Review of Enhanced Maternal and Child Health

Brief Advisory Paper

The Centre for Community Child Health

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Prepared by:
Professor Sharon Goldfeld
Dr Tim Moore
Dr Karen McLean.

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The Review of Enhanced Maternal and Child Health was undertaken by the Centre for Community Child Health on behalf of the Department of Education and Training. The purpose was to provide an advisory paper on a proposed conceptual framework for the EMCH service.

The Centre for Community Child Health is a research group of the Murdoch Childrens Research Institute and a department of The Royal Children's Hospital, Melbourne.

Centre for Community Child Health
The Royal Children's Hospital Melbourne
50 Flemington Road, Parkville
Victoria 3052 Australia
Telephone +61 9345 6150
Email enquiries.ccch@rch.org.au
www.rch.org.au/ccch

List of Abbreviations

AEDC	Australian Early Development Census
ARACY	Australian Research Alliance for Children and Youth
CAARS	Common Approach to Assessment, Referral and Support
CCCH	Centre for Community Child Health
DET	Department of Education and Training
EMCH	Enhanced Maternal and Child Health
KAS	Key Ages and Stages
MCH	Maternal and Child Health
PEDS	Parents' Evaluation of Developmental Status
PER	Parent Engagement Resource

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Introduction

At the 2014 Victorian State Election, the Government committed to establishing Victoria as the Education State. Subsequently, the Department of Education and Training (DET) has been asked to develop a 10-year early childhood reform plan to transform government support for early childhood health, development and learning in Victoria and optimise outcomes for all Victorian children. Equity is an essential component of this planning and policy development.

The Department of Education and Training requested initial high-level recommendations on the possible future direction of the Enhanced Maternal and Child Health (EMCH) service for consideration and potential incorporation into the early childhood reform plan. Currently, the EMCH system seeks to provide additional support to vulnerable families, primarily through the provision of additional hours of contact with a maternal and child health nurse, within the first 12 months of the child's life.

This paper seeks to provide DET with high-level advice as requested and proposes a conceptual framework for the EMCH service within a progressive universal service model including advice on:

- a practice model and focus for EMCH (e.g. short term interventions or case management), and level of flexibility (i.e. ability to respond) versus prescription (i.e. set evidence-based interventions)
- the target group for the EMCH service, potential eligibility criteria (e.g. risk factors), and identification approaches (e.g. risk-based vs. response-based)
- the parameters of the dose for EMCH (e.g. age, number of hours, and intensity/distribution across the population).

This advice is based on the assumptions that the current universal MCH service will remain and that there will be an introduction of a third intensive level of service based on sustained in-home nurse visiting models. Together these form the Victorian Maternal and Child Health Service.

Methodology

To appropriately address this brief within the limited time frame, we utilised an evidence-informed expert consensus approach. This capitalised on the considerable depth of knowledge within the MCRI in regard to: (1) early childhood development; (2) proportionate universalism, public health and equity; (3) service system design, especially within the Victorian Maternal and Child Health and School Nursing services; (4) prevalence and interventions for common childhood problems; (5) maternal health; (6) nurse home visiting; and (7) ways of engaging and supporting vulnerable populations.

The three main components of this approach were:

1. ***Rapid literature review***. This drew upon existing literature reviews, mainly conducted by Centre for Community Child Health (CCCH) staff, supplemented by some key recent publications. The key documents consulted are listed below.

    - Review of the research evidence to support a revised service delivery model for the Victorian Enhanced Maternal and Child Health Service (Moore, Keyes & Sanjeevan, 2011).
    - Paper on program logic and service options for the Enhanced Maternal and Child Health Service (KPMG, 2011).

- Reviews of the home visiting literature completed for the right@home sustained home visiting project (McDonald, Moore & Goldfeld, 2012; Moore, McDonald, Sanjeevan & Price, 2012; Moore, McDonald & Sanjeevan, 2013).
- Review of evidence for effectiveness and efficiency of models for screening and surveillance in early childhood health (McLean, Goldfeld, Molloy, Wake & Oberklaid, 2014).
- Review of evidence regarding the importance of universal surveillance systems for children's health and development (McDonald, Goldfeld & Moore, 2012).
- Literature review to support the development of a new ante and post-natal support service (Moore & Sanjeevan, 2011).
- CCCH Policy Briefs on engaging marginalised and vulnerable families (2010) and best practice guidelines for parental involvement in monitoring and assessing young children (2008).
- Working paper on rethinking universal and targeted services (Moore, 2008).

These were supplemented by a number of key recent publications, including Amato et al. (2015), Axford et al. (2015a, 2015b), Axford & Barlow (2013), Marmot (2015), Prescott (2015), Putnam (2015), and the Social Research Unit at Dartington (2013).

2. ***An expert internal workshop*** to "road test" a conceptual framework, taking into account: the need to respond flexibly to emerging needs over time and throughout the 0-5 age group; the balance of evidence-based strategies; the potential workforces available for implementation; and the training or resourcing required. The expert group consisted of:

- A/Prof Harriet Hiscock, Director, Health Services Research Unit, Royal Children's Hospital
- A/Prof Stephanie Brown, Group Leader, Health Mothers Healthy Families, Murdoch Childrens Research Institute
- Ms Sue West, Senior Manager, Policy and Service Development, Murdoch Childrens Research Institute
- Ms Rebecca Fry, Manager, Service System Innovation, Murdoch Childrens Research Institute
- Ms Vikki Leone, Manager, Translation and Knowledge Exchange, Murdoch Childrens Research Institute
- Ms Dianne Halloran, Senior Project Officer, Policy Equity and Translation, Murdoch Childrens Research Institute.

