follow-up period was constructed by extrapolating a "wait period" based on the amount of time that these children likely would have been involved with Safe@Home had

they received the intervention. The duration of Safe@Home was six months or less for the majority (75%) of children in the Safe@Home Placement Prevention group, so a wait period of six months was used for their matched comparison group. Other studies of in-home parent skill-based programs rated by the Clearinghouse have used similar strategies (Beachy-Quick et al., 2018). Because there is no clearly accepted standard for assessing sustained effects, analysts conducted three variations of the analyses to assess the consistency of the findings using different approaches. Those methods and findings are described in the Appendix.

## Effect Sizes

Effect sizes for all dichotomous outcomes were computed from odds ratios obtained in final adjusted models using the Cox transformation (Sánchez-Meca et al., 2003). When models yielded hazard ratios, these were converted to risk ratios using the transformation described by Shor and colleagues (Shor, Roelfs & Vang, 2017) and then to odds ratios based on the transformations described in Grant (2014). (Raw calculations of the effect sizes are provided in the Supplementary Material). Effect sizes for continuous outcomes were calculated by dividing the unstandardized regression coefficient in adjusted models by the pooled standard deviation of the outcome variable. When presenting results, effects were described as *favorable*, if they were statistically significant in the intended direction of the intervention group, or *unfavorable* if the results were statistically significant in favor of the comparison group. Conventional cutoffs were used to describe effects as small ($d$ = 0.20 to .49), medium ($d$ = .50 to .79), and large ($d \geq$ .80).

# Baseline Equivalence

After matching and quality assurance and random selection of one focal child per family, the final intervention samples included a Safe@Home Placement Prevention group ($n$ = 180) and a Safe@Home Reunification group ($n$ = 330). These non-overlapping study samples were defined based on whether children received Safe@Home before placement into foster care (i.e., Safe@Home Placement Prevention group) or as a means to reunification following placement in foster care (i.e., Safe@Home Reunification group). In both groups, children received Safe@Home as part of an in-home safety plan while living at home with their parents/caregivers. Descriptive characteristics of these two intervention samples are provided in Table 6.

**Table 6. Differences in descriptive characteristics between intervention study samples**

| | Placement Prevention $n$ = 180 | Reunification $n$ = 330 | t / $\chi^2$ |
|---|---|---|---|
| Child age, years *M(SD)* | 6.2(5.3) | 5.1(4.5) | $t(508) = 2.60$<br>$p = .010$ |
| Black | 23.9% | 24.6% | |
| White | 33.3% | 36.4% | $\chi 2(3) = 0.74$<br>$p = .863$ |
| Hispanic | 28.2% | 25.5% | |
| Other/unknown | 14.4% | 13.6% | |
| Previous In-home or OOH program | 22.2% | 26.4% | $\chi 2(1) = 1.06$<br>$p = .301$ |
| ID: Maltreatment | 2.2% | 4.6% | $\chi 2(1) = 1.75$<br>$p = .186$ |
| ID: Child Functioning | 3.3% | 5.5% | $\chi 2(1) = 1.17$<br>$p = .280$ |
| ID: Parenting | 71.7% | 69.7% | $\chi 2(1) = 0.22$<br>$p = .641$ |
| ID: Adult Functioning | 75.6% | 88.2% | $\chi 2(1) = 13.63$<br>$p < .001$ |

ID = Impending danger type

Well-matched comparison groups were successfully constructed using coarsened exact matching. Matched comparison cases were found for 95% of children in the intervention group.

- 403 children whose families received Safe@Home to prevent their placement in foster care were matched with 421 children in the comparison group. Random sampling of one child per family resulted in a final sample of 180 children in the Placement Prevention group and 344 matched comparison children ($n$ = 524 total).
- 641 children whose families received Safe@Home after being placed out-of-home to facilitate reunification were matched with 679 children in the comparison group. Random sampling of one child per family resulted in a final sample of 330 children in the Reunification group and 507 matched comparison children ($n$ = 837 total).
- Descriptive characteristics of the final matched samples are shown in Table 7.

**Table 7. Descriptive characteristics of the final matched comparison group (N = 1,361)**

| | Placement Prevention | | | Reunification | | |
|---|---|---|---|---|---|---|
| | **Safe@Home *n* = 180** | **Matched Comparison *n* = 344** | **t / $x^2$** | **Safe@Home *n* = 330** | **Matched Comparison *n* = 507** | **t / $x^2$** |
| **Child age, years, *M(SD)*** | 6.2(5.3) | 6.2(5.3) | $t(522) = -0.11$ $p = .912$ | *5.1(4.5)* | *5.4(5.0)* | $t(835) = 1.11$ $p = .267$ |
| **Black, *%*** | *23.9%* | *27.9%* | | *24.6%* | *30.6%* | |
| **White, *%*** | 33.3% | 32.9% | $\chi2(3) = 2.32$ | *36.4%* | *34.5%* | $\chi2(3) = 5.58$ |
| **Hispanic, *%*** | 28.3% | 28.8% | $p = .509$ | 25.5% | 25.3% | $p = .134$ |
| **Other/unknown, *%*** | *14.4%* | *10.5%* | | *13.6%* | *9.7%* | |
| **Previous In-home or OOH program, *%*** | 22.2% | 23.0% | $\chi2(1) = 0.04$ $p = .847$ | *26.4%* | *24.5%* | $\chi2(1) = 0.39$ $p = .535$ |
| **ID: Maltreatment, *%*** | *2.2%* | *2.0%* | $\chi2(1) = 0.02$ $p = .887$ | *4.6%* | *3.9%* | $\chi2(1) = 0.18$ $p = .671$ |
| **ID: Child Functioning, *%*** | 3.3% | 3.5% | $\chi2(1) = 0.01$ $p = .926$ | 5.5% | 5.1% | $\chi2(1) = 0.04$ $p = .836$ |
| **ID: Parenting, *%*** | 71.7% | 74.4% | $\chi2(1) = 0.46$ $p = .498$ | *69.7%* | *72.6%* | $\chi2(1) = 0.82$ $p = .366$ |
| **ID: Adult Functioning, *%*** | 75.6% | 79.1% | $\chi2(1) = 0.85$ $p = .358$ | *88.2%* | *87.2%* | $\chi2(1) = 0.18$ $p = .667$ |

**ID = Impending danger type**

***Baseline difference effect size was between .05 and .25.*** All other baseline difference effect sizes were below .05.

# Results

## Outcomes for Safe@Home Placement Prevention Sample

### Prevention of out-of-home placement: Large favorable effect

Of children in the Safe@Home Placement Prevention group, 21% (*n* = 37) were placed in out-of-home care during their child welfare case, compared to 84% (*n* = 289) of children in the comparison group. Logistic regressions controlling for the child's age, race/ethnicity, and impending dangers threats identified during the NIA showed that the odds of being placed in out-of-home care were 96% lower in the Safe@Home Placement Prevention group relative to the comparison group (OR:[5] 0.04 [95% CI:[6] 0.02 to 0.07, $p < .001$). This is a large effect size ($d$[7] = 1.95). Statistically significant covariates included child race/ethnicity, impending dangers related to adult functioning and parenting, and child age (Table A1 in the Appendix).

