

Measuring success: program fidelity of Queensland's child health home visiting services. A document analysis

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ABSTRACT

Background. The Family C.A.R.E. (Community-based Assistance Resourcing and Education) program was introduced in Queensland two decades ago. It aimed to redress health inequalities for infants from families experiencing specific social stressors. The program has been locally adapted over time and has not been evaluated against the original program. This study assessed the extent to which selected hospital and health services in Queensland, Australia have modified the original Family C.A.R.E. program. **Methods.** Altheide's model was used to facilitate a critical document analysis of policies and guidelines for adapted Family C.A.R.E. home visiting programs in use by hospital and health services (target $n = 7$). **Results.** Five of seven eligible services provided service model documentation. There was low alignment with the original Family C.A.R.E. program across four of the five participating services. While the program delivered within Service 4 was highly aligned to the structure and intent of the original model, variation to the program was still evident. Importantly, four of the five participating programs were not collecting evaluation measures. **Conclusions.** Health services have adapted the original Family C.A.R.E program format to 'fit' the local service environment but have largely failed to collect data to facilitate evaluation. Inability to evaluate the program leads to uncertainty about program success and benefits as well as any unintended consequences for families engaging in unevaluated home visiting programs. This study highlights the importance of monitoring program fidelity and evaluating success given the potential ramifications for this vulnerable cohort and for health service delivery.

Keywords: care co-ordination, child health services, community health: nursing, document analysis, family C.A.R.E program, family health, maternal-child health, nurse home visiting.

Introduction

Investment in an infant's first years of life has the greatest potential to affect childhood outcomes such as learning, school success, employment, social capacity, and health (Moore *et al.* 2015, 2017). However, a widening gap exists between outcomes for infants from high-functioning families compared with those from families experiencing vulnerability¹ (Heckman and Mosso 2014; Kimla *et al.* 2019). Within Australia, publicly funded child and family health services, administered by state government services, aim to provide universal services to the general population. Universal services monitor child development, support families in their parenting role, and promote secure attachment between infants and their primary caregiver. Targeted child and family health services, however, aim to reduce disadvantage by addressing risk factors and providing additional support for families experiencing social vulnerabilities (Australian Health Ministers' Advisory Council 2011). Families experiencing vulnerabilities are often least likely to receive the services they require. Barriers facing these families may include lacking the resources or confidence

¹A 'compounding effect' occurs when families experience multiple types of social disadvantage, such as unemployment, low education, poor physical/mental health, alcohol/substance use, physical/sexual violence, or child abuse and neglect (Butler *et al.* 2012). Families experiencing multiple disadvantages can be considered 'vulnerable' or at high risk of experiencing adverse health and wellbeing outcomes.

to access services; invisibility to, or ineligibility for, services; and reluctance to engage due to negative prior service experience (Butler *et al.* 2012; McDonald *et al.* 2012). To help overcome this, targeted services often provide care in the family's home to facilitate access, assist with building rapport, and provide greater support (Australian Health Ministers' Advisory Council 2011).

Numerous government programs have been implemented in Australia to address childhood disadvantage, to promote optimal health and development, and to combat potential negative sequelae (McDonald *et al.* 2012). One such program was the Family C.A.R.E. (Community-based Assistance Resourcing and Education) Program (FCP). The FCP was developed from The Family C.A.R.E. Research Project; a nurse home visiting intervention targeting vulnerable families recruited from a major urban tertiary referral hospital in the late 1990s (Cadzow *et al.* 1999; Chew 2003). Initial evidence from the project demonstrated positive short-term outcomes, and FCP was subsequently incorporated into a broader early intervention program introduced by the Queensland government (Armstrong *et al.* 1999, 2000; Huston and Armstrong 1999; Chew 2003).