3. ***Creation of a conceptual framework diagram*** and accompanying potential delivery framework (Figure 1).

Background

Importance of the early years for child health and development

There has been a steady accumulation of knowledge about the nature and significance of the early years for health and wellbeing across the life course (Braveman et al., 2008, 2011; Centre on the Developing Child, 2010; Moore, 2014; Shonkoff et al., 2009, 2012; Social Science Research Unit at Dartington, 2013).

The early years of life are considered highly significant because:

- what happens in the womb can have lifelong consequences
- children learn from birth, and their learning is continuous and cumulative
- gaps in development open up early and widen progressively
- young children learn through their relationships with primary caregivers and through the proximal physical and social environments that caregivers provide.

Children's health, development and wellbeing are vulnerable and can be compromised by a number of direct adverse experiences during the prenatal and postnatal periods (Hertzman, 2010; Moore, 2014). Examples of adverse experiences shown to be associated with later negative outcomes include sustained poverty; neglect or recurrent physical, emotional or sexual abuse; parental substance use or mental illness, and family violence.

The evidence indicates that many adult diseases should be viewed as developmental disorders that begin early in life, and that persistent health disparities associated with poverty, discrimination, or maltreatment could be reduced by the alleviation of toxic stress in childhood (Shonkoff et al., 2012). This accumulation of new knowledge about the impact of prenatal and early childhood experiences on health, wellbeing and development in later childhood and over the life course must change how we view the early years.

The strongest influence on children's development is the quality of the parenting they receive, and the nature of their home learning environments (Kalil, 2015; Moore & McDonald, 2013). These have effects on many areas of development, including self-esteem, academic achievement, cognitive development and behaviour. Optimising parent-child relationships and home learning environments is essential for improving the health and wellbeing of the whole population.

For good outcomes, children need:

- responsive caregiving
- opportunities to interact, explore and participate in a range of social and physical environments
- adequate nutrition
- adequate care
- protection from physical and psychosocial harms.

Social change and its impact on families

We now have considerable evidence showing that social factors play a critical part in determining health outcomes (Braveman et al, 2011; Hertzman, 2010; The Marmot Review, 2010; WHO Commission on Social Determinants of Health, 2008). Understanding these effects has been complicated by the social, economic, demographic and technological changes that have occurred over the past 50 years. These have been more dramatic than at any previous times in human history, and have created living conditions for which our bodies are poorly adapted, resulting in range of what are known as mismatch diseases such as obesity, diabetes and asthma (Gibson, 2009; Gluckman and Hanson, 2006; Lieberman, 2013). In addition, these changes have significantly altered the conditions under which families are raising young children (Amato et al., 2015; Putnam, 2015; Trask, 2010). The changes have also been reflected in changes in families themselves, which have become more diverse in their structure and backgrounds (Hayes et al., 2010; Walsh, 2012).

The social changes have also widened the gap between rich and poor in the developed world. Although many of the recent social and economic changes have been beneficial for most families, poorly-resourced families can find the heightened demands of contemporary living and parenting overwhelming. Gaps in family functioning are cumulative: the more advantaged families are initially, the better they are able to capitalise and build on the enhanced opportunities available, so that the gap between them and those unable to do so progressively widens. The result has been an increase in the numbers of families with complex needs, and more pockets of intergenerational disadvantage, underachievement, and poor health and developmental outcomes.

The evidence indicates that the wider these gaps, the worse the outcomes (Goldfeld & West, 2014; Marmot, 2015). The increasing evidence from developmental health research suggests that inequities emerging in early childhood show no evidence of either strengthening or attenuating as children get older (Nicholson et al., 2012) and are maintained into adulthood as higher rates of mortality and physical, social and cognitive morbidity across the social gradient (Goldfeld & West, 2014).

Families experiencing adversity

Families experiencing adversity are more likely to have inequality of outcome and are more vulnerable to risk factors. These factors fall into three groups (Ghate and Hazel, 2002, 2004; Jack and Gill, 2003; Landy and Menna, 2006; Slee, 2006; Woolfenden et al., 2015):

- *Factors within the parent or parents* such as low levels of education, mental illness, substance use, a history of abuse or neglect in their own childhood, and other past and present trauma.
- *Factors within the family* including poverty, insecure/inadequate housing, large family, teenage parent, family violence, lack of health literacy, and lack of English proficiency.
- *Factors within the wider community* such as neighbourhood problems/community violence, lack of public transport, difficulties in accessing child and family services.

The more risk factors and the fewer protective factors, the more likely it is that the family will become dysfunctional, the parents will have problems (health, mental health, employment), and their parenting of the children will be compromised. It is the cumulative effect of multiple environmental stressors and risks that make families more vulnerable (Moore et al., 2013). Parents' problems are likely to be multiple, overlapping, and cumulative: if parents have problems in one area they almost certainly have problems in other areas of their life, further compounding parenting difficulties. The greater the number of stress factors that were reported by parents, the less likely they were to be 'coping' with parenting.

It is clear that the ability of parents to care for their children can be undermined by a whole range of parental, familial and social factors (Ghate and Hazel, 2002, 2004; Jack and Gill, 2003; Landy and Menna, 2006; Slee, 2006). The evidence indicates that if these factors are not addressed, then efforts to help parents with the problems they experience as a result of these factors – such as their inadequate care of their children – are likely to be only partially effective or short-lived.