### Prevention of out-of-home placement sustained 12 months after end of services: Large favorable effect

Within the twelve-month follow-up period after the end of Safe@Home services, 22% (*n* = 39) of children in the Safe@Home Placement Prevention group had spent one or more days in an out-of-home placement. In contrast, 61% (*n* = 210) of children in the comparison group had spent one or more days in out-of-home placements in their twelve-month follow-up period. Logistic regressions controlling for the child's age, child race/ethnicity, and impending dangers threats identified during the NIA showed that the odds of experiencing an out-of-home placement during the twelve-month follow-up period were 83% lower in the Safe@Home Placement Prevention group relative to the comparison group (OR: 0.17 [95% CI: 0.11 to 0.26], $p < .001$). This is a large effect size ($d$ = 1.07). Statistically significant covariates included child race, impending dangers related to adult functioning and parenting, and child age (Table A2). Two other approaches with variations in the parameters used to extrapolate the comparison group's follow-up period showed remarkably consistent results (Tables A3 and A4).

### Length of time in out-of-home care: Large favorable effect

On average, children in the Safe@Home Placement Prevention group spent 55 days in out-of-home care within the first year of their ongoing child welfare case, compared to 221 days for children in the comparison group (distributions are shown in Figure A1). A Tobit regression controlling for child age, race/ethnicity, and impending dangers showed that receiving Safe@Home for Placement Prevention significantly reduced the amount of time spent in out-of-home care ($p < .001$). The model predicted that Safe@Home reduced time in out-of-home care by 356 days (in an uncensored dataset). This is a large effect size ($d$ = 2.5). Statistically significant covariates included child race, impending dangers related to adult functioning and parenting, and child age (Table A5).

[5] OR = Odds Ratio
[6] CI = Confidence Interval
[7] d = Cox's d

### Time to case closure: Medium favorable effect

Although the majority of cases in both groups had closed at the end of this study's data collection period (June 30, 2020), a small percentage (< 5%) of the total sample still had open cases at that time. Of children in the Safe@Home Placement Prevention group, 74% ($n$ = 134) had closed within a year of the start of the child welfare case, whereas 47% ($n$ = 160) of the matched comparison children's cases had closed in the same amount of time. A logistic regression controlling for child age, race/ethnicity, and impending dangers showed that the odds of case closure withing a year were 3.5 higher for children who received Safe@Home relative to the comparison group (OR: 3.48 [95% CI: 2.30 to 5.27], $p$ < .001). This is a medium effect size ($d$ = .76). Statistically significant covariates included child race, impending dangers related to adult functioning and parenting, and child age (Table A6).

### Permanency with a parent: Small favorable effect

At the time of case closure (or end of the observation period for cases that had not closed, $n$= 25), 87% ($n$ = 157) of children in the Safe@Home Placement Prevention group achieved permanency with a parent, compared to 53% ($n$ = 182) of children in the matched comparison group (see Figure A2). A Cox proportional hazards regression controlling for child age, race/ethnicity, and impending dangers confirmed that, on average across all time intervals, children whose families received Safe@Home for placement prevention achieved permanency with their parents at case closure at more than 2.5 times the rate of children in the matched comparison group (HR:[8] 2.56 [95% CI: 2.05 to 3.18], $p$ < .001). Significant covariates included child race and impending dangers related to parenting and adult functioning (Table A7).

### Repeat maltreatment after case closure: No effect

Similar proportions of children in the Safe@Home Placement Prevention group (1.2%) and matched comparison group (2.4%) had one or more substantiated maltreatment reports within six months of case closure. Within twelve months of case closure, 5.5% of children in the Safe@Home Placement Prevention group and 4.5% of children in the comparison group had substantiated maltreatment reports. Logistic regressions controlling for child age, race/ethnicity, impending dangers, and whether child achieved permanency with parent showed that there were no statistically significant differences in the rates of repeat maltreatment between the two groups within six months of case closure (OR: .34 [95% CI: .07 to 1.68], $p$ = .187) or within twelve months of case closure (OR: .76 [95% CI: .32 to 1.81], $p$ = .535). Permanency with a parent was the strongest predictor of repeat maltreatment at twelve months (Tables A8 and A9).

### Entry into out-of-home care after case closure: No effect

Similar proportions of children in the Safe@Home Placement Prevention group (1.2%) and the comparison group (2.7%) experienced re-entry in out-of-home care within six months of case closure and within twelve months of case closure (3.6% and 5.1%, respectively). Logistic regressions controlling for child age, race/ethnicity, impending dangers, and whether child achieved permanency with parent confirmed that there were no statistically significant differences in the odds of re-entering in out-of-home care between the two groups within six months of case closure (OR: 0.37 [95% CI: 0.07 to 1.82], $p$ = .218) or within twelve months of case closure (OR: 0.56 [95% CI: 0.21 to 1.51], $p$ = .253). There were no significant predictors at six or twelve months (Tables A10 and A11).

[8] HR = hazard ratio

# Outcomes for Safe@Home Reunification Sample

## Length of time in out-of-home care: Medium favorable effect

Children in the Safe@Home Reunification group spent, on average, 153 days in out-of-home care within the first year of their child welfare cases, compared to 228 days for children in the matched comparison group (distributions are shown in Figure A3). Controlling for child race/ethnicity, child age, previous involvement with child welfare and impending dangers, receiving Safe@Home for reunification significantly reduced the amount of time spent in out-of-home care ($p < .001$). The model predicted that Safe@Home reduced time in out-of-home care by 75 days (in an uncensored dataset). This is a medium effect size ($d = 0.55$). Significant covariates included impending danger types related to parenting and adult functioning (Table A12).

## Time to case closure: Medium favorable effect

Of children that received Safe@Home for reunification, 72% ($n = 236$) had closed within the first year of their child welfare case, compared to 43% ($n = 218$) of children in the comparison group. Controlling for child age, child race, previous child welfare involvement and impending dangers, the odds of case closure within a year were 3.4 times higher for the Safe@Home group relative to the comparison group (OR: 3.45 [95% CI: 2.54 to 4.67], $p < .001$). This is a medium effect size ($d = .75$). Significant covariates included child age and impending dangers related to adult functioning and parenting (Table A13).

## Permanency with a parent: Small favorable effect

At the time of case closure (or end of the study observation period), most of the children in the Safe@Home Reunification group (88%, $n = 290$) group achieved permanency with their parents, whereas only 50% ($n = 254$) of children in the matched comparison achieved permanency with a parent (see Figure A4). Controlling for child age, race/ethnicity, previous child welfare involvement and impending dangers, on average across all time intervals, children in the Safe@Home Reunification group achieved permanency with their parents at more than twice the rate of children in the comparison group (HR: 2.41 [95% CI: 2.02 to 2.87], $p < .001$). Significant covariates included impending dangers related to parenting and adult functioning (Table A14).

## Repeat maltreatment after case closure: No effect

In the Safe@Home Reunification group, 6.1% of children had a substantiated maltreatment allegation within six months of case closure compared to 3.5% of children in the comparison group. Within twelve months of case closure, the proportions were 10.5% for the Safe@Home Reunification group and 4.9% for the comparison group. While these proportions appeared to be greater in the Safe@Home group, the difference was not statistically significant when controlling for child age, child race/ethnicity, previous child welfare involvement, impending dangers and permanency with a parent, within six months of case closure (OR: 1.14 [95% CI: .55 to 2.37], $p = .723$) or within twelve months of case closure (OR: 1.57 [95% CI: .85 to 2.89], $p = .148$). Instead, the strongest predictors of repeat maltreatment at six and twelve months after case closure were previous child welfare involvement and permanency with a parent (Tables A15 and A16).