Between 2000 and 2004, the FCP was trialled in selected Queensland hospital and health services (HHSs). State government funding was provided across 4 years in HHSs with low socio-economic status, high birth rates, and high rates of reported domestic and family violence, child abuse, and neglect among the population they serviced (Chew 2003). The FCP targeted families experiencing low maternal mood, financial stress, and domestic and family violence (Chew 2003). It was designed as a structured home visiting program to be delivered over a 12 month period to maximise protective factors during pregnancy and the first year of an infant's life (Queensland Health 2000). The intervention focused on developing trusting relationships with families; providing anticipatory infant care, and promoting healthy growth and development; supporting families to make decisions in the best interests of themselves and their children; and facilitating access to community resources and celebrating successes in caring for their child (Huston and Armstrong 1999; Queensland Health 2000). Home visiting staff collected client-related data at specific program intervals for monitoring purposes. The FCP also aimed to enhance early identification and management of 'at risk' families and increase child health nurse (CHN) awareness and skills in supporting maternal and infant health and wellbeing. Specific objectives included to:

- improve maternal and infant health, parent–infant attachment and self-efficacy in parenting,
- support infant cognitive and physical development,
- decrease maternal depression, anxiety, and distress,
- reduce the risk of infant abuse and neglect, vaccine preventable morbidity or mortality, and Sudden Infant Death Syndrome (SIDS) (Queensland Health 2000).

Having a state-wide approach to home visiting programs facilitates the delivery of co-ordinated and consistent services. However, since its commencement two decades ago, the FCP has been adapted by each HHS into which it was introduced (Latham *et al.* 2020), although it is not clear how these contemporary programs vary from the original FCP. Furthermore, it is not known how intended outcomes are measured in these adapted programs, if at all. Adaptations from the original FCP have not been evaluated or reviewed.

Reviews prepared for the Australian Research Alliance for Children and Youth (ARACY) Sustained Nurse Home Visiting Project detailed factors making programs effective and identified successful methods of engaging with vulnerable families (Huston and Armstrong 1999; McDonald *et al.* 2012). A recent scoping review by Latham and colleagues also identified specific elements of effective Australian-based home visiting programs, drawing particular attention to the importance of maintaining program content and intervention fidelity to achieve intended outcomes (Latham *et al.* 2020). Box 1 provides a summary of the common elements identified across programs. This scoping review aligned with the findings of the review prepared for ARACY by McDonald and colleagues (2012) (herein referred to as the ARACY review), highlighting that program content should focus on the risk factors the program was designed to prevent. If programs are adapted, they must be monitored to ensure the desired behavioural change and health outcomes for vulnerable families continue to be achieved (Duggan *et al.* 2022; McDonald *et al.* 2012; Latham *et al.* 2020).

Without a strong evidence base demonstrating that interventions are achieving their intended effects, it is difficult to assess where public funding is best allocated. There is also

Box 1. Common elements identified within contemporary child health home visiting programs in Australia.

Most common elements

- Positive nurse relationship
- Professional community nurse
- Antenatal visits
- Duration over 2 years
- Program fidelity
- Program flexibility
- Family partnership
- Information tailored to family needs

Less common elements

- Continuity of carer
- Programs targeted to families most likely to benefit

N.B. Summary of key findings from scoping review conducted by Latham *et al.* (2020).

increasing acknowledgement of the potential risk of harm or unintended outcomes of untested programs (Norton and Chambers 2020). There is a clear need to identify the extent of variation in Queensland's home visiting programs and their adherence to best practice principles. The aim of this study was therefore two-fold:

1. To compare contemporary programs against the original FCP to determine variations in components and/or evaluation measures.
2. To compare contemporary programs against the best-practice program elements identified by the ARACY review (Moore *et al.* 2012) and the scoping review (Latham *et al.* 2020) to determine opportunities for service improvement.

Methods

This descriptive study used Altheide's five stage framework (Altheide and Schneider 2012) to analyse documents relating to contemporary home visiting programs in Queensland. This approach was chosen as Altheide's framework has been used widely in the published literature and allowed for a critique and comparison of the selected programs' process, practice elements, impacts, and evaluation measures against the original FCP.

Stage 1: Sampling selection

Queensland public HHSs were the target population from which the sample of programs was drawn. Services were eligible for inclusion if they a) had a current community child health service using the FCP (or adapted derivative) to deliver services to vulnerable families; or b) had been part of the original FCP trial between 2000 and 2004 (Chew 2003).

Seven eligible HHSs were identified across metropolitan, regional, and remote areas of Queensland through clinical networks for child and youth health. These HHSs serviced populations with considerable proportions of families experiencing socioeconomic challenges and vulnerabilities, including Aboriginal and Torres Strait Islander families and those living in regional communities (Queensland Health 2000; Moore *et al.* 2012).