There are also child factors that are associated with a higher risk of poor developmental outcomes (Woolfenden et al, 2015). These include: genetic factors, including epigenetic phenomena; adverse *in utero* environments; low birthweight; male gender; prematurity; not breastfed; and significant acute and chronic illness.

We do not know how many families or what percentage of families can be considered vulnerable, and therefore would benefit from additional support and services. We have data on the numbers of children who fall into particular risk categories, such as poverty, but not on how many children and families are exposed to multiple risk factors, or whether the number of such families has increased (Moore et al., 2013). Not surprisingly, child and family risk factors often co-occur with some families experiencing significant adversity affecting the parent and the child. It is worth noting that only a small percentage of families experience adversity persistently. For many families these adversities emerge over time, often at crisis point: alongside these adversities are also protective and resilience factors that enable families to “cope” despite the adversity in their lives.

Inequitable outcomes and proportionate universalism

Child health and developmental inequities are differential outcomes that are unjust, unnecessary, and preventable, and exist in all western countries. By the time Australian children start school, clear inequities in their development and wellbeing are already evident: in the 2012 Australian Early Development Census (AEDC), 6.5 per cent of Australian school entrants living in the most advantaged areas were developmentally vulnerable on two or more domains of early childhood development (physical health and wellbeing, social competence, emotional maturity, language and cognitive skills, and communication skills and general knowledge), compared with 17.4 per cent of children who lived in the most disadvantaged areas (Brinkman et al., 2012; CCCH and Telethon Institute, 2009, 2013; Goldfeld et al., 2014; Oberklaid et al., 2012). Inequities emerging in early childhood track forward into adulthood, contributing to differential trajectories of mortality and physical, social, and cognitive impairments.

Progressive or proportionate universalism (Boivin & Hertzman, 2012; Human Early Learning Partnership, 2011; Marmot Review, 2010) is an approach based upon a strong universal service base that adds levels of support progressively for those with additional needs and is a service-based response to address inequities. There is a strong rationale for basing this system on a universal service base rather than a targeted service base (McLean et al., 2014; Moore, 2008; Oberklaid et al., 2012): the recognition that child vulnerability exists in every socio-economic strata of our society, and is not exclusive to the most disadvantaged. The evidence demonstrates that although most highly concentrated in the lowest socioeconomic strata, child vulnerability exists across all socioeconomic levels of society. Concentrating services on the most disadvantaged groups – or on highly disadvantaged areas – will miss many children who need support and will provide services to some families who do not need it (Moore & McDonald, 2013).

A system of progressive or proportionate universalism would ensure that all families receive a core set of services (e.g. prenatal and antenatal services, maternal and child health services, paid parental

leave, parenting information and support, affordable child care, and preschool programs) with additional services being provided to those with greater needs. Services that are provided in response to needs identified by families are more effective than those based on professional judgments of family needs. Services also need to be tailored to particular populations and contexts.

Identification of families experiencing adversity

There are two main approaches to identifying those who are at need of additional help: a risk-based approach and a response-based or needs-based approach (Moore & Sanjeevan, 2011):

- A *risk-based approach* identifies those needing extra help on the basis of indicators of risk factors that are known to be associated with a high likelihood of having problems in parenting (e.g. single parent, teenage parent, family violence). There are a number of problems with this approach:
    - Not all families who fall into particular risk categories will experience problems, so the targeted services can be delivered to families who do not need them – a poor use of scarce resources.
    - It can be difficult to 'sell' targeted programs to families who have not asked for them and may view them as stigmatising.
    - The risk-based approach defines "vulnerable" families in terms of external features (risk categories) and therefore tends to view vulnerability as a property of particular people or groups. This can lead to services viewing vulnerable families negatively, regarding parents as irresponsible or families as dysfunctional if they fail to keep appointments.
- A *response-based or needs-based approach* identifies children and families needing additional support on the basis of their expressed needs or concerns. There are a number of advantages to this approach:
    - It is more efficient in that it delivers services to those who have actual rather than possible needs.
    - Because the services are being delivered in response to concerns that families have identified, there is a greater chance that the parents will accept and make use of the services.

If the service system is to become more responsive to the needs of families experiencing adversity, front-line workers need tools to help them have discussions with parents about concerns that they might have about their children's health and development, or factors affecting family functioning (Moore & McDonald, 2013). Tools for learning about parental concerns about child health and development – such as the Parent Evaluation of Developmental Status (PEDS) (Glascoe, 1997, 1998) – have been developed for local use and are widely, but not universally, used. Two Australian tools for learning about parental concerns about family functioning are in the process of development: the Common Approach to Assessment, Referral and Support (CAARS) developed by Australian Research Alliance for Children and Youth (ARACY, 2013), and the Parent Engagement Resource (PER) currently being trialled by the Centre for Community Child Health (Moore et al., 2012).

Despite the advantages of the needs-based approach for working with families, there are some major challenges to be faced in implementation. The main challenge is in ensuring the service system as a whole is able to engage families in such a way that their concerns and needs can be promptly identified and responded to. Much work is needed before we can be confident that these processes are in place.

Although it would not be wise to abandon a risk-based approach altogether – the presence of risk factors serves as a valuable indicator of who might be vulnerable – neither should we be relying totally upon risk categories as a way of identifying families in need of additional support. We need to develop ways of combining these two approaches in identifying families needing additional support.

