

## DHS Intensive Family Service: Quasi-experimental evaluation

This report presents the results of a high quality quasi-experimental evaluation assessing the impact of the Intensive Family Services (IFS) on family preservation over a 24-month period.

### *What was evaluated*

This evaluation explicitly considers eligibility, referral and triage processes, and then compares long-term outcomes between those who received an IFS, and a “matched” comparison group who were eligible for an IFS but did not receive IFS, as well as a comparison to the general South Australian (SA) population.

Analysis includes children in families referred to IFS from **1st July 2021 to 31st May 2022**, with follow-up for 24 months. This was made possible by leveraging the Better Evidence Better Outcomes Linked Data – BEBOLD – platform.

## Key Takeaways

### *Complexity greater than realised*

Children in families who received IFS showed markedly higher rates of contact with multiple government systems in the year prior to IFS referral compared to the general SA population, and slightly higher rates compared to children who were referred to IFS but did not receive IFS support.

There were complex challenges related to family functioning and child safety.

- **Mental Health:** Nearly 1 in 5 IFS children had a parent with mental health-related ED presentation/hospitalisation(s) in the year prior, almost **6 times as likely** as the general population.
- **Drug / Alcohol:** IFS children were over **5 times as** likely to have a parent with a drug/alcohol-related ED presentation/hospitalisation in the year prior.
- **Homelessness:** Children in IFS families were nearly **8 times** as likely to have accessed homelessness services in the year prior compared to the general population.
- **Parental Imprisonment:** IFS children were **6 times as** likely to have a parent imprisoned in the year prior than the general population.
- **Parental OOHC:** IFS children were more than **2 times as** likely to have a parent with a history of out-of-home care than the general population.

**Families referred for an IFS were 2 to 7 times more likely to have experienced multiple, complex challenges related to family functioning and child safety, compared to the general population.**

The IFS program is reaching families with the high levels of need and vulnerability. The similarly high rates of complexity among families referred but not supported by IFS indicates that referrers are also successfully identifying those at in higher need of intensive family support.

## *Risk is dynamic*

Preservation is a challenging outcome because child safety risk is dynamic and cannot always be influenced by service involvement. Changing child safety risk can reflect changing family circumstances unrelated to service involvement (e.g. a new partner or unsafe adult in the home). This means that child safety concerns can escalate and de-escalate over time, sometimes leading to child protection involvement through reports, investigations, substantiations and child removals.

There are clear signals in the child protection system indicating safety risk for children referred to IFS, and changes to this risk over time. For example:

- Children in families supported by IFS had increased risk of at least one child protection notification, screened-in notification, investigation and/or substantiation shortly before they were referred
- For children supported by IFS, in the year prior to the IFS referral there were more than 1 in 10 children substantiated for maltreatment, and a small proportion (0.7%) had previously been removed and then returned to their family.
- This highlights that many children referred to IFS experienced circumstances indicating serious child safety concerns prior to their referral. It is also indicative of the dynamic nature of risk in these families and the degree to which risk can change over a 12-month period.

## *Did IFS improve family preservation?*

We applied the 'Target Trial Framework' and used quasi-experimental methods to create a high-quality analysis that conforms as closely as possible to a Randomised Control Trial (RCT) to generate a causal estimate of preservation within 24 months for children who received IFS (supported by IFS) compared to children in the comparison group of non-IFS (not supported by IFS) families. We found that

- 93.2% of children in IFS were preserved (not in OOHC) within 24 months compared to 90.5% of children in the comparison group.
- IFS participation led to an absolute increase in preservation of 2.7% (95% CI 1.2%–4.3%) relative to children in the comparison group.

**The positive and sustained impact of IFS on family preservation reinforces the critical need for long-term, intensive, coordinated support for all families in need.**

These findings underscore that IFS increased family preservation in the context of families navigating multiple, intersecting vulnerabilities that can change over time.

## **Moving forward**

The analyses and insights presented here represent the first stage in a long-term, ongoing evaluation of IFS. Compared to a one-time program evaluation, ongoing evaluation allows the results of previous program evaluation to inform future program iterations, driving a cycle of development and improvement based on regularly updated data. Analyses planned as part of this ongoing evaluation include:

- Future work include the effect of IFS on
  - secondary child outcomes related to safety and wellbeing, including substantiated child protection notifications, hospital admissions or emergency department presentations for injury, and school attendance;
  - parent outcomes related to safety and wellbeing, including hospitalisation or emergency department presentations for mental health or drug and alcohol related reasons.
- Augmenting BEBOLD with more recent years of IFS data will enable analysis of the effect of IFS as IFS services mature over time.