Stage 2: Data collection

Service managers of eligible HHSs were contacted directly via email to request policy or procedural documentation regarding the service's home visiting program. Five of the seven HHSs supplied documentation. One HHS declined to participate as a review of the service's program was being undertaken at the time of the study. The remaining HHS did not engage with the request.

Stage 3: Data organisation

All relevant documents received were included in the document analysis, with key program elements identified

and tabulated for comparison with those of the original FCP. The key elements of the original FCP are documented in Table 1.

Stage 4: Data analysis

Data variables (program aim, target group, eligibility, theoretical/conceptual frameworks, and evaluation measures) were extracted by the principal author (NL) and confirmed by research team members (see Table 2). Adapted programs were compared against the original FCP and each other, to identify similarities and differences across program elements. A scoring system was developed for this study to rate the alignment of the adapted programs to the original FCP. The researcher rated the alignment of each element of the adapted programs on a 3 point scale (0 = nil similarity, 1 = some similarity, 2 = same). Each program was then given an overall alignment rating (low = 0–4, moderate = 5–8, high = 9–12).

Stage 5: Report findings

Results of this analysis, including the strengths and limitations of contemporary programs and their alignment with the original FCP, are discussed in the context of findings from the ARACY reviews (Armstrong *et al.* 1999, 2000; Huston and Armstrong 1999; Chew 2003; McDonald *et al.* 2012; Moore *et al.* 2012) and the scoping review (Latham *et al.* 2020).

Ethics approval

An ethical exemption was granted from the participating ethics committee (LNR/2018/QRBW/43040). The research was assessed as a quality assurance activity.

Results

Home visiting programs for five of the seven eligible HHSs were available for review. These services covered parts of the state in metropolitan (Service 2), regional (Services 3, 4, and 5), and remote (Services 1 and 5) areas (Queensland Health 2018). Home visiting programs in all participating services were provided by experienced registered nurses with additional qualifications in child and family health.

Table 2 illustrates the characteristics of adapted programs currently used in participating HHSs.

Program aims

There was considerable variation in the stated aims of the programs reviewed, with limited evidence that program content was focused on addressing specific risk factors. The original FCP aimed to build parenting skills, reduce risk factors, and improve infant outcomes, specifically among

Table 1. Program characteristics of the original FCP, as implemented across seven Queensland Hospital and Health Services, 2000–2004.

Program	Program aims	Target group	Eligibility criteria	Theoretical/ conceptual frameworks	Evaluation measures
Original Family C.A.R.E.	<p>Redress health inequalities of more vulnerable families with newborns by providing supportive, professional home visiting services.</p> <ul style="list-style-type: none"> Identify women during the antenatal period with history of family violence in the previous year and/or maternal depression/mood disorder and/or financial stress Increased awareness and skills among child health service providers in maintaining and enhancing maternal and infant health and wellbeing Maximise protective factors for mother and infant during the first year Support access to health services and connection to community services Improved maternal and infant health and attachment Increased self-efficacy in parenting Optimal cognitive and physical development among infants Decreased maternal depression, anxiety and distress Decreased risk of abuse/neglect of infants Decreased risk of vaccine preventable morbidity/mortality Decreased risk of SIDS 	Families with issues related to maternal mood, financial stress, or a report of abuse in the home environment.	<p>Families referred from antenatal or postnatal maternity services, general practitioners or non-government organisations.</p> <p>Assessment tools:</p> <ul style="list-style-type: none"> Domestic violence screening questions, including a question relating to financial stress. Edinburgh Postnatal Depression Scale (EPDS). <p>Parent risk markers:</p> <ul style="list-style-type: none"> Affirmative response to any of the domestic violence initiative questions EPDS score of 16 or above Affirmative response to financial stress question 	Nil documented.	<p>Across the trial sites the following measures were monitored:</p> <ul style="list-style-type: none"> Presence of SIDS prevention factors Immunisation commenced or planned Parent satisfaction on communication, convenience, manner, satisfaction and time spent with the service at 7 months <p>The following data was collected at 6-monthly intervals to inform evaluation measures.</p> <p>Maternal demographic information:</p> <ul style="list-style-type: none"> Types of abuse reported EPDS score ≥ 12 Sole parent status Parity Aboriginal and/or Torres Strait Islander status Education level Financial stress Planned/unplanned pregnancy Attended antenatal care <p>Parental demographic information:</p> <ul style="list-style-type: none"> Psychiatric history History of abuse

families likely to experience health inequality. The program aims of Services 2 and 3 were most consistent with this. Service 1 was more focused on conducting needs assessments in a collaborative environment, while Service 4 was the only service to specifically aim to redress health inequalities. No specific program aims were articulated by Service 5.