Effectively engaging and supporting families experiencing adversity

There is general support for the notion that process aspects of service delivery matter for outcomes – i.e. that how services are provided is as important as what is provided (Moore et al., 2013). A number of key elements of effective service delivery processes have been repeatedly identified in the research literature. Effective services:

- are relationship-based
- involve partnerships between professionals and parents
- target goals that parents see as important
- provide parents with choices regarding strategies
- build parental competencies
- are non-stigmatising
- demonstrate cultural awareness and sensitivity
- maintain continuity of care.

These process variables appear to be of particular importance for the most vulnerable families, who appear to be less likely to make use of professional services that do not possess these qualities.

Other key factors identified include: the importance of providing practical support to address families' most pressing needs; and the need to coordinate services to address the barriers that parents face in accessing services as well as the background factors that have led to the families having difficulties in caring for their children.

Effective support of families will require consideration of both foreground and background factors and services (Moore & Sanjeevan, 2011):

- *Foreground factors* in people's lives are the problems they present with – e.g. with parenting and care of children. These are the problems that are most salient to professionals. Foreground services are those that address these problems and seek to remedy them directly. These include universal services (MCH etc.), secondary / targeted services (EMCH), and tertiary / treatment services.

- *Background factors* are the underlying causes of the foreground / presenting problems and may either be internal (personal factors in the parent, including parental health) or external (circumstances in which families are living) or a combination of both. Background services are those that seek to address specific background factors – e.g. housing, family violence, drug and alcohol use.

The evidence indicates that, if these background factors are not addressed, then the impact of direct foreground services is weakened – either they do not work at all (because the parent is too preoccupied with other issues) or they are effective in the short term only. Vulnerable families, by definition, are those with background factors that are likely to compromise their parenting, and as a result, direct efforts to help them with their parenting may fail to have a lasting positive impact. For these services to

be effective, the background factors that are resulting in the parenting problems (and that will continue to undermine any direct efforts to improve parenting) need to be addressed directly.

Prevention, early identification and early intervention

Prevention

There is widespread consensus that the best way to promote children's positive health and wellbeing is to prevent them from experiencing the adverse social and physical experiences and environments known to compromise health and development. Prevention involves providing children and families with the conditions and assistance they need before problems escalate into crises (Braveman et al., 2011; Cohen et al., 2010; Cowen, 2000; Manchanda, 2013; Shonkoff & Richter, 2009; Stagner & Lansing, 2009).

The critical role that social factors play in determining health outcomes is now well understood (Braveman et al, 2011; The Marmot Review, 2010), and it has become increasingly apparent that too little attention has been given to the 'upstream' social determinants of health, such as economic resources, education, and racial discrimination (Braveman et al., 2011). The current system of intervention and support services in developed countries predominantly responds to presenting problems rather than seeking to address the underlying causes that lead to families having problems in the first place (O'Connell et al., 2009; Maziak et al., 2008). Direct interventions to address 'wicked' problems such as child abuse and family violence will always struggle to achieve sustainable results while the conditions that led to the problem remain unchanged (Braveman et al., 2011; Moore & McDonald, 2013; Stagner & Lansing, 2009).

An alternative to direct intervention is an approach that seeks to address the underlying causes of problems known as 'pre-prevention' or 'true prevention' (O'Connell et al., 2009; Maziak et al., 2008; Stagner & Lansing, 2009). This approach differs both from direct interventions (which address the presenting problems or symptoms) and promotion approaches (which seek to actively promote positive health or behavioural practices). The pre-prevention approach seeks to transcend the traditional 'silos' within which services traditionally operate by establishing systems of collaboration that address long-term underlying problems and thereby prevent future ones (Stagner & Lansing, 2009).

Early identification

The best prevention efforts will never eliminate all instances of family or child problems – hence the importance of early identification in order to provide support as early as possible in the sequence (McDonald et al., 2012).

Methods of identification:

- *Screening* involves the use of specific tests or examinations to identify those people in a population who are likely to have a particular condition or disorder (Oberklaid at al., 2002). For child developmental problems, screening is a particular challenge and is best embedded in a system of surveillance.
- *Surveillance* is the ongoing and systematic collection of information relating to particular disorders or conditions over time by an integrated service system (Oberklaid et al, 2002).

Once a risk or problem has been identified, systems need to be in place to provide appropriate referral, support and intervention.

Early intervention

Early intervention can be thought of in two ways: intervening early in the sequence, and intervening as soon as a problem manifests itself. Intervening early in the sequence would include interventions during pregnancy or early infancy. Intervening once a problem manifests itself involves addressing the presenting problems directly. Effective forms of intervention include broad strategies (e.g. home visiting, parenting programs) and more specific strategies that address particular problems (e.g. sleep programs).

The relationship between promotion, prevention and early intervention can be seen in the typology of prevention developed by O'Connell et al. (2009) and Axford & Barlow (2013). This typology identifies six forms of prevention in three groups (primary, secondary and tertiary prevention):

- Primary prevention
  - *Promotion* activities and interventions are delivered to everyone within a particular population.
  - *Universal* activities are aimed at preventing the occurrence of problems in the first instance by offering services and interventions routinely to all members of a population.
  - *Selective* methods are delivered to families where there are risk factors that could impact on a child's outcomes.
- Secondary prevention
  - *Indicated* interventions are those delivered to families where there are early signs of problems that, if not addressed, may pose significant difficulties in terms of both the development of the foetus and infant, and the family's capacity to care for their child in early life.
- Tertiary prevention
  - *Treatment* interventions are provided to families experiencing diagnosed problems with the aim of reducing the negative impact of the particular problem being targeted.
  - *Maintenance* interventions are delivered to families with the aim of enabling them to sustain the changes resulting from treatment programmes.