## Entry into out-of-home care after case closure: No effect

The proportions of children that experienced re-entry in out-of-home care within six months of case closure were similar in the Safe@Home Reunification group (5.4%) and the matched comparison group (4.1%). This was also the case at twelve months of case closure (5.7% and 7.9%, respectively). No statistically significant differences were found in rates of re-entry, even when controlling for child age, child race, previous child welfare involvement, impending dangers, and permanency with a parent at six months (OR: 1.03. [95% CI: 0.50 to 2.14], $p$ = .932), or twelve months (OR: 1.05 [95% CI: 0.56 to 1.97], $p$ = .884). The strongest predictors of entry into out-of-home care were previous child welfare involvement and permanency with a parent (see Tables A17 and A18).

# Discussion

## Summary of Outcomes

This rigorous quasi-experimental study offers strong initial support for average population-level treatment effects of Safe@Home when implemented in the context of the SAFE practice model. Safe@Home demonstrated positive effects in key outcome areas that are important to child welfare systems' goals of keeping children safe and families together. Table 8 summarizes effect sizes for the Placement Prevention and Reunification populations.

**Table 8. Summary of effect sizes for all outcomes tested**

| Outcome | Placement Prevention | | Reunification | |
|---|---|---|---|---|
| | *d* | *Effect Size* | *d* | *Effect Size* |
| OOH placement prevention (during case episode) | 1.95 | Large | - | - |
| OOH placement prevention (sustained for 12 months after end of services) | 1.07 | Large | - | - |
| Length of time in OOH | 2.51 | Large | .55 | Medium |
| Case closure within a year | .76 | Medium | .75 | Medium |
| Permanency with a parent | .29 | Small | .29 | Small |
| Maltreatment 6 months after case closed | .65 | Not significant | .05 | Not significant |
| Maltreatment 12 months after case closed | .17 | Not significant | .22 | Not significant |
| Re-entry in OOH 6 months after case closed | .60 | Not significant | .01 | Not significant |
| Re-entry in OOH 12 months after case closed | .35 | Not significant | .00 | Not significant |

Note: *d* was computed from odds ratios with the Cox transformation described in Sánchez-Meca et al., (2003). When models yielded hazard ratios, these were converted to risk ratios based on the transformation described in Shor et al., (2017), then to odds ratios based on the transformations described in Grant (2014), and finally to *d* with the Cox transformation (Sanchez-Meca et al., 2003).

## Study Context

A strength of this study is that the intervention being evaluated was implemented in a complex public child welfare system. Conducting the study in a "usual practice setting" increases its ecological validity for other child welfare agencies who endeavor to improve outcomes related to FFPSA. Evaluating Safe@Home in a large, dynamic, and multi-faceted child welfare system like Clark County also presented practical challenges to aspirations for a tightly controlled research study. Evaluators of child welfare interventions must understand, control for, and in many cases, accept the potential for unmeasured influences on both practice and outcomes. Transparent discussion about the boundaries of the intervention being studied, potential confounding factors, and design limitations are critical when attempting to build evidence under usual practice conditions.

This evaluation was conducted during a comprehensive change in practice for CCDFS–the implementation of the SAFE practice model. Sampling timeframes ensured that CCDFS decision-making standards about (1) whether to open a case for services and (2) whether to intervene with an in-home or out-of-home safety plan were the same for both the intervention and comparison groups. Like most studies of children and families served by child welfare agencies, however, the estimated impact of Safe@Home implemented by community-based agencies may have been affected by case planning and case contact activities conducted by CCDFS during Safe@Home implementation. CCDFS activities could not be controlled for in this research design. The potential influence of CCDFS case practices on study outcomes makes the favorable findings no less promising, but it may limit what can be attributed exclusively to Safe@Home. Model developers at Action for Child Protection believe that Safe@Home can be implemented in conjunction with or outside of the SAFE practice model. The results observed in this study are best understood as the effect of Safe@Home in the context of SAFE.

## Limitations

This study offers several contributions to the evidence about Safe@Home, but has limitations, including a retrospective design that relies entirely on administrative data. Analysts optimized internal validity and assured reliable and valid measurement through stringent quality assurance processes. This approach resulted in some excluded cases from the final analysis, which could slightly compromise generalizability. The study was also limited to child and family outcomes that could be examined with available data and does not include analyses of implementation data like fidelity or the hours and categories of services families received.

The evaluation is also limited by its use of a historical comparison group instead of a contemporaneous comparison group. The evaluation team used case-level matching to minimize the impact of any trends in types of cases served over the study period. With few viable cross-jurisdictional comparisons for Clark County and its rapid county-wide implementation of Safe@Home, the evaluation team determined that a historic within-county comparison group selected from carefully designated timeframes offered the most rigorous test of the intervention compared to services as usual.

## Future Directions

This study sought to estimate average population-level effects for the purpose of evidence building. It was beyond its scope to examine differences in Safe@Home by subgroups of children and families served. However, the impending danger threats and race/ethnicity variables that were used as statistical controls proved to be significant predictors of several of the outcomes examined. To better understand which children and families might be most effectively served by Safe@Home, future studies should explore differences in outcomes for families with different races/ethnicities and different impending danger threats.

The research base about Safe@Home is early in its development. Researchers and practitioners have much to learn about how it works. Caseworkers have discretion about when and how they use Safe@Home. While Safe@Home relies on standardized decision-making criteria, caseworkers apply those criteria in consultation with their supervisors and tailor services to families' needs and circumstances. The type, frequency, dose, and duration of services can vary widely. Future studies could explore these factors to better understand implementation and their influence on outcomes.

While outcomes during child welfare case episodes were promising, this study did not observe significant differences in child maltreatment or entry into out-of-home care after child welfare case closure. According to Action's theory of change for SAFE and Safe@Home, maltreatment and placement outcomes after case closure are more likely to be impacted by the ongoing components of the SAFE model that target long-term behavioral change. The theory of change also includes several important constructs that could not be measured with child welfare administrative data. These constructs offer future opportunities for specific tests of proximal outcomes (e.g., enhancement of caregiver protective capacities) that may help to explain Safe@Home's immediate and longer-term effects.

## Conclusions

Both Placement Prevention and Reunification populations of children and families served with Safe@Home achieved improved placement and permanency outcomes relative to matched groups of children served through child welfare "services as usual." Children served through Safe@Home were less likely to be placed out-of-home, spent fewer days in out-of-home placements, had shorter case durations, and were more likely to achieve permanency with a parent. The placement prevention effect was sustained for 12 months beyond the end of Safe@Home services for the Placement Prevention group. Taken together, these findings suggest that Safe@Home shows promise for the outcomes that FFPSA hopes to achieve.