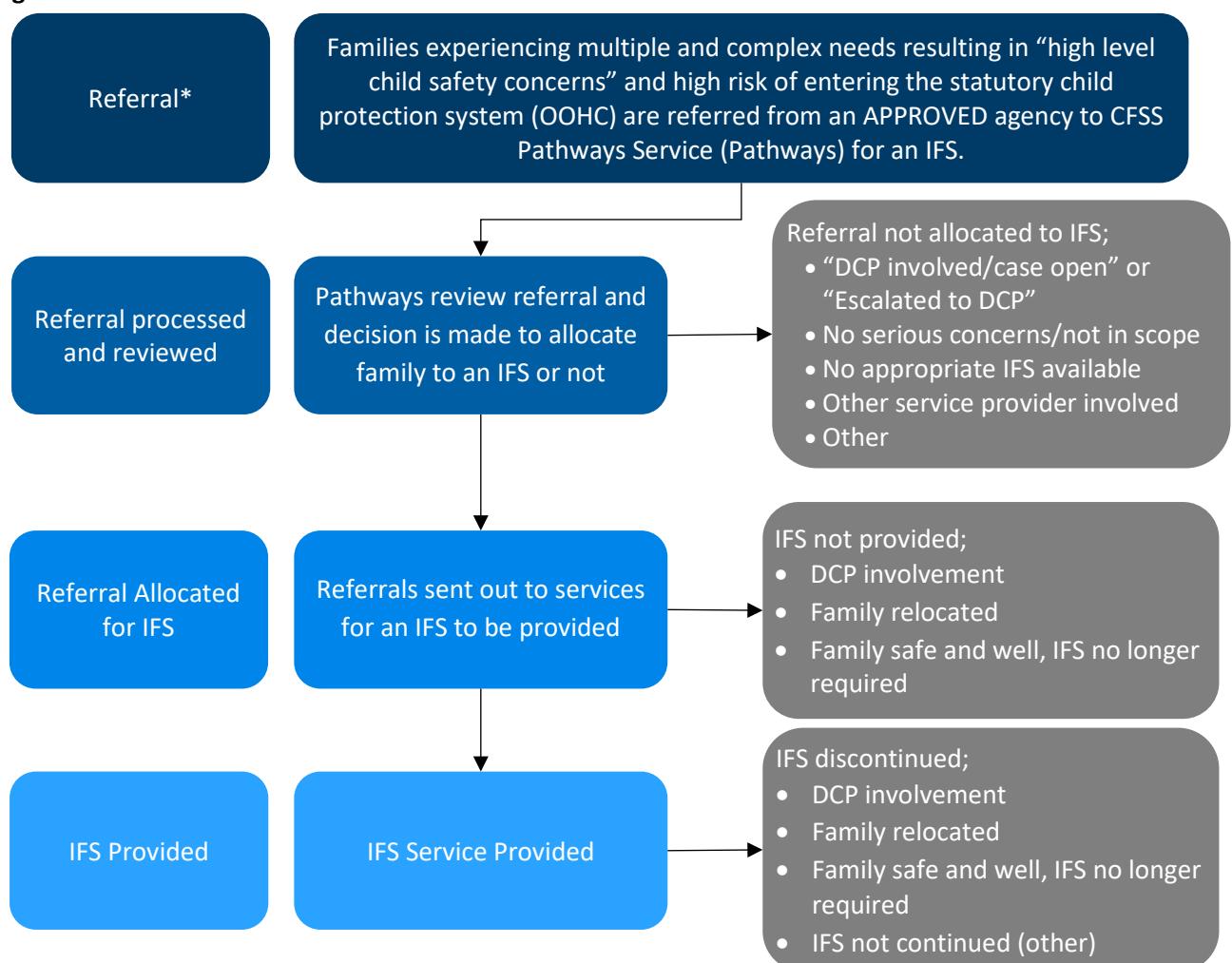
## Who we are

BetterStart Group is an interdisciplinary team with backgrounds in epidemiology, public health, psychology, allied health and social work. The BetterStart research team for the IFS project includes Dr Matthew Kaesler, Alicia Montgomerie, Associate Professor Rhiannon Pilkington and Professor John Lynch. The team have expertise in quasi-experimental methods which supports our ability to generate best possible estimates of causal effect. We utilised the BEBOLD platform and linked data from the Department of Human Services (DHS) Child and Family Support System (CFSS) on families who were referred for an Intensive Family Service (IFS). DHS brought their practice and service delivery expertise together with BetterStart Group's research expertise to enable the investigation of the long-term impact of IFS.