Evidence-based strategies for addressing common issues of early childhood

The most important point to note when considering evidence-based interventions is that many interventions delivered directly to children and families (e.g. individual programs) struggle to achieve sustainable improvements for vulnerable families. This is because the factors that cause such families to present with problems in caring for and parenting their children are complex and multi-dimensional. To make lasting improvements, intervention strategies need to be tailored to particular populations and contexts, and an ecological approach involving multi-level interventions are needed, addressing both the presenting problems and the background conditions that have caused and maintained the problems (Axford & Barlow, 2013; Moore & McDonald, 2014; Shonkoff et al., 2012). Addressing multiple levels of influence is not something that can be undertaken by any single organisation or department, but requires the combined efforts of service and community networks.

However, direct interventions addressing presenting problems do have an important role to play, and it is crucial that these be evidence-based. General summaries of evidence-based approaches have been provided by Axford & Barlow (2013), Axford et al. (2015a), and the Social Research Unit at Dartington (2013). Some problems lend themselves to more specific intervention strategies, such as sleep, speech difficulties, or behaviour problems (Moore et al., 2013).

Conclusions

For the purposes of developing a conceptual framework for the MCH service, the key findings from this brief evidence review are as follows:

- The importance of providing a core universal service for all families – as is intended through the Key Ages and Stages model of MCH in Victoria.
- Additional support for some families should be provided on the basis of a proportionate or progressive universalism model – the universal service needs the capacity to provide an enhanced level of support to families experiencing particular challenges, as and when these challenges are identified.
- It is vital that professionals build relationships with parents upon mutual trust, respect and partnership – such relationships are the medium that enables the successful transmission of information and evidence-based strategies.
- Professionals need to respond to issues and concerns identified by parents – services that do not respond to the issues parents identify will struggle to build the kind of relationships necessary for effecting positive change.
- Professionals need to be able to draw upon a range of evidence-based strategies to address the particular concerns that parents identify – if parents are offered choices of strategies, they will be more likely to choose one that is acceptable and implementable in their particular circumstances.
- It is important to address the background precipitating causes as well as the immediate presenting problems – while the MCH service can help with many of the immediate problems, it will need to coordinate and collaborate with other services to address the background factors that have led to the problem.

Conceptual Framework

The proposed conceptual framework for the entire Victorian MCH service is based upon these key findings. As shown in Figure 1, the framework includes three different *levels of care and intervention* (including EMCH) with three *core elements* of the service. It is proposed that the age group eligible for the universal and enhanced levels of service be extended to 5 years to coincide with the full potential reach of the universal Key Ages and Stages. Given the evidence regarding the importance of the antenatal period, ways of extending the service to cover this period as well should be explored.

Tiered levels of care and intervention

The three levels of care and intervention are designed to deliver maternal and child health services based on a proportionate universalism approach.

1. *Universal level*

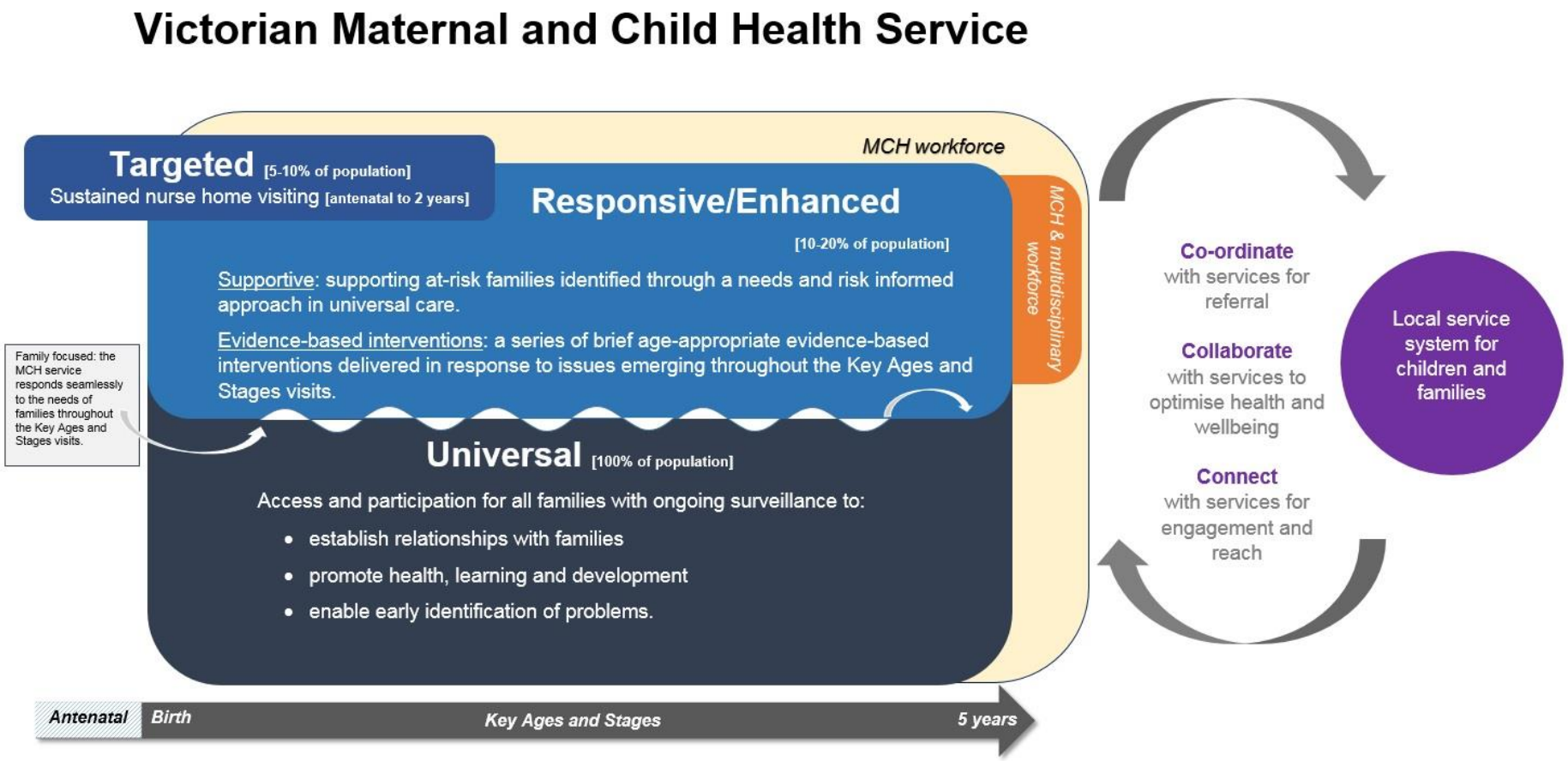
   Delivered by MCH nurses, the universal MCH service aims to reach 100 per cent of the population. It involves 10 Key Ages and Stages (KAS) visits between birth and three and a half years, with the primary aim of promoting health, learning and development. It is focused on parent engagement through which parental concerns are elicited to enable the early identification of issues and provision of appropriate additional support – including the involvement of the second platform where required. (For some families, such as refugees or those with English as a second language, additional visits may be needed to cover the key ages and stages adequately. The universal service should have sufficient flexibility to provide this form of additional support without involving the enhanced level of service.)