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# Appendix

## Safe@Home Placement Prevention Sample Outcomes

### Prevention of out-of-home placement

**Table A1. Results of logistic regressions comparing the effect of Safe@Home Placement Prevention on likelihood of out-of-home placement while ongoing child welfare case is open (*n* = 524)**

| | Odds Ratio | Std. Err. | Sig. | [95% Conf. | Interval] |
|---|---|---|---|---|---|
| Safe@Home PP | 0.04 | 0.01 | 0.000 | 0.02 | 0.07 |
| Black | 0.67 | 0.22 | 0.233 | 0.35 | 1.29 |
| Hispanic | 0.41 | 0.13 | 0.006 | 0.22 | 0.77 |
| Other/unknown race | 0.36 | 0.14 | 0.011 | 0.16 | 0.79 |
| ID: Maltreatment | 0.47 | 0.38 | 0.345 | 0.10 | 2.25 |
| ID: Child functioning | 0.72 | 0.46 | 0.614 | 0.21 | 2.52 |
| ID: Parenting | 1.87 | 0.54 | 0.031 | 1.05 | 3.30 |
| ID: Adult functioning | 2.00 | 0.62 | 0.025 | 1.09 | 3.69 |
| Child age | 0.92 | 0.02 | 0.001 | 0.88 | 0.97 |
| _cons | 6.00 | 2.84 | 0.000 | 2.37 | 15.17 |

### Prevention of out-of-home placement sustained 12 months after end of services

**Table A2. Results of logistic regressions comparing the effect of Safe@Home Placement Prevention on likelihood of out-of-home placement in the twelve-month follow up period after the end of services (*n* = 524) using a 6-month wait period for the comparison group**

| | Odds Ratio | Std. Err. | Sig. | [95% Conf. | Interval] |
|---|---|---|---|---|---|
| Safe@Home PP | 0.17 | 0.04 | 0.000 | 0.11 | 0.26 |
| Black | 0.59 | 0.14 | 0.045 | 0.36 | 0.99 |
| Hispanic | 0.85 | 0.22 | 0.526 | 0.52 | 1.40 |
| Other/unknown race | 0.47 | 0.16 | 0.026 | 0.24 | 0.91 |
| ID: Maltreatment | 0.48 | 0.36 | 0.330 | 0.11 | 2.09 |
| ID: Parenting | 2.04 | 0.48 | 0.003 | 1.28 | 3.24 |
| ID: Child functioning | 0.93 | 0.49 | 0.885 | 0.33 | 2.62 |
| ID: Adult functioning | 2.48 | 0.64 | 0.000 | 1.49 | 4.11 |
| Child age | 0.95 | 0.02 | 0.005 | 0.91 | 0.98 |
| _cons | 0.86 | 0.32 | 0.677 | 0.41 | 1.78 |

## Replication of the Sustained OOH Placement Prevention Analysis Approach

Observational studies interested in examining sustained effects for interventions that vary in duration are faced with the challenge of inferring when to examine effects in a comparison group. An "end-of-treatment" date cannot be arbitrarily assigned to the comparison group. In circumstances like these, research teams might use strategies to (1) estimate the expected end of treatment had the comparison group received the intervention, and/or (2) control or correct for any constructs that could contribute to differences in service duration among cases in the intervention group. Informed by previous studies of in-home parenting skill-based programs rated by the Clearinghouse (Beachy-Quick et al., 2018; Huhr & Wulczyn, 2020), this evaluation team used different parameters to construct the twelve-month follow-up period in the comparison group.

Following analysis strategies used to examine the sustained effects of SafeCare on placement prevention by assigning the same wait period to all children in the comparison group (Beachy-Quick et al., 2018), the analysis presented in the main text and summarized in Table A2 above assigned children in the comparison group a wait period that equaled the 75$^{th}$ percentile of Safe@Home service duration, which was six months. To test the sensitivity of decisions about the wait period, an alternate wait period was used for the matched comparison group, which equaled the average Safe@Home service duration: four months. Logistic regressions showed under these parameters, the odds of being placed out-of-home in the follow-up period were 88% lower for the Safe@Home group relative to the comparison group (OR: 0.12 [95% CI: 0.08 to 0.19], $p < .001$). Results are show in Table A3.

**Table A3. Results of logistic regressions comparing the effect of Safe@Home Placement Prevention on likelihood of out-of-home placement in the twelve-month follow up period after the end of services ($n$ = 524) using a four-month wait period for the comparison group**

| | Odds Ratio | Std. Err. | Sig. | [95% Conf. Interval] | |
|---|---|---|---|---|---|
| Safe@Home PP | 0.12 | 0.03 | 0.000 | 0.08 | 0.19 |
| Black | 0.70 | 0.19 | 0.175 | 0.41 | 1.17 |
| Hispanic | 0.92 | 0.24 | 0.759 | 0.55 | 1.54 |
| Other/unknown race | 0.53 | 0.18 | 0.064 | 0.27 | 1.04 |
| ID: Maltreatment | 0.68 | 0.49 | 0.593 | 0.16 | 2.82 |
| ID: Parenting | 2.20 | 0.54 | 0.001 | 1.37 | 3.54 |
| ID: Child functioning | 0.70 | 0.38 | 0.507 | 0.24 | 2.03 |
| ID: Adult functioning | 3.00 | 0.79 | 0.000 | 1.79 | 5.04 |
| Child age | 0.96 | 0.02 | 0.019 | 0.92 | 0.99 |
| _cons | 0.82 | 0.31 | 0.605 | 0.39 | 1.73 |

Another strategy was used to attempt to correct for any differences in Safe@Home duration, following the example of the Intercept program (Huhr & Wulczyn, 2020). Analysts split the Safe@Home Placement Prevention group into two subgroups based on their Safe@Home duration: those for whom Safe@Home lasted shorter than average (i.e., four months or less) and those for whom Safe@Home lasted longer than average (i.e., more than four months). Because these subgroups differed in baseline characteristics, a new matching process was conducted to achieve good balance between each intervention subgroup and its comparison. Then, a wait period defined by each intervention subgroup's 75th percentile of Safe@Home duration was applied to the respective comparison subgroup. The 75th percentiles were three months (for the shorter Safe@Home duration subgroup) and eight months (for the longer Safe@Home duration subgroup). Finally, a dichotomous indicator of intervention duration (0 = shorter Safe@Home duration and matched comparison, 1 = longer Safe@Home duration and matched comparison) was included in the analysis to control for any potential effect of service duration on likelihood of placement in the 12-month follow-up period. Logistic regressions controlling for intervention duration estimated that Safe@Home reduced the odds of out-of-home placements in the twelve-month follow up period by 86% (OR: 0.12 [95% CI: 0.08 to 0.19], $p < .001$) relative to the comparison group. Results are shown in Table A4.

**Table A4. Results of logistic regressions comparing the effect of Safe@Home Placement Prevention on likelihood of out-of-home placement in the twelve-month follow up period after the end of services ($n$ = 524) using two intervention duration subgroups**

| | Odds Ratio | Std. Err. | Sig. | [95% Conf. | Interval] |
|---|---|---|---|---|---|
| Safe@Home PP | 0.12 | 0.03 | 0.000 | 0.08 | 0.19 |
| Long duration | 0.43 | 0.09 | 0.000 | 0.29 | 0.66 |
| Black | 0.68 | 0.18 | 0.145 | 0.40 | 1.14 |
| Hispanic | 0.88 | 0.23 | 0.636 | 0.53 | 1.48 |
| Other/unknown race | 0.55 | 0.19 | 0.083 | 0.28 | 1.08 |
| ID: Maltreatment | 0.57 | 0.42 | 0.443 | 0.14 | 2.40 |
| ID: Parenting | 2.08 | 0.50 | 0.003 | 1.29 | 3.35 |
| ID: Child functioning | 1.05 | 0.57 | 0.935 | 0.36 | 3.03 |
| ID: Adult functioning | 2.97 | 0.79 | 0.000 | 1.77 | 5.01 |
| Child age | 0.96 | 0.02 | 0.021 | 0.92 | 0.99 |
| _cons | 1.19 | 0.47 | 0.663 | 0.55 | 2.57 |

All three of these strategies estimated notably consistent results, all of which indicate large favorable effects. Analysts presented the most conservative (i.e., the longest wait period applied to the largest number of children in the comparison group) approach to support parsimony and ease of explanation and interpretation.