## DHS Intensive Family Services

Intensive Family Services (IFS) support families with high-level child safety concerns, aiming to keep children safely at home. Delivered by government and non-government providers, IFS provide intensive case management to reduce risk and strengthen family wellbeing. Figure 1 shows how referrals are made to DHS CFSS Pathways. Pathways review and allocate referrals to IFS, unless there is no capacity or a reason why the referral could not be matched to a service.

**Figure 1: How families are referred and receive IFS**



\*Referrals can only be made from approved agencies. DCP is an approved agency and 82% of referrals were from DCP.

## What we know about IFS families: Prior SA government systems contact

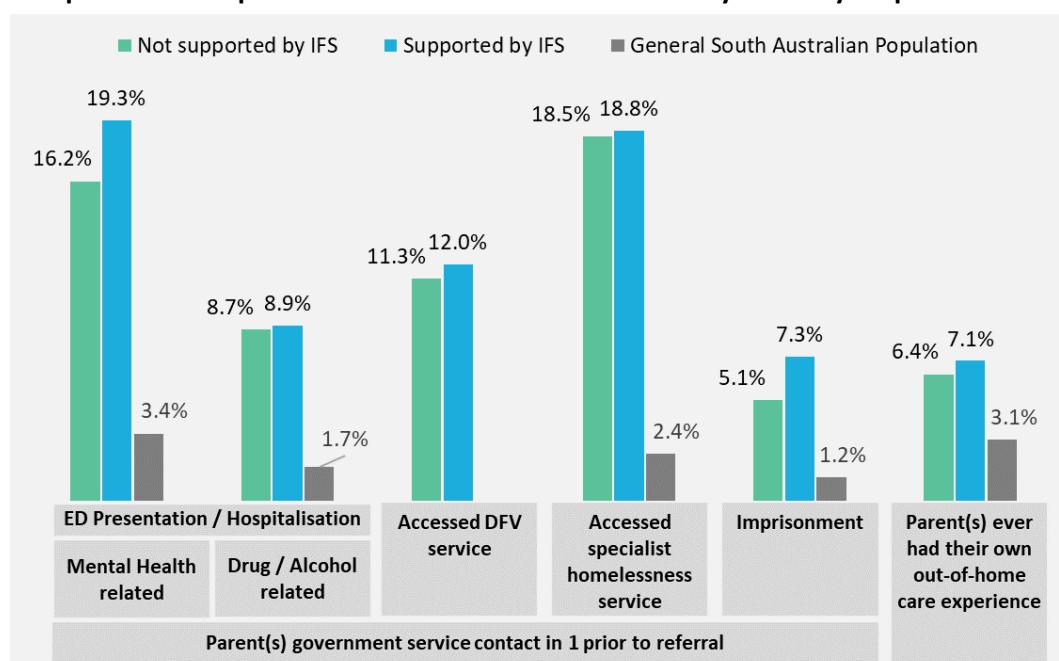
Figure 2 shows the prevalence of parent(s) contact with selected government systems in the 1 year prior to referral to IFS. It compares children who received an IFS (supported by IFS) with children who were referred but did not receive an IFS service (not supported by IFS), and a general SA population comparison group.

Children in families who received an IFS showed markedly higher rates of contact with multiple government systems in the year prior to referral.