2. *Enhanced/responsive level*

   The second tier of service is the Enhanced or Responsive MCH service which aims to respond to the concerns identified by parents during a (KAS) visit that require more support and exploration than is possible during the regular visits. Other services may also identify such issues and recommend enhanced support, but the decisions as to whether enhanced help is provided and what form it should take rest with the family in consultation with the MCH nurse.

   Based on prevalence of risk factors across the population and prevalence of common health, developmental and behavioural problems amenable to brief interventions, it is estimated that this additional level of support will be needed by 15-20 per cent of the population. For example, from the right@home trial we know that 21.5 per cent of women screened in general antenatal clinics had ≥3 risk factors which included a range of psychosocial factors that would likely benefit from additional support (Goldfeld S, personal communication). In addition the prevalence of common child related problems such as sleep and behavioural problems range in prevalence from 15-30 per cent (see Table 1). The timing, intensity and duration will differ between families depending on the need that is being met – this service level is intended to be fluid and flexible to meet identified need.

Figure 1



Entry to this level of service is via either of the other two levels of service, in most cases via the universal MCH service: when a family's additional needs are identified in the course of regular KAS visits, they become eligible for the enhanced level of service. As noted below, some families may also transition to the enhanced service from the third level of service, the sustained home visiting service.

The transition from the universal level of service to the enhanced level should be invisible from the parent's perspective – the additional help that is being provided should be perceived as being part of the overall MCH service. Other services should also see the universal and enhanced service levels as being part of a single MCH service with an enhanced capacity to address additional needs.

There are two components to this "enhanced" tier:

a. *Supportive component*: families may identify additional support needs during the regular universal platform visits. These can involve psychosocial issues known to compromise parenting or family function, such as family violence, unemployment, or housing insecurity. Identifying these issues is a sensitive process and depends upon the development of a trusting relationship between a parent and MCH nurse. Identification of psychosocial concerns may also be facilitated by the use of a family-centred set of questions/tools (to be determined).

   The workforce involved in providing this form of support may be the MCH nurse (especially follow up from universal service), an allied worker within the enhanced MCH, or an external service.

   Families may be supported by the MCH nurse for limited hours (TBC). For example issues of family violence may emerge over the first four years of life with estimates at around 20-25 per cent. If the service is building relationships with families, it is estimated that additional support of 2-3 hours would be necessary per year of child age as a brief intervention (Brown S. – personal communication). Families may then need to be referred to another service, but would continue to receive universal MCH level of support.

b. *Brief evidence-based intervention*: Delivery of brief interventions (1-4 hours) in response to specific issues or concerns raised by parents.

   When parents identify an issue requiring additional support that is beyond the scope of the universal service, one of the options is to provide a brief evidence-based intervention.

   The workforce involved in this form of support may be the MCH nurse (if trained in the use of the strategy chosen), another appropriately trained MCH nurse, an allied worker within the enhanced MCH, or a practitioner from another discipline or service.

   After receiving the brief intervention, parents may be referred to another relevant service (if the issue is unresolved) while continuing to receive their usual universal service.

   Table 1 outlines potential examples of issues where such brief evidence-based interventions may be appropriate, together with the estimated prevalence and intensity of intervention. These are estimates only and further work is required to populate such a

table with a level of rigour. However, these examples provide some sense of the both the prevalence of problems, and the types of responses and hours required to address need.

Table 1: Examples of evidence-based interventions

Issue/intervention	Age	Prevalence	Hours
Sleep	8 months	30%	45 minutes over two consultations– initial face to face, some phone follow-up, some face-to-face follow-up
Behaviour problems / parenting	3 years	15%	60-90 minutes over two consultations or a group program e.g. 3 x 2 hour sessions.