**Figure A1. Days in out-of-home care within the first year of the child welfare case for the Safe@Home Placement Prevention group and Comparison group (*n* = 524)**

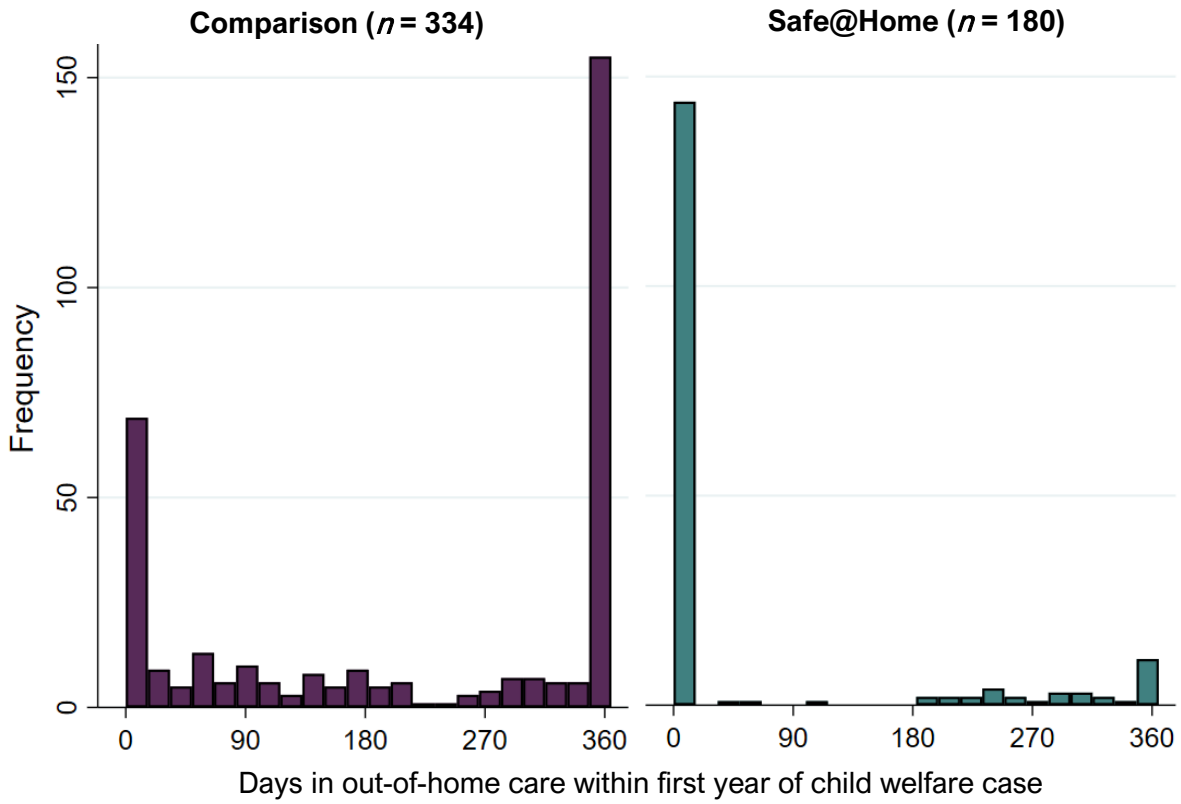



**Table A5. Results of Tobit regression comparing the effect of Safe@Home Placement Prevention on days in out-of-home care (*n* = 524)**

| | Coefficient | Std. Err. | Sig. | [95% Conf. | Interval] |
|---|---|---|---|---|---|
| Safe@Home PP | -356.63 | 27.89 | 0.000 | -411.43 | -301.84 |
| Black | -40.47 | 28.98 | 0.163 | -97.40 | 16.46 |
| Hispanic | -36.14 | 28.51 | 0.206 | -92.16 | 19.88 |
| Other/unknown race | -86.02 | 38.25 | 0.025 | -161.17 | -10.86 |
| ID: Maltreatment | -102.10 | 86.63 | 0.239 | -272.29 | 68.09 |
| ID: Child functioning | -32.28 | 62.58 | 0.606 | -155.22 | 90.66 |
| ID: Parenting | 89.17 | 26.83 | 0.001 | 36.46 | 141.87 |
| ID: Adult functioning | 117.34 | 29.34 | 0.000 | 59.69 | 174.98 |
| Child age | -6.62 | 2.12 | 0.002 | -10.80 | -2..45 |
| _cons | 137.80 | 42.55 | 0.001 | 54.22 | 221.39 |

## Time to case closure

**Table A6. Results of logistic regressions comparing the effect of Safe@Home Placement Prevention on case closure within a year (*n* = 524)**

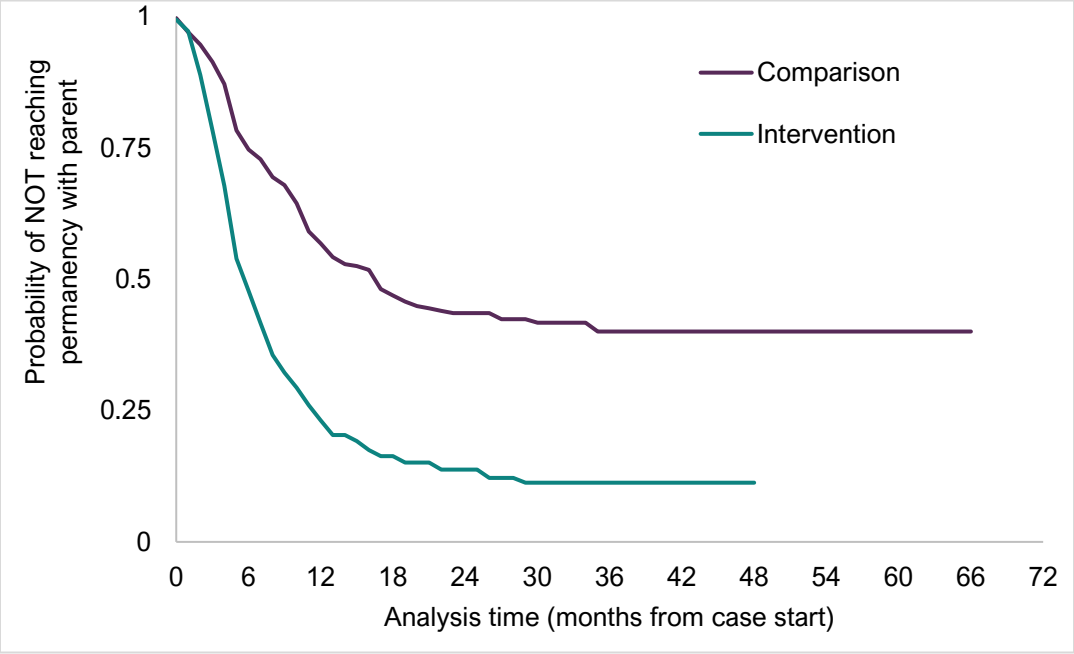
| | Odds Ratio | Std. Err. | Sig. | [95% Conf. | Interval] |
|---|---|---|---|---|---|
| Safe@Home PP | 3.48 | 0.74 | 0.000 | 2.30 | 5.27 |
| Black | 2.01 | 0.51 | 0.006 | 1.23 | 3.31 |
| Hispanic | 1.06 | 0.26 | 0.796 | 0.66 | 1.71 |
| Other/unknown race | 2.39 | 0.79 | 0.009 | 1.24 | 4.58 |
| ID: Maltreatment | 6.98 | 7.58 | 0.073 | 0.83 | 58.50 |
| ID: Child functioning | 0.91 | 0.46 | 0.845 | 0.33 | 2.47 |
| ID: Parenting | 0.48 | 0.11 | 0.002 | 0.31 | 0.76 |
| ID: Adult functioning | 0.43 | 0.11 | 0.001 | 0.26 | 0.71 |
| Child age | 1.04 | 0.02 | 0.037 | 1.00 | 1.08 |
| _cons | 1.63 | 0.59 | 0.182 | 0.80 | 3.32 |