**Compared to the general SA population, for children in families supported by IFS in the year prior to referral,**

<b>Mental Health related ED Presentation/ Hospitalisation:</b>	19.3% had a parent with at least one mental health-related ED presentation/ hospitalisation, 3.4% in the general population, RR=5.7 times as likely
<b>Alcohol and other drug (AOD) ED Presentation/ Hospitalisation:</b>	8.9% had a parent with at least one AOD-related ED presentation/ hospitalisation, 1.7% in the general population, RR=5.2 times as likely
<b>Specialist Homelessness Services:</b>	18.8% had a parent who accessed homelessness services, 2.4% in the general population, RR=7.8 times as likely
<b>Imprisonment:</b>	7.3% had a parent imprisoned, 1.2% in the general population, RR=6.1 times as likely
<b>Parental Out-of-Home Care History:</b>	7.1% had a parent with a history of their own out-of-home care, 3.1% in the general population, RR=2.3 times as likely

**Figure 2: Real-world prevalence of parental contact with SA Government Systems 1 year prior to referral for children of families who received an IFS (supported by IFS) and those referred but did not receive an IFS (not supported by IFS) to the general population**



Children in families who were supported by IFS had markedly higher contact (2.3 to 7.8 times as likely) with multiple government systems and faced more complex challenges than the general population and slightly increased risk (1.6% to 43.1% increased risk) compared to families referred to IFS but not supported. IFS successfully reached the most vulnerable families, and referrers effectively identified those in greater need.

## Family complexity

Overall real-world prevalence in the IFS population for four key domains of risk:

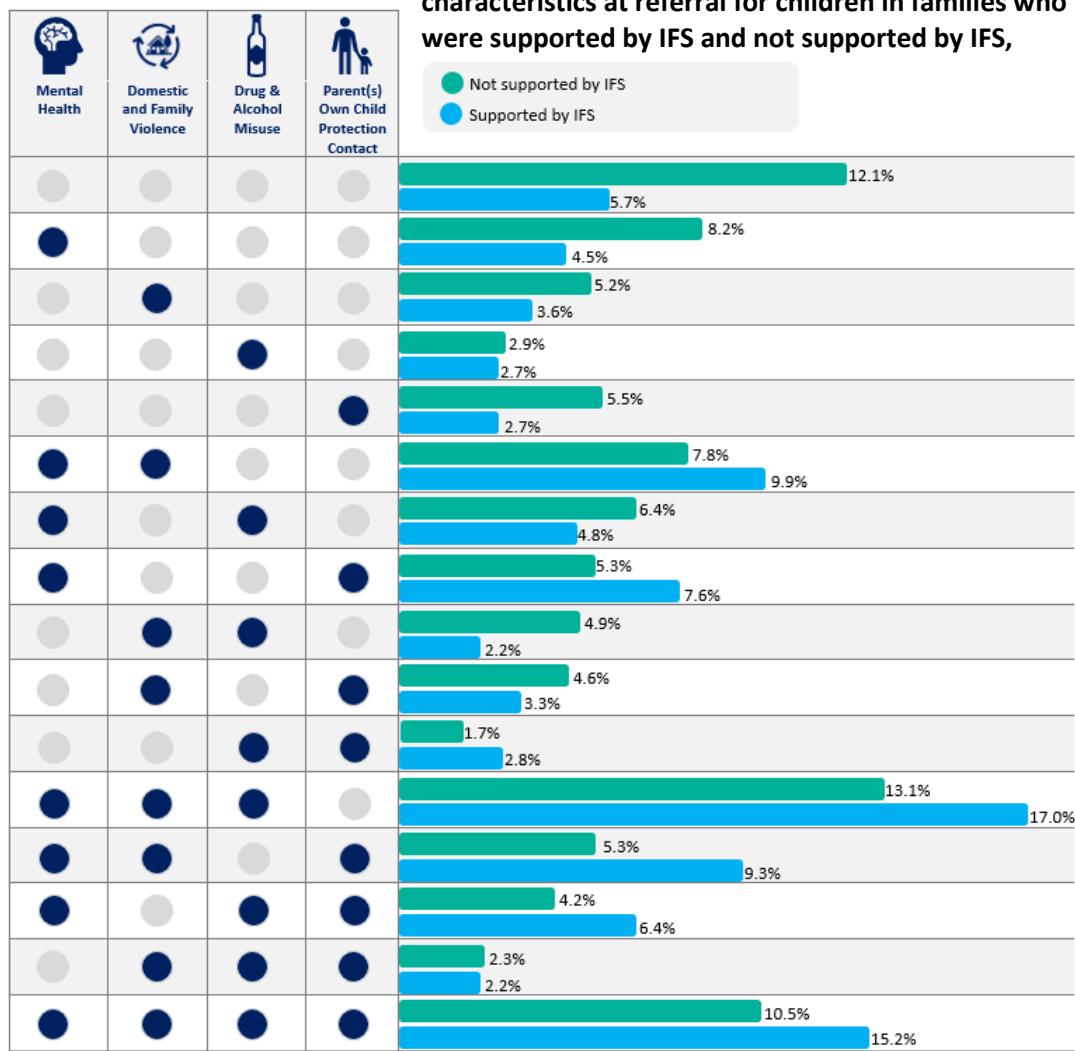
- **Parental mental health issues:** 74.7% for children supported by IFS vs 60.8% not supported by IFS had at least one parent with a mental health issue;
- **Domestic and family violence (DFV):** 62.7% for children supported by IFS vs 53.6% children not support by IFS had at least one indicator of DFV;
- **Parental drug and alcohol (D&A) misuse:** 53.3% for children supported by IFS vs 46.0% children not supported by IFS; and
- **Parent(s) with child protection history:** 49.5% children supported vs 39.5% children not support by IFS
- **3+ domains of risk:** One in two children (50.1%) children supported by IFS experienced three or four domains, compared to 35.4% of children not supported by IFS.
- **Only one domain of risk:** 13.6% of children supported by IFS were in families with only one domain of risk, compared to 21.8% not supported by IFS.