Some of the intervention modules that have been developed for the right@home program may be able to be deployed within the enhanced service for MCH nurses trained in their use. Which modules would be suitable and what form the training would take are matters requiring further exploration.

Given the needs of the families requiring an enhanced level of support, it is likely that many of them will need more than one form of support or brief intervention over time. It could be estimated that some families may require additional support and/or intervention each year which could add up to 20-25 hours over five years, however many families will only need a fraction of these hours. Until the new system is in place and the interventions are known these can only be estimates.

3. *Targeted platform: sustained nurse home visiting*

The third tier of service is the sustained home visiting service which is aimed at the highest risk families, identified in the antenatal period by the presence of multiple risk factors. This is the most intensive form of support and incorporates all the elements of other two levels. This service differs from the other two tiers in that it begins before the child is born, and includes approximately 25 visits over the first two years of life. Families who exit this tier early will transition to the universal service with the use of the enhanced tier as needed, but would not be able to re-enter the targeted tier after exit. At the end of two years, all families will transition to the universal service with enhanced support as needed.

It is estimated that this additional level of support will be needed by 5-10 per cent of the population. For example, in the right@home screening survey 13 per cent of women had three risk factors in the most disadvantaged areas while in the most advantaged areas there was only 7 per cent of women (Goldfeld, S. – personal communication). The level of service reach will necessarily reflect the population need and the resourcing available.

Core Elements of the MCH Service

In addition to the three tiers of care, the proposed framework includes three core elements that are fundamental to the service being able to meet the needs and promote the health and development of the local child and family population. Implementing these elements will necessarily demand more time of MCH nurses. If there is insufficient flexibility in the universal service to incorporate these core elements, there may be cost implications for the service as a whole.

The three core elements are:

- *Coordination:* building relationships with other local services.

  Through any of the MCH tiers there may be the need to refer to other local services. The most vulnerable families face multiple challenges, not all of which can be addressed through the MCH service, however it is configured. Other services will be needed to help families meet these challenges. When problems that require other services are identified, it is important that these services are able to respond promptly and effectively. MCH nurses need to know where these services are and build relationships with them in order to be able to refer families with confidence.

  This core element of the MCH service will require facilitation of the appropriate mapping of local service providers in each area. The list of types of services required to support the MCH service should be developed centrally, then enabling the identification of the appropriate local service providers. However, identification alone will not be sufficient to deliver the level of co-ordination required for an effective service; MCH services may require support to develop the relationships that will facilitate the best outcome for the families.

- *Collaboration:* collaborating with other practitioners.

  Besides referring families to other services, MCH nurses may also need to collaborate with professionals from these services in addressing problems that require a multidisciplinary or population-wide approach.

  While some of the elements of the EMCH service will be able to be delivered discretely, some will have better outcomes for families if collaboration with other health care providers or services is achieved – for example, working with GPs to achieve cessation of maternal smoking. This is more likely to be successful if participants, roles and responsibilities are clearly identified. For some of the elements of the EMCH service, it will be possible to determine these in advance, and doing so prior to implementation will facilitate collaboration and therefore be more likely to impact positively on the health and development of children.

- *Connection:* reaching and engaging all families.

  Building connections with families has two elements: first, finding and reaching them, and then engaging them and facilitating their participation in services. This is especially so for families experiencing adversity who are often not connected to services.

  With the exception of more vulnerable populations such as refugee and Aboriginal families, the universal MCH platform has excellent reach and participation rates in the neonatal period, with a significant drop-off to around two thirds of the population by the final KAS visit at three-and-a-half years of age. While much is understood about the barriers to accessing services for the

vulnerable and at-risk population, it is not clear whether the non-participants are well understood as a population – for example, what proportion of those not attending are hindered from doing so by barriers to access, and what proportion are choosing not to attend due a lack of perceived benefit? Exploration of the reasons for non-participation could improve the reach and participation across all platforms of the service.

For those families where barriers are already well understood, new and creative strategies will be required to reach and engage the families with MCH. This may involve MCH nurses attending local playgroups or child and family centres to begin the process of building relationships with parents who are not currently engaged with services.

Recommendations for development of the EMCH service

This paper provides a proposed high level framework for a new delivery model of maternal and child health services in Victoria. In developing the framework and collating the advice, a number of areas have been identified that would require future work, should this model be pursued.

Interface between the universal and enhanced levels of service

Prior to implementation of this proposed service framework for EMCH, further work is needed to determine how the universal and the enhanced delivery platforms will interface. A particular issue to be addressed is how family needs for additional support are identified, with consideration being given to needs- or response-based approaches instead of, or in addition to, the usual risk-based approaches. Increased flexibility and fluidity between these two platforms will require careful workforce planning and funding as well as further exploration of the tools and structure of each visit. This will ensure that there is an evidence-based and best-practice approach to identifying who might benefit from either the supportive and/or intervention components of the enhanced service.

Workforce

To date, the bulk of the MCH service has been delivered by MCH nurses. These nurses have qualifications as a registered nurse, a registered midwife and an additional qualification in child health. The EMCH service has also been delivered by MCH nurses, but usually a nurse will either work in the universal service or the enhanced program. The proposed framework will need close consideration of the best workforce mix for delivery of the entire service. It may be that the increased support element of the EMCH would best be delivered by a nurse that already has a relationship with a child and family from their contact within the universal service: some nurses may work across both platforms. In addition, there may be elements of the service that offer opportunities for a multidisciplinary workforce (including bicultural workers, Aboriginal health workers, early childhood educators) – particularly for the delivery of brief interventions, either to individual families or in group settings. Further analysis of the size and type of workforce required to deliver the entire service is therefore required prior to implementation.