Target group

Whereas the original FCP was specifically targeted towards families experiencing poor maternal mood, financial stress, and violence, Service 4 was the only service to have retained this original target group. Most services' target groups were significantly expanded from the original FCP. Aboriginal and Torres Strait Islander families and families from culturally and linguistically diverse backgrounds were included within the target groups for Services 1, 2, and 3.

Eligibility criteria

Contemporary programs retained some consistency with respect to the assessment tools used to determine eligibility. However, criteria for inclusion were substantially expanded across most programs compared with the original FCP. Services using a Care Coordination model (Services 1, 2, and 3) had much broader eligibility criteria.

Theoretical and conceptual frameworks

Care Coordination was used in Services 1, 2, and 3,² while Services 4 and 5 both used an adapted version of the FCP. Care Coordination is a form of case management, helping a broad range of families navigate existing health services. This contrasts with the FCP's narrower scope and focus on addressing factors associated with abuse and neglect. A common element through each of the programs was the use

²Known as the Extended Home Visiting program in Service 3.

Table 2. Program characteristics of adapted programs across participating HHSs, 2020.

Program	Program aims	Target group	Eligibility criteria	Theoretical/conceptual frameworks	Evaluation measures
Service 1	<ul style="list-style-type: none"> • Provide client-centred care for children in the context of family, their culture, and society. Working in partnership with child, family, and health services • Client participation and partnership • Conducting holistic, comprehensive client assessments to determine strengths, needs, and capacities • Developing a culturally safe collaborative plan of care to promote or sustain health goals • Working with and utilising community resources • Participating in intra- and multidisciplinary consultation and collaboration 	<ul style="list-style-type: none"> • Aboriginal and Torres Strait Islander families • Families with disabilities • Exposure to child abuse and neglect, family violence and sexual abuse • Rural and remote families • Culturally and linguistically diverse families • Substance use • Cumulative risk • Maternal and/or paternal mental illness • Poor maternal/infant attachment • Chronic illness 	<p>Family health assessment to identify risk and protective factors.</p> <p>Assessment tools:</p> <ul style="list-style-type: none"> • Family health assessment • Domestic violence screening tool • Edinburgh Postnatal Depression Scale (EPDS) • Safe Start <p>Parent risk markers:</p> <ul style="list-style-type: none"> • Poor antenatal care • Parents with intellectual/physical impairment • Parent < 18 or > 45 years • History of childhood abuse • Risk-taking behaviours related to alcohol/drug use, sexual health, and intentional/unintentional injury • Domestic or family violence • Parents with substance use/misuse • Parental mental health issues • Transient/unstable housing • Ambivalence relating to current pregnancy • Unhygienic/unsafe environment • Social isolation • Financial hardship/poverty • Limited access to supports • Sole parent • Unrealistic expectations of age-appropriate behaviour • Poor maternal/infant attachment <p>Child risk markers:</p> <ul style="list-style-type: none"> • Low birthweight (< 2.5 kg) • Low Apgar (< 5 at 5 min) • Developmental delay/disorder • Assisted ventilation • Altered nutritional status • Multiple birth • Congenital abnormalities/disability • Parent re-presenting continually (with unclear concerns for child's health) • More than four children in family 	Family Partnership Model, informed by a collaborative plan of care and multidisciplinary collaboration.	Families were reviewed at a multidisciplinary meeting at 3 months. Families were discharged from program if the risk of health issues was low or negligible due to protective factors. No formal evaluation on the effectiveness of the program.
Service 2	To provide a supportive framework to engage families willing and able to build their parenting capacity, skill, and knowledge to improve child health outcomes.	<ul style="list-style-type: none"> • Aboriginal and Torres Strait Islander families • Children with disabilities or chronic illness 	<p>The Family Health Assessment is used by the child health nurse (CHN) or intervention parenting specialist to identify clients that meet one or more risk factors that impact on the child, parenting capacity and/or family functioning.</p> <p>Assessment tools:</p> <ul style="list-style-type: none"> • Family health assessment 	Family Partnership Model to assist reflective practice and improve client/family-centred outcomes.	Review occurs when there is a change in the shared plan of care and at 3-month intervals. Performed in an interdisciplinary meeting led by a clinical nurse consultant (CNC), with CHN,

(Continued on next page)

Table 2. (Continued).