Figure 3 shows the real-world prevalence of different combinations of the four key risk domains.

For example

- All domains of complexity (bottom row): 15.2% of children supported by IFS were in families with all four domains, mental health, DFV, D&A misuse & parent(s) with child protection history, compared to 10.5% not supported by IFS.
- Only 5.7% children supported by IFS experienced none of the domains, compared to 12.1% not supported by IFS.

**Figure 3: Real-world combinations of parental characteristics at referral for children in families who were supported by IFS and not supported by IFS,**



Mental illness - Mental/Emotional health - Current, Mental illness - current, any parent mental health related ED presentation and/or hospitalisation 12 months prior.  
 Domestic and Family Violence - DFV - Current, any parent DFV service 12 months prior.  
 Drug & alcohol misuse - Drug and alcohol misuse - Current, any parent drug and/or alcohol related ED presentation and/or hospitalisation 12 months prior.  
 Parent(s) Own Child Protection Contact - Parental Foster Care history, any parent ever notified prior, any parent ever out of home care prior.

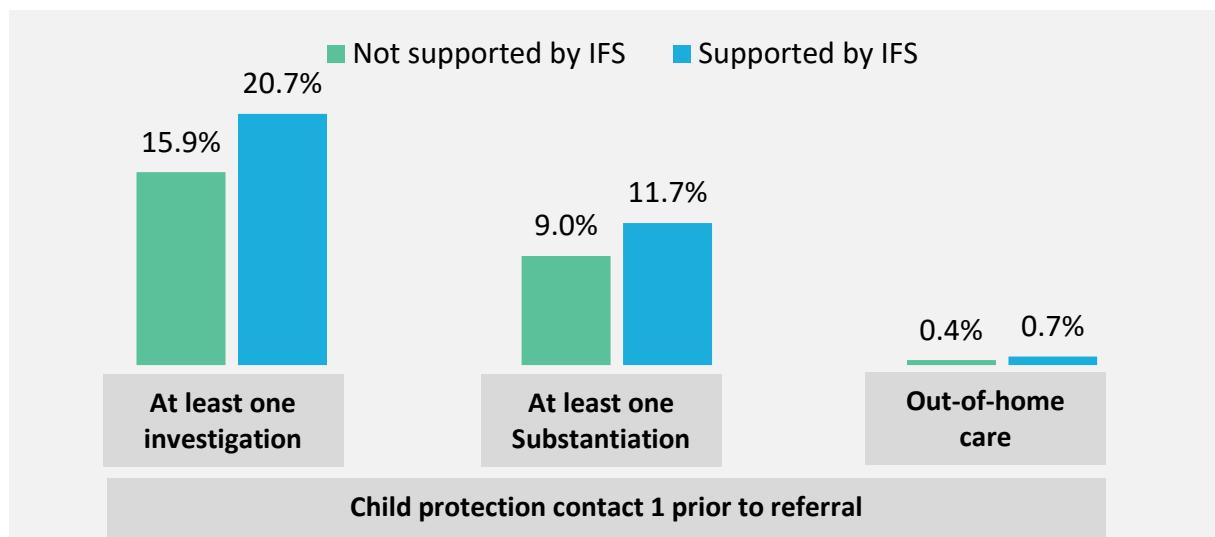
Families supported by IFS were more likely to face complex and overlapping challenges across all four risk domains. This suggests that IFS reached families with higher levels of need and vulnerability, highlighting its role in targeting families experiencing high risk child safety concerns.