Workforce Consultation

It is essential that the current workforce is engaged and consulted should the proposed framework be implemented. As the key stakeholders, they hold substantial knowledge about the elements of the current system, its challenges and successes. Early engagement and participation in the development of a detailed new service model is essential to harness their understanding, and to facilitate the significant change management that would be required for implementation.

In addition, to enhance participation in the MCH service, new approaches will be required, tailored to the specific needs of local populations. Examples of creative approaches to taking a service to the participants (rather than expecting participants to attend the service) are already occurring in some jurisdictions, including training early childhood educators to conduct developmental surveillance. A review of such approaches, along with what has and hasn't been successful, would support the development of the three platforms of MCH in Victoria.

Evidence-based interventions

The scope of this paper did not permit a comprehensive search for evidence-based interventions that could be delivered through the MCH service. A formal review of the evidence would enable a complete range of possible interventions to be considered. These would include interventions applicable at both the universal and enhanced service levels. Decisions about which interventions should be delivered through the EMCH platform will require a proper understanding and comparative analysis of:

- the prevalence of the problem being addressed
- the range and seriousness of the outcomes, if the problem is not addressed, and possible outcomes if the intervention is delivered
- the workforce and other resources required for delivery of the intervention
- the training requirements to enable delivery of the intervention
- a cost-benefit analysis of the intervention.

Further understanding of the available effective interventions would inform decisions about workforce and training requirements, and would be essential prior to determining the allocation of hours of service.

Group-based interventions and activities

There is good evidence to support a number of group-based activities that could complement all elements of the proposed MCH system. Some evidence-based interventions are designed to be delivered effectively in a group setting, which often improves their cost-effectiveness. Other group-based activities, such as first-time parent groups, which aim to connect local families with one another, are already a core part of the universal MCH service. The exact nature, structure, timing and range of group-based interventions would require further research, but their inclusion would both enhance the potential benefit of the MCH service and provide an efficient and effective service platform. Groups also have the potential to be delivered by an alternate workforce, while remaining very much linked to MCH. There may also be valuable lessons to be learned from other jurisdictions (e.g. Western Australia) that are exploring group strategies.

Training

The adoption of the proposed framework has several training implications. The first concerns the skills needed to build relationships with parents. The proposed framework is crucially dependent upon on MCH nurses developing relationships with families that are based on trust, mutual respect and partnership. For the most vulnerable families, such relationships are critical for ensuring that they engage with, and make good use of, the support that the MCH service provides. The basic skills involved in relationship-building can be learned through programs such as the Family Partnership Training model (Davis & Day, 2012).

Another feature of the framework that has training implications concerns the need for MCH nurses to collaborate with other nurses (e.g. in case reviews) and with other professionals in ad hoc multidisciplinary teams. Again, there are specific skills and practices required for effective collaboration and these can be taught (e.g. Gasper, 2010).

Training may also be needed in specific intervention strategies, at least for those who are likely to deliver that particular intervention. As new evidence emerges regarding effective strategies for addressing common issues facing parents, MCH nurses will need to be briefed and trained in the implementation of these strategies.

Clinical or professional supervision

With an increase in the skill set required to deliver the components of the EMCH service, the place of clinical supervision and/or debriefing should be further explored. Clinical supervision involves two or more professionals formally meeting together, to reflect upon and review their clinical practice. It enables the promotion of standards, facilitates clinical audits, supports the wellbeing of the clinician being supervised, and develops knowledge and clinical skills. While such a practice is common in other nursing and clinical domains, it is not currently a regular part of the universal or enhanced MCH service. It is currently a feature of the right@home trial, and feedback from those participants as well as stakeholder involvement would be essential to develop a model that best meets the needs of MCH nurses in their context.

Data

When a service has near-universal participation, there are enormous opportunities for data collection, linkage and analysis. It is essential that data is accessible across all three platforms and across geographical areas, to support families as they move through different parts of the service and/or move place of residence. Data collected should include process indicators, to enable the analysis of service provision, and clinical data, to enable analysis of risk factors, clinical outcomes and the efficacy of the MCH service. Linkage to other data sets (e.g. from MCH through to the Primary School Nursing Program, AEDC, and NAPLAN) would enable rich population studies of vulnerability and health, wellbeing and educational trajectories.

Change management

The proposed framework has the potential to require significant change to current MCH practices, within the universal service as well as the enhanced level. Implementation of this framework should consider the appropriate processes, practices, stakeholder engagement and consultation to assist with the introduction of these changes.

In addition, it will be important to have cross-department discussions to ensure the other services MCH will engage with are also authorised to act differently. Change management will need to occur with workers in other sectors to make sure they understand the new roles of nurses and how they relate to them.

Evaluation and continuous quality improvement

Limitations to evidence and the challenges of designing and implementing changes to a service of the magnitude of the Victorian MCH service mean that it is guaranteed that there will be flaws upon implementation, regardless of the effort put in to dealing with the above issues. To ameliorate these flaws, evaluation of all tiers of the service, together with continuous quality improvement, should be incorporated from the beginning. Such evaluation should address the fidelity and quality of the service, across geographic areas and between practitioners, together with reach and participation.

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