Program	Program aims	Target group	Eligibility criteria	Theoretical/conceptual frameworks	Evaluation measures
		<ul style="list-style-type: none"> Children exposed to child abuse and neglect, family violence, and sexual abuse Rural and remote families Culturally and linguistically diverse families Parents with substance use/misuse Parents with a mental illness Families with cumulative risk 	<ul style="list-style-type: none"> Domestic violence screening tool EPDS Safe Start <p>Parent risk markers:</p> <ul style="list-style-type: none"> Poor antenatal care Unintended (unplanned) pregnancy Ambivalence relating to current pregnancy Assisted reproduction Intellectual/physical impairment Parent < 18 or > 45 years History of childhood abuse Family violence Parents with substance use/misuse Current or recent history of mental illness Social circumstances including housing stress, financial stress, social isolation, limited access to supports Critical events impacting on parenting capacity Poor relationship between infant and carer Risk-taking behaviours Family structure e.g. one parent family, blended/step family, non-parental care <p>Child risk markers:</p> <ul style="list-style-type: none"> Preterm infant (< 37 weeks) Low birthweight (< 2.5 kg) Low Apgar (< 5 at 5 min) Assisted ventilation Admission of infant to a Neonatal Care Unit Congenital abnormalities/disability Poor relationship identified between infant/child/parent/carer 		early intervention parenting specialist (social worker or physiologist) and, if desired, an invited representative from an external agency involved in the client's care.
Service 3	To provide a supportive framework to engage the family who is willing and able to build their parenting capacity, skill, and knowledge to improve child health outcomes.	<ul style="list-style-type: none"> Aboriginal and Torres Strait Islander families Children with disabilities or chronic illness Children exposed to child abuse and neglect, family violence and sexual abuse 	<p>The Family Health Assessment is used by the CHN or the intervention parenting specialist to identify clients that meet one or more risk factors that impact on the child, parenting capacity, and/or family functioning.</p> <p>Assessment tools:</p> <ul style="list-style-type: none"> Family health assessment Domestic violence screening tool EPDS Safe Start <p>Parent risk markers:</p> <ul style="list-style-type: none"> Poor antenatal care Unintended (unplanned) pregnancy 	Family Partnership Model to assist reflective practice and improve client/family-centred outcomes.	Review occurs when there is a change in the shared plan of care and at 3-month intervals until the child is 2 years of age. Performed in interdisciplinary meeting led by a CNC, with CHN, intervention parenting specialist and, if desired, an invited representative from an external agency involved in the client's care.

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Table 2. (Continued).

Program	Program aims	Target group	Eligibility criteria	Theoretical/conceptual frameworks	Evaluation measures
		<ul style="list-style-type: none"> • Rural and remote families • Culturally and linguistically diverse families • Parents with substance use/misuse • Parents with a mental illness • Families with cumulative risk 	<ul style="list-style-type: none"> • Ambivalence relating to current pregnancy • Assisted reproduction • Intellectual/physical impairment • Parent < 18 or > 45 years • History of childhood abuse • Family violence • Parents with substance use/misuse • Current or recent history of mental illness • Social circumstances including housing stress, financial stress, social isolation, limited access to supports • Critical events impacting on parenting capacity • Poor relationship identified between infant/child/parent/carer • Family structure e.g. one parent family, blended/step family, non-parental care • Risk-taking behaviour <p>Child risk markers</p> <ul style="list-style-type: none"> • Preterm infant (< 37 weeks) • Low birthweight (< 2.5 kg) • Low Apgar (< 5 at 5 min) • Assisted ventilation • Admission of infant to a neonatal care unit • Congenital abnormalities/disability • Poor relationship identified between infant/child/parent/carer 		
Service 4	Redress the health inequalities of more vulnerable families with newborns by providing supportive, professional home visiting services.	<ul style="list-style-type: none"> • Families with issues related to maternal mood, financial stress, and report of abuse in the home environment 	<p>Families can be referred antenatal or up to 3 months postnatal.</p> <p>Assessment tools:</p> <ul style="list-style-type: none"> • Safe Start which includes a question relating to financial stress and questions identifying domestic violence • EPDS <p>Parent risk markers:</p> <ul style="list-style-type: none"> • An affirmative response to any of the domestic violence initiative questions • EPDS score 12 or above • An affirmative response to the financial stress question 	<ul style="list-style-type: none"> • Ecomap to facilitate the collaborative identification of relationships, issues, resources required, potential strengths, and assist in the planning of actions that lead to change • Family Partnership Model • Group process model for CHNs to reflect on their case load and feelings associated with client issues • Reflective practice model to develop and maintain awareness of client's feelings and needs, and CHN's self-awareness of response to the client 	<p>Program is completed when infant is 12 months of age or if family chooses to discontinue.</p> <p>Nil evaluation measures documented.</p>