## Dynamic nature of challenges faced by families

Figure 4 shows that children in families supported by IFS had higher levels of child protection contact compared to the group who were referred but not supported by IFS. In the year prior to the IFS referral, 20.7% of children in families who were supported by IFS vs 15.9% not supported by IFS had a child protection investigation, 11.7% vs 9.0% a substantiation, and 0.7% vs 0.4% experienced OOHC placement.

More than 1 in 10 children were substantiated for child maltreatment prior to IFS referral, and some of these children were removed. This shows that many children referred to IFS experienced serious child safety issues prior to their referral. It is also indicative of the dynamic nature of risk in these families and the degree to which risk can change over a 12-month period.

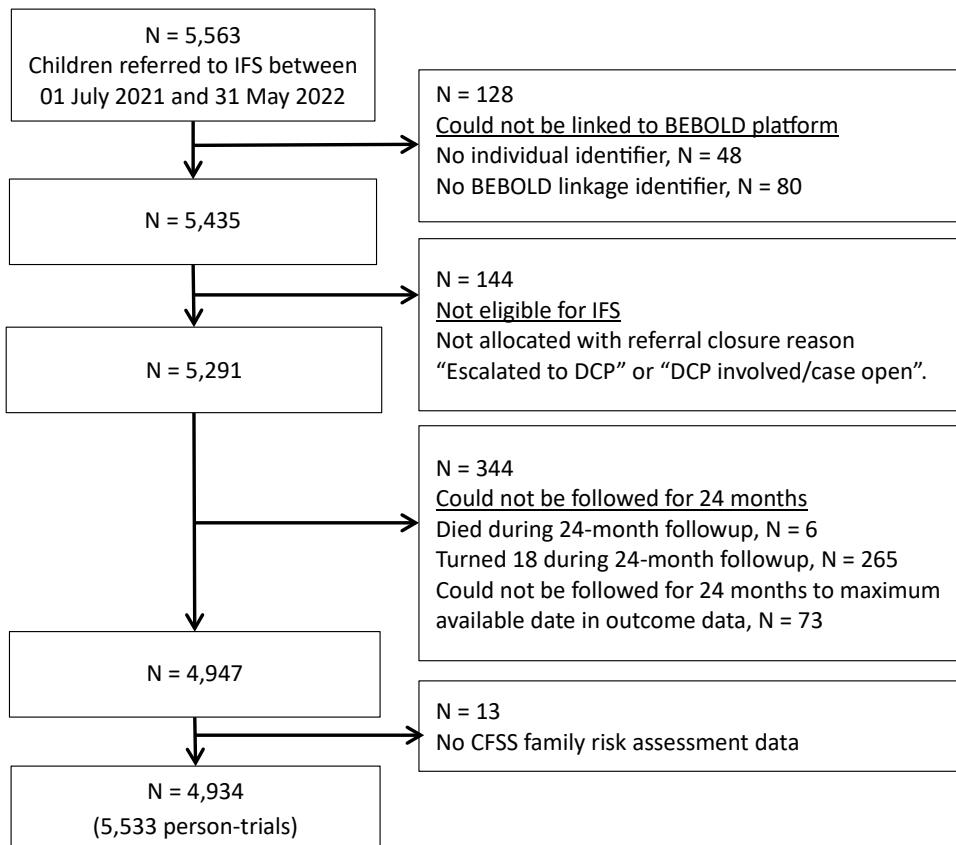
**Figure 4: Real-world prevalence of child protection contact in the 1 year prior to referral for families who received an IFS (supported by IFS) and families who were referred but did not receive an IFS (not supported by IFS)**



## Methodology

Preservation was defined as a child not entering out of home care (OOHC) in the 24 months following referral. We compared preservation 24 months from referral among children who received IFS (supported by IFS) compared to children who were referred but did not receive IFS (not supported by IFS). The population included 4,934 children who were referred for IFS from 1st July 2021 to 31st May 2022. Figure 5 shows how we determined an eligible population of children for the analysis.

**Figure 5: Population flowchart for causal analysis of 24-month preservation outcome**



### Target Trial Framework

The Target Trial Framework explicitly supports structuring the analysis so that it conforms as closely as possible to a Randomised Control Trial (RCT). We designed and analysed the real world non-randomised observational linked data in a way that mimics an 'ideal' or 'target' pragmatic RCT. This approach is recommended best practice for using observational data to generate causal effect estimates.