## Permanency with a parent

**Table A7. Results of Cox proportional hazards regression comparing the effect of Safe@Home Placement Prevention on permanency with a parent (*n* = 524)**

| | Haz. Ratio | Std. Err. | Sig. | [95% Conf. Interval] | |
|---|---|---|---|---|---|
| Safe@Home PP | 2.56 | 0.29 | 0.000 | 2.05 | 3.18 |
| Black | 1.42 | 0.21 | 0.018 | 1.06 | 1.89 |
| Hispanic | 1.13 | 0.16 | 0.394 | 0.85 | 1.50 |
| Other/unknown race | 1.46 | 0.26 | 0.032 | 1.03 | 2.06 |
| ID: Maltreatment | 1.47 | 0.48 | 0.232 | 0.78 | 2.78 |
| ID: Child functioning | 0.80 | 0.26 | 0.491 | 0.42 | 1.51 |
| ID: Parenting | 0.68 | 0.09 | 0.003 | 0.52 | 0.87 |
| ID: Adult functioning | 0.66 | 0.09 | 0.003 | 0.50 | 0.87 |
| Child age | 1.01 | 0.01 | 0.083 | 0.99 | 1.03 |

**Figure A2. Kaplan-Meier Survival Estimates for Reaching Permanency with a Parent in the Safe@Home Prevention and Comparison Group (*n* =524)**




**Number at risk (open cases)**

| | Begin observation | 12 months | 24 months | 36 months | 48 months | 60 months | 72 months |
|---|---|---|---|---|---|---|---|
| **Comparison** | 334 | 184 | 94 | 45 | 22 | 7 | N/A |
| **Safe@Home** | 180 | 46 | 20 | 6 | 1 | N/A | N/A |

Note: maximum observation period for Comparison group was 80 months and maximum observation period for Safe@Home group was 59 months

## Repeat maltreatment after case closure

**Table A8. Results of logistic regressions comparing the effect of Safe@Home Placement Prevention on repeat maltreatment within 6 months of case closure (*n* = 499 cases that closed)**

| | Odds Ratio | Std. Err. | Sig. | [95% Conf. | Interval] |
|---|---|---|---|---|---|
| Safe@Home PP | 0.34 | 0.28 | 0.187 | 0.07 | 1.68 |
| Black | 2.41 | 1.85 | 0.250 | 0.54 | 10.83 |
| Hispanic | 0.42 | 0.49 | 0.458 | 0.04 | 4.16 |
| Other/unknown race | 0.77 | 0.91 | 0.827 | 0.08 | 7.79 |
| ID: Maltreatment | 1.00 | (omitted) | | | |
| ID: Child functioning | 1.00 | (omitted) | | | |
| ID: Parenting | 0.43 | 0.33 | 0.270 | 0.10 | 1.91 |
| ID: Adult functioning | 1.12 | 1.01 | 0.898 | 0.19 | 6.49 |
| Child age | 1.03 | 0.07 | 0.624 | 0.91 | 1.17 |
| Permanency with parent | 5.65 | 6.11 | 0.109 | 0.68 | 47.01 |
| _cons | 0.01 | 0.01 | 0.002 | 0.00 | 0.18 |

Note: ID: Maltreatment = 1 predicts repeat maltreatment perfectly, ID: Maltreatment dropped and 11 observations not used. ID: Child Functioning = 1 predicts repeat maltreatment perfectly, ID: Child Functioning dropped and 17 observations not used

**Table A9. Results of logistic regressions comparing the effect of Safe@Home Placement Prevention on repeat maltreatment within 12 months of case closure (*n* = 499 cases that closed)**

| | Odds Ratio | Std. Err. | Sig. | [95% Conf. | Interval] |
|---|---|---|---|---|---|
| Safe@Home PP | 0.76 | 0.34 | 0.535 | 0.32 | 1.81 |
| Black | 1.01 | 0.53 | 0.988 | 0.36 | 2.82 |
| Hispanic | 0.66 | 0.38 | 0.474 | 0.22 | 2.03 |
| Other/unknown race | 0.45 | 0.36 | 0.317 | 0.09 | 2.16 |
| ID: Maltreatment | 1.00 | (omitted) | | | |
| ID: Child functioning | 1.00 | (omitted) | | | |
| ID: Parenting | 0.87 | 0.41 | 0.765 | 0.34 | 2.21 |
| ID: Adult functioning | 2.26 | 1.51 | 0.219 | 0.62 | 8.34 |
| Child age | 0.99 | 0.04 | 0.778 | 0.91 | 1.08 |
| Permanency with parent | 14.25 | 14.83 | 0.011 | 1.85 | 109.66 |
| _cons | 0.00 | 0.01 | 0.000 | 0.00 | 0.06 |

Note: ID: Maltreatment = 1 predicts repeat maltreatment perfectly, ID: Maltreatment dropped and 11 observations not used. ID: Child functioning = 1 predicts repeat maltreatment perfectly, ID: Child functioning dropped and 17 observations not used

## Entry into out-of-home care after case closure

**Table A10. Results of logistic regressions comparing the effect of Safe@Home Placement Prevention on re-entry in out-of-home care within 6 months of case closure (*n* = 499 cases that closed)**

| | Odds Ratio | Std. Err. | Sig. | [95% Conf. | Interval] |
|---|---|---|---|---|---|
| Safe@Home PP | 0.37 | 0.30 | 0.218 | 0.07 | 1.82 |
| Black | 1.58 | 1.25 | 0.561 | 0.34 | 7.42 |
| Hispanic | 1.27 | 1.05 | 0.774 | 0.25 | 6.46 |
| Other/unknown race | 0.95 | 1.11 | 0.966 | 0.10 | 9.43 |
| ID: Maltreatment | 1.00 | (omitted) | | | |
| ID: Child functioning | 1.00 | (omitted) | | | |
| ID: Parenting | 1.47 | 1.23 | 0.643 | 0.29 | 7.56 |
| ID: Adult functioning | 0.91 | 0.67 | 0.901 | 0.22 | 3.86 |
| Child age | 1.00 | 0.06 | 0.973 | 0.89 | 1.12 |
| Permanency with parent | 1.81 | 1.30 | 0.409 | 0.44 | 7.40 |
| _cons | 0.01 | 0.02 | 0.001 | 0.00 | 0.19 |

*Note*: ID: Maltreatment = 1 predicts re-entry perfectly, ID: Maltreatment dropped and 11 observations not used. ID: Child functioning = 1 predicts re-entry perfectly, ID: Child functioning dropped and 17 observations not used