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Table 2. (Continued).

Program	Program aims	Target group	Eligibility criteria	Theoretical/conceptual frameworks	Evaluation measures
				<ul style="list-style-type: none"> • Circle of security attachment theory supporting reflective practice and client sensitivities • 5 Ps model for documentation (Presenting Factors, Precipitating Factors, Protective Factors, Perpetuating Factors, and Predisposing Factors) • Clinical consultation (early intervention parenting specialist and CHN) to discuss cases using models and frameworks such as family partnership, case presentations, group process model and reflective practice model • Complex case conference is a multidisciplinary meeting (CNC, early intervention parenting specialist, Paediatrician, and CHN) for complex families including child safety cases 	
Service 5	Nil identified.	<ul style="list-style-type: none"> • Families in the antenatal and immediate postnatal period • Exclusion for families that do not have the baby in their care 	<p>Assessment tools:</p> <ul style="list-style-type: none"> • Safe Start • EPDS • Family Partnership tools <p>Clients need to meet two or more of the following criteria:</p> <ul style="list-style-type: none"> • Domestic violence • Low maternal mood • Financial stress as well as other psychosocial criteria 	<ul style="list-style-type: none"> • Family Partnership helping process • Circle of security attachment model • Triple P strategies • Safe sleep principles • Person centred care • Weekly multidisciplinary case conference (perinatal consultation service clinician, early intervention parenting specialist, paediatrician, CHN, and child protection liaison officer) for triage, allocation, support and input 	<ul style="list-style-type: none"> • Length of breastfeeding • Linked with child health services, general practitioner, and/or non-government organisation • Referral to early intervention parenting specialist services • Immunisation schedule complete • Up-to-date childhood growth and development

of the Family Partnership Model, incorporating goal setting and the development of a partnership between the CHN and the family. Another common element was supervision meetings, conducted regularly between CHNs and early intervention parenting specialists (social workers or psychologists with experience in attachment and parenting). Case conference meetings (which may include a paediatrician or child protection liaison officer³) were used to discuss families' progress, difficulties, and complex needs and formulate a management strategy plan. Services 2 and 3 highlighted continuity of care as a priority (noting this was not always possible), a factor not mentioned in other programs' documentation.

Program duration and evaluation measures

There was considerable variation in program duration and not all programs provided antenatal visits. Service 1 provided postnatal unstructured visiting tailored to the family's identified needs, usually across a 6-month period. Service 2 provided a highly structured program with oversight from child health managers; families were reviewed every 3 months and discharged when all goals were met. Service 3 accepted referrals at any age, broadening the scope of services referring families (i.e. paediatric and child development services). It had a flexible visiting structure with a common duration of 2 years. Service 4 followed the original FCP visiting structure and duration (15 visits over 12 months), which would allow evaluation against the original program, should relevant measures be collected. Service 5's program had a duration of 3–6 months and was the only service to specify evaluation measures.

Alignment with original FCP

Results indicate some consistency between contemporary programs, but considerable variation from the original FCP, as shown in Table 3. Low alignment was identified across four of the five participating HHSS.