### Causal Modelling

We modelled the causal effect of the IFS on preservation within 24-months, using Targeted Maximum Likelihood Estimation (TMLE), which is a 'doubly robust' method involving estimation of both a treatment model and an outcome model. This modelling provides the best possible estimate of the causal effect of IFS, after making the IFS families and the comparison group as comparable as possible on 54 baseline confounders. TMLE is a best-practice method to make the potential outcomes of IFS and non-IFS families exchangeable when using observational data. TMLE minimises differences in the distribution of observed characteristics (i.e., confounding) between IFS families, and the comparison group who 'look like' IFS families on background characteristics, but did not receive the IFS.

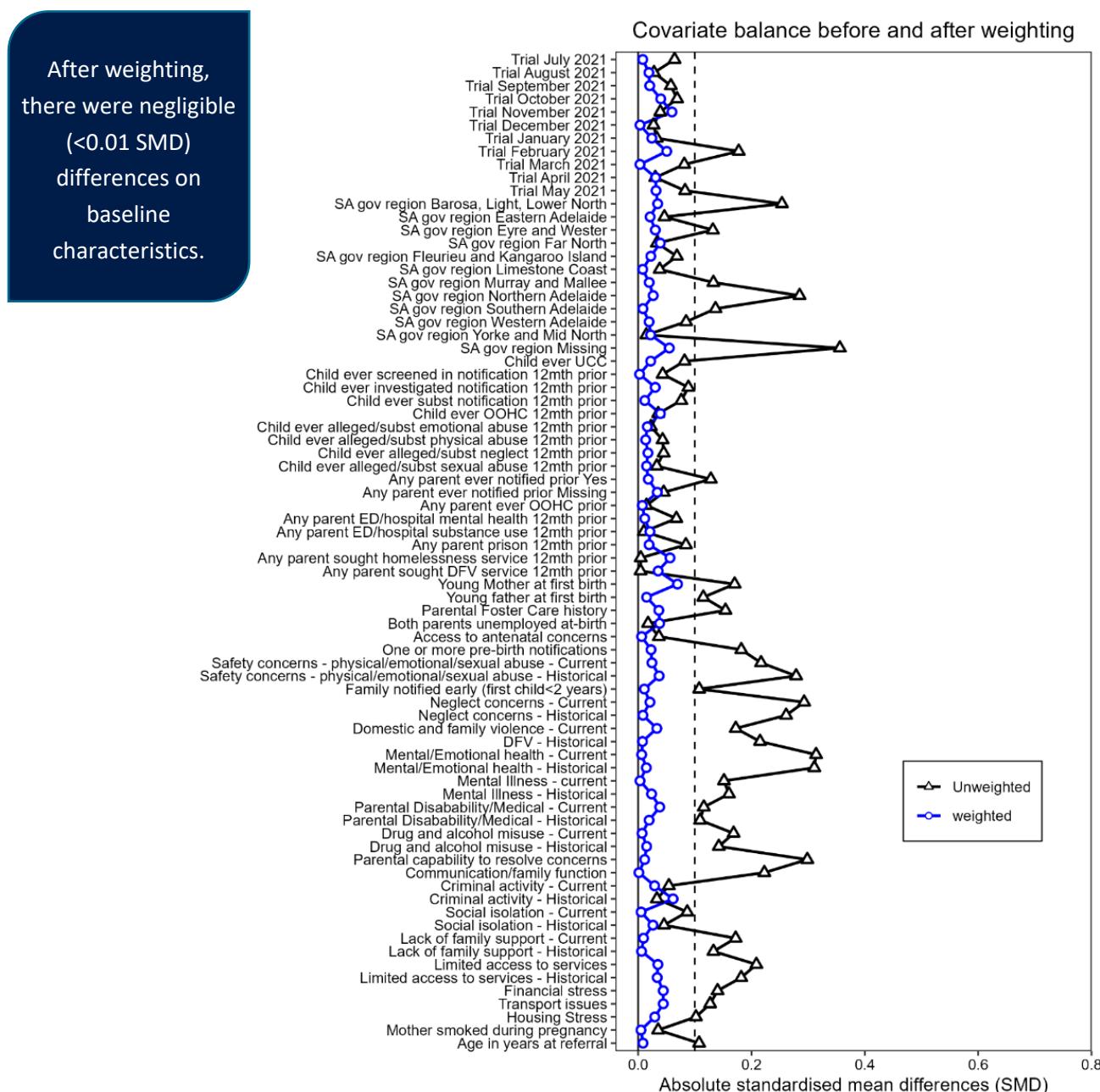
## Assessing baseline differences between the IFS and the non-IFS groups

By using data collected in the IFS family complexity assessment and from the BEBOLD platform, we compared 54 characteristics of children and families supported and not supported by IFS.