**Table A11. Results of logistic regressions comparing the effect of Safe@Home Placement Prevention on re-entry in out-of-home care within 12 months of case closure (*n* = 499 cases that closed)**

| | Odds Ratio | Std. Err. | Sig. | [95% Conf. | Interval] |
|---|---|---|---|---|---|
| Safe@Home PP | 0.56 | 0.28 | 0.253 | 0.21 | 1.51 |
| Black | 1.00 | 0.53 | 0.997 | 0.35 | 2.82 |
| Hispanic | 0.87 | 0.47 | 0.793 | 0.30 | 2.53 |
| Other/unknown race | 0.30 | 0.32 | 0.257 | 0.04 | 2.42 |
| ID: Maltreatment | 1.00 | (omitted) | | | |
| ID: Child functioning | 1.00 | (omitted) | | | |
| ID: Parenting | 1.94 | 1.13 | 0.254 | 0.62 | 6.07 |
| ID: Adult functioning | 1.76 | 1.03 | 0.338 | 0.55 | 5.56 |
| Child age | 0.99 | 0.04 | 0.736 | 0.91 | 1.07 |
| Permanency with parent | 2.47 | 1.34 | 0.097 | 0.85 | 7.15 |
| _cons | 0.01 | 0.01 | 0.000 | 0.00 | 0.10 |

*Note*: ID: Maltreatment = 1 predicts re-entry perfectly, ID: Maltreatment dropped and 11 observations not used. ID: Child functioning = 1 predicts re-entry perfectly, ID: Child functioning dropped and 17 observations not used

# Safe@Home Reunification Sample Outcomes

## Length of time in out-of-home care

**Figure A3. Days in out-of-home care within the first year of the child welfare case for the Safe@Home Reunification group and Comparison group (*n* = 837)**

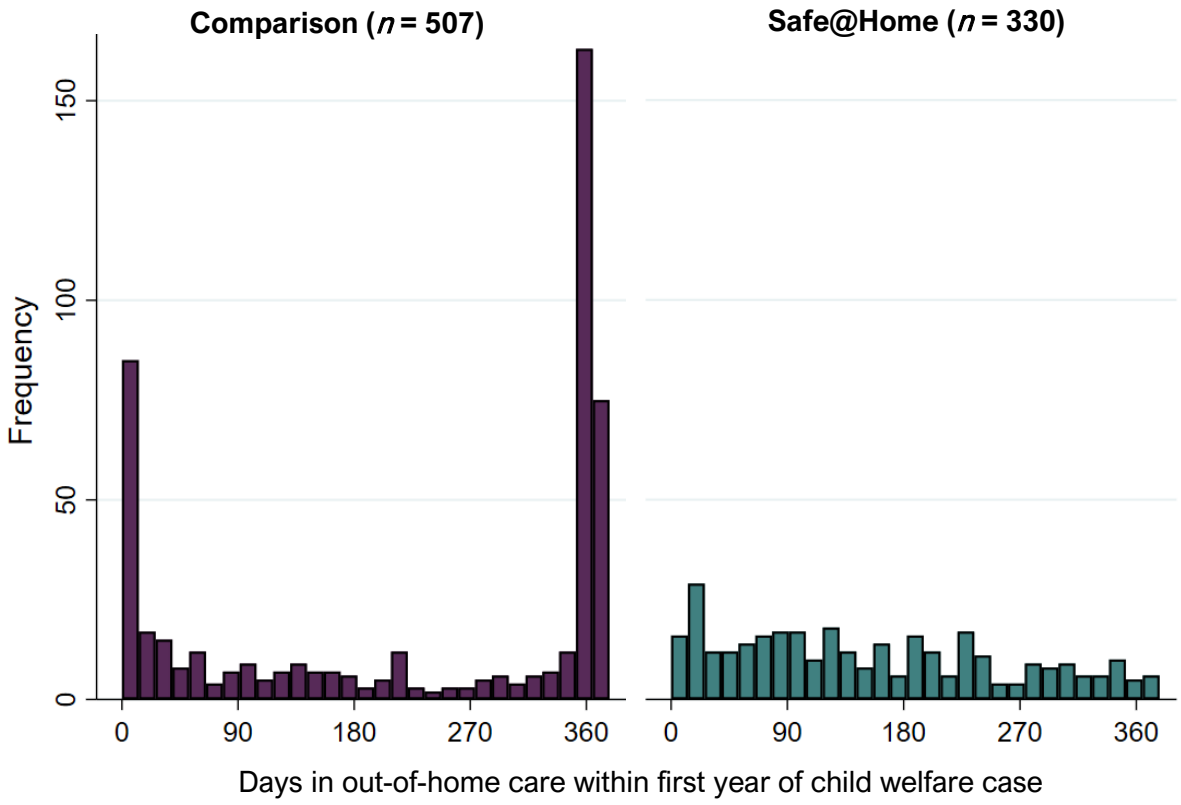



**Table A12. Results of Tobit regression comparing the effect of Safe@Home Reunification on days in out-of-home care (*n* = 837)**

| | Coefficient | Std. Err. | Sig. | [95% Conf. | Interval] |
|---|---|---|---|---|---|
| Safe@Home R | -75.06 | 11.19 | 0.000 | -97.03 | -53.10 |
| Black | 7.00 | 14.19 | 0.622 | -20.86 | 34.86 |
| Hispanic | 1.30 | 14.40 | 0.928 | -26.97 | 29.58 |
| Other/unknown race | -34.92 | 18.79 | 0.063 | -71.80 | 1.96 |
| ID: Maltreatment | 37.07 | 28.43 | 0.193 | -18.72 | 92.86 |
| ID: Child functioning | 17.02 | 25.17 | 0.499 | -32.39 | 66.43 |
| ID: Parenting | 57.11 | 12.33 | 0.000 | 32.90 | 81.32 |
| ID: Adult functioning | 82.86 | 17.78 | 0.000 | 47.95 | 117.76 |
| Previous child welfare | -8.55 | 12.91 | 0.508 | -33.88 | 16.78 |
| Child age | -1.45 | 1.19 | 0.222 | -3.78 | 0.88 |
| _cons | 126.48 | 23.66 | 0.000 | 80.03 | 172.93 |

## Time to case closure

**Table A13. Results of logistic regressions comparing the effect of Safe@Home for Reunification on case closure within a year (*n* = 837)**

| | Odds Ratio | Std. Err. | Sig. | [95% Conf. | Interval] |
|---|---|---|---|---|---|
| Safe@Home R | 3.45 | 0.53 | 0.000 | 2.54 | 4.67 |
| Black | 0.87 | 0.17 | 0.455 | 0.60 | 1.26 |
| Hispanic | 0.96 | 0.18 | 0.824 | 0.66 | 1.40 |
| Other/unknown race | 1.14 | 0.29 | 0.615 | 0.69 | 1.87 |
| ID: Maltreatment | 0.99 | 0.39 | 0.970 | 0.45 | 2.14 |
| ID: Child functioning | 1.18 | 0.40 | 0.633 | 0.60 | 2.31 |
| ID: Parenting | 0.62 | 0.10 | 0.004 | 0.45 | 0.86 |
| ID: Adult functioning | 0.41 | 0.10 | 0.000 | 0.26 | 0.67 |
| Previous child welfare | 0.95 | 0.16 | 0.766 | 0.68 | 1.33 |
| Child age | 1.04 | 0.02 | 0.024 | 1.00 | 1.07 |
| _cons | 1.98 | 0.63 | 0.032 | 1.06 | 3.68 |