Discussion

This document analysis compared the home visiting programs of five Queensland HHSS to identify how each had been modified from, and their level of alignment with, the original FCP. Service 4 was the only participating HHS to demonstrate high alignment with the original FCP. Nonetheless,

program variation was still evident, including a changed eligibility criterion for maternal mood (reduced Edinburgh Postnatal Depression Scale (EPDS) score from 16 to 12) and a lack of evaluation measures.⁴ This highlights that changes to the original FCP have not been made in a systematic way, with the potential for program elements to be altered in response to the local service context.

The evaluation methods used in the original FCP were due to the reporting requirements of a trial program.⁵ For most of the programs (other than Service 5) to have no defined evaluation measures at all, other than review at interdisciplinary and multidisciplinary team meetings, is concerning. This is, however, consistent with the findings of the scoping review (Latham *et al.* 2020) and other research (Watson *et al.* 2005), which has indicated home visiting programs are often unable to demonstrate effectiveness due to a lack of meaningful evaluation of data collected. The current study highlights that, while these programs may have successfully improved outcomes for families, this is difficult to demonstrate due to the absence of evaluation. There is a concerning lack of evidence to support the efficacy of current Queensland programs that have been adapted from the original FCP.

In their report of effective strategies for home visiting programs, ARACY stated that *how* programs are provided is equally as important as *what* programs provide to families in terms of achieving their objectives (Moore *et al.* 2012). While the original FCP did not specify a theoretical or conceptual framework, the contemporary programs analysed all had some consistency with the Family Partnership Model. The Family Partnership Model is an evidence-based framework for goal-orientated, partnership practice and is used in home visiting programs and universal child health services (Davis and Day 2010). Originating in the UK, it has been implemented into policy for practitioners working with children and families in Australia, New Zealand, and more broadly across Europe (Day 2013).

Three of the five services reviewed used the Care Coordination model, which broadened eligibility criteria to include target groups outside those of the original FCP (i.e. families experiencing poor maternal mood, financial stress, and domestic and family violence). Interestingly, these programs had a shortened overall program duration of 3 months, unless review of the family's ongoing needs supported further intervention. In practice, families were often referred to universal child health service programs to meet their ongoing needs (Service 4, personal communication, 31 August 2017).

³Child protection liaison officers within Queensland hospitals provide advice to staff of the agency responsible for child protection and facilitate referral processes (Department of Children Youth Justice and Multicultural Affairs 2019).

⁴This criterion may have been modified based on conflicting evidence about the score required to identify maternal distress, although current research recommends an EPDS score of 13 and above has sufficient sensitivity and specificity to detect major depression in both the antenatal and postnatal periods (Austin *et al.* 2017).

⁵It is noted, however, that the original FCP did not analyse associations between the measures collected and the specific interventions (e.g. did promotion of safe infant sleeping reduce prone sleeping or maternal smoking?).

Table 3. Comparison of programs.

Comparator	Characteristics of original FCP	Services 1, 2 and 3		Service 4		Service 5	
		Care Coordination	AS ^A	Family C.A.R.E	AS	Family C.A.R.E.	AS
Eligibility criteria	EPDS score 16 or above	Not stated	0	EPDS score 12 or above	1	EPDS score 14 or above	1
	Affirmative response to domestic violence initiative questions	Domestic or family violence	1	Affirmative response to domestic violence initiative questions	2	Domestic violence with another criteria	1
	Affirmative response to financial stress question	Financial hardship or poverty	1	Affirmative response to financial stress question	2	Financial stress with other psychosocial criteria	1
Evaluation measures	<ul style="list-style-type: none"> • SIDS prevention • Immunisation status • Patient satisfaction 	Multidisciplinary meeting review	0	Not stated	0	<ul style="list-style-type: none"> • Breastfeeding duration • Linked with services • Immunisation schedule • Development and growth status 	1
Duration of program	12 months	3 months–2 years	1	12 months	2	3–6 months	0
Target group	Families with issues related to mood, financial stress, and abuse in the home	<ul style="list-style-type: none"> • Aboriginal and Torres Strait Islander families • Families with disabilities • Exposure to child abuse, neglect, and violence • Rural and remote families • Culturally and linguistically diverse families • Substance use • Cumulative risk • Parental mental illness • Poor maternal/infant attachment • Chronic illness 	1	Families with issues related to mood, financial stress, and abuse in the home	2	Families in the antenatal and immediate postnatal period	0
Total alignment Score ^B		Low alignment	4	High alignment	9	Low alignment	4

^AAlignment score (AS): 0 = nil similarity, 1 = some similarity, 2 = same compared with original FCP.