Our assessment of similarity on background characteristics balance comes from the TMLE treatment model, also known as a 'propensity score' model that estimate Inverse Probability of Treatment Weights (IPTW). We undertake this assessment outside of the TMLE process, because TMLE does not generate similar metrics to enable an assessment of 'balance' on covariates.

The black lines show that without weighting we are potentially comparing apples with oranges – those supported and not supported by IFS differ on several characteristics. The blue lines show that after using the IPTW (weighting), those differences have narrowed to acceptable levels, so we are closer to comparing apples with apples on the 54 measured characteristics.

**Figure 6: Standardised mean differences (SMD) for the 54 baseline characteristics before weighting, (black line with triangles), and after weighting, (blue line with circles)**



## What we found

Table 1 presents the causal estimates of preservation within 24 months for children who received IFS (supported by IFS) compared to children in the comparison group of non-IFS (not supported by IFS) families.

**Table 1: Estimated effects of the IFS on preservation within 24 months in BEBOLD for referrals from 1<sup>st</sup> July 2021 to 31<sup>st</sup> May 2022**

	Modelled Outcome Prevalence		Modelled Effect Estimates (TMLE)	
	Comparison - Not supported by IFS N=3,582	IFS N= 1,951	RD [95% CI]	Absolute risk difference [95% CI]
	%	%		
Preservation within 24-months	90.5%	93.2%	0.027 [0.012; 0.043]	2.7% [1.2% to 4.3%]

RD=Risk Difference. CI = Confidence Interval TMLE= Targeted Maximum Likelihood Estimation Note: The 95% Confidence Intervals (95% CI) represent a range of effects that are consistent with the available data. Some of the 95% CIs are consistent with positive, null and negative effects. Nevertheless, the point estimates of absolute risk differences are the 'best' estimates available from the data. The 95% CIs represent uncertainty in how precisely the absolute risk differences can be estimated from the available data. Best practice methodological recommendations are clear that 95% CIs should not be naively interpreted as 'significant' or 'not significant' based on whether the 95% CI includes the null, and then conclude that there is no difference between the groups.

### Key message:

There was a beneficial effect of IFS on preservation (not in OOHC) within 24 months. IFS participation led to an absolute increase in preservation of 2.7% (95% CI 1.2%–4.3%) relative to children in the non-IFS comparison group.

- 93.2% of children in IFS were preserved (not in OOHC) within 24 months compared to 90.5% of children in the comparison group.

## Data sources

This project utilised data from the Better Evidence Better Outcomes Linked Data (BEBOLD) platform, a comprehensive whole-of-population de-identified linked data platform. BEBOLD contains de-identified data on 1.5 million individuals in South Australia born from 1991 onwards and their parents, and spans more than 30 different government administrative data sources. Data used for this analysis came from:

- CFSS Pathways, Department of Human Services
- Child Protection, Department for Child Protection
- Birth registrations, Attorney General's Department
- Adult Imprisonments, Department of Corrections
- Admitted Patient Care, Department for Health and Wellbeing;
- Emergency Department Data Collection, Department for Health and Wellbeing; and
- SA Specialist Homelessness Services (Homelessness to Home, H2H), Department of Human Services.

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- SA Department for Child Protection
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## Disclaimer

The views expressed here do not necessarily reflect those of our government and non-government partners.

### Who we are

BetterStart Group is an interdisciplinary team with backgrounds in epidemiology, public health, psychology, allied health and social work. Our expertise spans the first 1000 days, early childhood education and care, child maltreatment, justice systems, housing and homelessness, mental health, substance misuse, domestic, family and sexual violence, and social and economic inequalities. Our aim is to generate evidence that is useful to inform policy and practice and that can improve health and wellbeing of children, young people, families, and communities.

### Contact us

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