## Permanency with a parent

**Table A14. Results of Cox proportional hazards regression comparing the effect of Safe@Home for Reunification on permanency with a parent (*n* = 837)**

| | Haz. Ratio | Std. Err. | Sig. | [95% Conf. Interval] | |
|---|---|---|---|---|---|
| Safe@Home R | 2.41 | 0.22 | 0.000 | 2.02 | 2.87 |
| Black | 1.13 | 0.13 | 0.269 | 0.91 | 1.42 |
| Hispanic | 1.12 | 0.13 | 0.337 | 0.89 | 1.39 |
| Other/unknown race | 1.17 | 0.17 | 0.278 | 0.88 | 1.55 |
| ID: Maltreatment | 0.94 | 0.20 | 0.759 | 0.62 | 1.42 |
| ID: Child functioning | 1.05 | 0.21 | 0.817 | 0.71 | 1.54 |
| ID: Parenting | 0.73 | 0.07 | 0.001 | 0.61 | 0.88 |
| ID: Adult functioning | 0.68 | 0.09 | 0.004 | 0.52 | 0.88 |
| Previous child welfare | 0.99 | 0.10 | 0.917 | 0.81 | 1.21 |
| Child age | 1.01 | 0.01 | 0.514 | 0.99 | 1.02 |

**Figure A4. Kaplan-Meier Survival Estimates for Reaching Permanency with a Parent in the Safe@Home Reunification and Comparison Group (*n* =837)**


**Number at risk (open cases)**

| | Begin observation | 12 months | 24 months | 36 months | 48 months | 60 months | 72 months |
|---|---|---|---|---|---|---|---|
| **Comparison** | 507 | 291 | 158 | 70 | 39 | 12 | N/A |
| **Safe@Home** | 330 | 96 | 28 | 11 | 3 | N/A | N/A |

Note: maximum observation period for Comparison group was 80 months and maximum observation period for Safe@Home group was 59 months

## Repeat maltreatment after case closure

**Table A15. Results of logistic regressions comparing the effect of Safe@Home for Reunification on repeat maltreatment within 6 months of case closure (*n* = 806 cases that closed)**

| | Odds Ratio | Std. Err. | Sig. | [95% Conf. | Interval] |
|---|---|---|---|---|---|
| Safe@Home R | 1.14 | 0.43 | 0.723 | 0.55 | 2.37 |
| Black | 0.47 | 0.23 | 0.118 | 0.18 | 1.21 |
| Hispanic | 0.97 | 0.46 | 0.950 | 0.39 | 2.44 |
| Other/unknown race | 1.02 | 0.59 | 0.972 | 0.33 | 3.15 |
| ID: Maltreatment | 0.95 | 1.04 | 0.962 | 0.11 | 8.16 |
| ID: Child functioning | 1.00 | (omitted) | | | |
| ID: Parenting | 1.23 | 0.51 | 0.619 | 0.55 | 2.77 |
| ID: Adult functioning | 0.52 | 0.28 | 0.216 | 0.18 | 1.47 |
| Previous child welfare | 11.38 | 4.71 | 0.000 | 5.05 | 25.63 |
| Child age | 0.99 | 0.04 | 0.764 | 0.91 | 1.07 |
| Permanency with parent | 8.00 | 6.08 | 0.006 | 1.80 | 35.51 |
| _cons | 0.00 | 0.01 | 0.000 | 0.00 | 0.04 |

Note: ID: Child functioning = 1 predicts repeat maltreatment perfectly, ID: Child functioning dropped and 42 observations not used

**Table A16. Results of logistic regressions comparing the effect of Safe@Home for Reunification on repeat maltreatment within 12 months of case closure (*n* = 806 cases that closed)**

| | Odds Ratio | Std. Err. | Sig. | [95% Conf. | Interval] |
|---|---|---|---|---|---|
| Safe@Home R | 1.57 | 0.49 | 0.148 | 0.85 | 2.89 |
| Black | 0.50 | 0.21 | 0.093 | 0.23 | 1.12 |
| Hispanic | 1.14 | 0.44 | 0.741 | 0.53 | 2.42 |
| Other/unknown race | 1.21 | 0.56 | 0.680 | 0.49 | 2.97 |
| ID: Maltreatment | 0.41 | 0.44 | 0.408 | 0.05 | 3.42 |
| ID: Child functioning | 0.49 | 0.54 | 0.515 | 0.06 | 4.13 |
| ID: Parenting | 0.99 | 0.33 | 0.971 | 0.51 | 1.90 |
| ID: Adult functioning | 0.54 | 0.25 | 0.185 | 0.22 | 1.34 |
| Previous child welfare | 10.00 | 3.22 | 0.000 | 5.32 | 18.81 |
| Child age | 0.97 | 0.03 | 0.381 | 0.91 | 1.04 |
| Permanency with parent | 5.64 | 3.13 | 0.002 | 1.90 | 16.73 |
| _cons | 0.01 | 0.01 | 0.000 | 0.00 | 0.06 |

**Table A17. Results of logistic regressions comparing the effect of Safe@Home for Reunification on re-entry in out-of-home care within 6 months of case closure (*n* = 806 cases that closed)**

| | Odds Ratio | Std. Err. | Sig. | [95% Conf. | Interval] |
|---|---|---|---|---|---|
| Safe@Home R | 1.03 | 0.39 | 0.932 | 0.50 | 2.14 |
| Black | 0.42 | 0.20 | 0.066 | 0.17 | 1.06 |
| Hispanic | 0.83 | 0.37 | 0.673 | 0.34 | 2.00 |
| Other/unknown race | 0.68 | 0.40 | 0.517 | 0.21 | 2.18 |
| ID: Maltreatment | 0.73 | 0.80 | 0.772 | 0.08 | 6.25 |
| ID: Child functioning | 1.00 | (omitted) | | | |
| ID: Parenting | 0.72 | 0.28 | 0.398 | 0.34 | 1.54 |
| ID: Adult functioning | 0.40 | 0.20 | 0.069 | 0.15 | 1.07 |
| Previous child welfare | 7.56 | 2.87 | 0.000 | 3.59 | 15.93 |
| Child age | 0.99 | 0.04 | 0.882 | 0.92 | 1.07 |
| Permanency with parent | 2.32 | 1.14 | 0.087 | 0.88 | 6.10 |
| _cons | 0.04 | 0.03 | 0.000 | 0.01 | 0.20 |

*Note*: ID: Child Functioning = 1 predicts re-entry perfectly, ID: Child Functioning dropped and 42 observations not used

**Table A18. Results of logistic regressions comparing the effect of Safe@Home for Reunification on re-entry in out-of-home care within 12 months of case closure (*n* = 806 cases that closed)**

| | Odds Ratio | Std. Err. | Sig. | [95% Conf. | Interval] |
|---|---|---|---|---|---|
| Safe@Home R | 1.05 | 0.34 | 0.884 | 0.56 | 1.97 |
| Black | 0.52 | 0.20 | 0.096 | 0.24 | 1.12 |
| Hispanic | 0.92 | 0.36 | 0.830 | 0.43 | 1.98 |
| Other/unknown race | 0.54 | 0.30 | 0.263 | 0.19 | 1.58 |
| ID: Maltreatment | 0.45 | 0.49 | 0.466 | 0.05 | 3.78 |
| ID: Child functioning | 0.60 | 0.65 | 0.639 | 0.07 | 4.99 |
| ID: Parenting | 0.74 | 0.25 | 0.364 | 0.39 | 1.42 |
| ID: Adult functioning | 0.50 | 0.24 | 0.143 | 0.20 | 1.26 |
| Previous child welfare | 10.38 | 3.48 | 0.000 | 5.38 | 20.03 |
| Child age | 0.96 | 0.03 | 0.279 | 0.90 | 1.03 |
| Permanency with parent | 3.01 | 1.35 | 0.014 | 1.25 | 7.25 |
| _cons | 0.04 | 0.03 | 0.000 | 0.01 | 0.15 |