^BTotal alignment Score: low = 0–4, moderate = 5–8, high = 9–12.

The ARACY review recommended that sustained home visiting programs be evaluated on their ability to achieve outcomes against stated intentions (McDonald *et al.* 2012). The original FCP's aims were to improve the target population's maternal and infant health, parent–infant attachment and self-efficacy in parenting; support the infant's cognitive and physical development; decrease maternal depression, anxiety, and distress; reduce risk of infant abuse and neglect; and reduce risk of vaccine preventable morbidity or mortality and SIDS. Having such clear objectives enabled evaluation measures to be defined and collected. This has not been replicated in the adapted versions and makes measuring outcomes for vulnerable families engaged with programs almost impossible.

The key elements of effective programs, identified by both ARACY and the scoping review, that are evident in the adapted models were a professional workforce of registered nurses skilled in child and family health, and provision of relationship-based care (Armstrong *et al.* 1999, 2000;

Huston and Armstrong 1999; Chew 2003; McDonald *et al.* 2012; Moore *et al.* 2012). By using the Family Partnership Model, all of the programs were able to meet ARACY recommendations that they be relationship-based, utilise partnerships between families and CHNs, and enable parents to set goal directions (Moore *et al.* 2012). The EPDS screening for maternal mood distress was utilised in all programs in the antenatal period and was not limited to primiparous mothers.

The elements of effective programs were, however, lacking in several respects. Broad program aims, target groups, and eligibility criteria made it difficult to determine whether programs were reaching families most likely to benefit from intervention or were focused on addressing identified risk factors. Additional focus on cultural sensitivity and non-stigmatising practice is required, given Aboriginal and Torres Strait Islander families and those from culturally and linguistically diverse backgrounds were target groups of several programs. No information was provided about program fidelity or flexibility, and the shortened duration of some programs

appeared to be driven by staffing and workload issues rather than client need.

Study limitations

The scope of this study was limited to how, rather than why, home nurse visiting programs differed in Queensland despite being derived from the original FCP. This study was further limited by its reliance on the documentation provided by HHSs. It is possible that the programs reviewed do include elements this study identifies as missing, but this was not substantiated by the documents provided. Consultation with key stakeholders would provide further context and is an area identified for further investigation. Furthermore, only five of the seven eligible HHSs participated in the current study, meaning a comprehensive analysis of home visiting programs state-wide was unable to be conducted.

Conclusion

This study compared nurse home visiting programs in selected Queensland HHSs with the original FCP. There was considerable variation between the programs in use across HHSs, and from the original FCP. The findings demonstrate that home visiting programs in Queensland have been poorly evaluated to date, with only one incorporating evaluation measures. It is understandable that programs may change over time due to a variety of factors. However, limited evaluation may have potentially contributed to model stagnation, with models adapted to meet service needs rather than outcomes for families, further contributing to the paucity of evidence to support home visiting programs. The Home Visiting Applied Research Collaborative (HARC) in the United States has developed a common research framework to help determine which interventions work best for families in different contexts, thereby advancing precision in the delivery of home visiting models (Duggan *et al.* 2022). Opportunities to address the gaps identified in this study may arise through investigating the evidence base of scalable models of care. For example, the Thriving Queensland Kids Partnership plans to deliver an evidence-based roadmap for family support services aimed at improving child wellbeing during the first 2000 days of life (Australian Research Alliance for Children and Youth 2022).

Continuing to use unevaluated programs raises several concerns. Without rigorous evaluation, it is unclear whether programs are delivering positive benefits for vulnerable families, effecting no change, or potentially resulting in unintended consequences. In a resource limited health environment, there is also a need to ensure public funding is directed towards programs with proven benefits. Best practice principles stipulate that if adapted programs continue to be used, appropriate data must be captured to enable evaluation of their ability to improve outcomes for families. Further research, including collaboration with HHSs, is

essential to develop and collect relevant measures and implement evaluation processes. Robust evaluation will ensure that these investments in an infant's first years of life reach their potential to positively impact childhood outcomes.

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Data availability. The data that support this study were obtained from participating HHSs by permission. Data may be shared upon reasonable request to the corresponding author with permission from the relevant HHS.

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