Conception to Community (C2C) Network

A vital and productive society with a prosperous and sustainable future is built on a foundation of healthy child development. When we invest wisely in children and families, the next generation will pay that back through a lifetime of productivity and responsible citizenship. When we fail to provide children with what they need to build a strong foundation for healthy and productive lives, we put our future prosperity and security at risk.

Conception to Community (C2C) is a network of organisations and individuals, who have come together to support and promote good mental health for young children aged 0 – 5 years and their families. The idea for the network arose from a forum in 2012 funded by the Tasmanian Early Years Foundation which was attended by over 80 professionals working with children and families. The title of the project recognises the importance of supporting children and their parents/carers in the first years of life to ensure that healthier individuals, developing within happy families can create strong communities.

C2C has brought public, private and CSO service providers together to link and share resources and access to education, training and support; to develop a united voice to advocate for improved service provision and to educate service providers to see “mental health as part of everyone’s business” with the aim of developing an integrated early childhood mental health sector meeting the needs of, and optimising the mental health and well-being of children and families from conception to 5 years of age.

The comments and recommendations provided here focus on clinical service delivery. However, we wish to emphasise that effectively meeting the needs of, and optimising the mental health and well-being of children and families from conception to 5 years of age requires a cross sectorial whole of government approach.

The importance of the early years of life

The period in utero and the first two years of a child’s life is a ‘critical period’ for the child’s cognitive, emotional, social and behavioural development. During this period, the brain develops at a rapid rate- at birth, the brain is only 24% of adult size, but by 3y.o. it is 90% adult size.

The architecture of the brain depends on the mutual influences of genetics, environment, and experience. Genetics supplies a basic plan for brain development. The environment in which the brain begins to develop has a profound influence on its initial architecture. A healthy environment beginning in the prenatal period allows the full potential of the genetic plan for the brain to be
expressed. Conversely, an environment lacking in critical nutrients, or containing toxins that result
from unhealthy behaviours such as maternal alcohol or drug use during pregnancy, or the impact of
maternal mental illness during the antenatal period, can cause neurons to acquire abnormal
properties and aberrant connections with other brain cells. In addition, an adverse pre-natal
environment, for example resulting from maternal stress, anxiety or depression, can actually alter
the genetic plan for the brain through epigenetic changes. These effects can cause neural circuits to
change in ways that prevent them from functioning well, or at all, even in a subsequent healthy
environment. **Experience** refers to the interaction of a child with his or her environment. In humans,
such experience begins before birth, as the foetus senses and responds to the environment of the
womb. After birth, experience plays an increasingly important role in shaping the architecture of
developing neural circuits so that they function optimally for each individual.

Whilst the development of neurones occurs in the prenatal period, it is during infancy and
toddlerhood that synapses develop. The development of synaptic connections is dependent on
experience- all functional capacities in the brain are dependant to some degree upon **appropriate
experience at crucial (sensitive) periods** of development. Healthy and stimulating experience results
in brain architecture that operates at its full genetic potential, and persistent adversity leads to weak
brain architecture with impaired capabilities. The infant may be exposed to a range of stressors
which can adversely impact their development; these include maternal and paternal mental health
problems, family violence, social and economic adversity.

Impoverished early experience can have severe and long-lasting detrimental effects on later brain
capabilities. The effects of critical (sensitive) periods for brain development are two-fold. On the one
hand, a sensitive period enables a neural circuit to optimize its architecture for the needs and
environment of the individual. On the other hand, this period of extreme receptivity also makes the
circuit vulnerable to the damaging effects of adversity.

Adverse early experience can have far reaching detrimental effects on the development of brain
architecture. Stressful experiences during sensitive periods (e.g. abuse, trauma, neglect) alter the
function and architecture of specific neural circuits, as these circuits adapt their functional
properties to the adversity that has been experienced. Core brain regulatory functions for sleep,
appetite, emotion, social interaction and behavioural control are established in infancy. When the
adverse conditions last through the end of a circuit’s sensitive period, the changes in the circuit’s
architecture become stable and tend to persist in the adult brain leading to problems with emotional
dysregulation, depression and personality disorder, poor self-esteem, unstable and untrusting
relationships with others, sleep and eating disorders, impaired cognitive development and problems
in impulse control including self-harm and aggression. Children who experience significant adversity
eyarly in life without consistent support from caring adults are more likely to drop out of school
earlier, earn less, depend more on public assistance, adopt a range of unhealthy behaviours, and
live shorter less healthy lives. Although the brain’s residual capacity for plasticity can mitigate the
adverse effects of the altered circuit architecture, the affected neural circuits do not process
information as well as they could have if the child had been exposed to an appropriate experience
during the sensitive period. These changes in neural functioning can have long term detrimental
effects on a child’s emotional, social and behavioural development.
It follows from the above, that the environment in which a child is reared is crucial for healthy infant and child development. And, the essential component of such an environment is a parent with reflective capacity which will enable the development of a secure attachment relationship between the parent and the infant/child. Reflective capacity involves understanding behaviour in terms of mental states; ability to understand thoughts feelings and intentions of self and other. Parent reflective capacity is known to mediate attachment security; and recognised as key strength or protective factor in parent to minimise risk of abuse or neglect. Young children need consistent, nurturing, and protective interactions with adults that enhance their learning and behavioural self-regulation. These interactions also help them develop adaptive capacities that promote well-regulated stress response systems that contribute to the development of resilience.

The focus of clinical services includes prevention, early intervention and treatment of disorders which may adversely influence the environment both in the antenatal and postnatal periods. Prevention/early intervention is the most clinically effective as well as the most cost effective approach. This clinical work is undertaken by maternity and perinatal and infant mental health services.

Brain plasticity continues throughout life. Neural circuits, continue to adapt their architecture in response to experience throughout the adult years. Even circuits that pass through sensitive periods maintain a degree of flexibility that allows them to adapt their architecture, at least partially, to experience in adulthood. This residual capacity for plasticity in mature neural circuits thus allows for some recovery of brain capabilities, even in adults. Thus, whilst later interventions are not futile, they are more expensive in terms of societal and individual effort, and generally less effective and durable.

From: Harvard Centre for the Developing Child
As an example of the cost-effectiveness of early intervention, The UK study *The costs of perinatal mental health problems* details the short and longer term economic impact of perinatal mental illness. This study demonstrated that perinatal depression, anxiety and psychosis carry a long-term cost to society of about £8.1 billion for each one-year cohort of births in the UK. Over 70% of these costs relate to the child and reflect the costs of pre-term birth, infant death as well as the longer term costs flowing from cognitive, emotional and behavioural problems.

**Clinical services for the early years.**

Perinatal and infant mental health clinical services focus on interventions in preparation for and during pregnancy, and in the first years of a child’s life. Early intervention, i.e. identification and treatment of women with mental health problems pre-conception, in the antenatal period as well as post-natally, together with intervention with ‘high-risk’ mother-infant (and father-infant) dyads will reduce both short and long-term morbidity and mortality and short and long term costs to the health system and to wider society.

(a) Current Perinatal and Infant Mental Health services in Tasmania

Three perinatal co-ordinator positions were established in Tasmania using funding from the National Perinatal Depression Initiative. This is time-limited funding. These positions were designed to support the implementation of routine and universal screening of antenatal women using the EPDS and a range of activities associated with this.

Over the past 2 years the position located in the South has been expanded and incorporated into a newly established Perinatal and Infant Mental Health (PIMH) Team within the Child and Adolescent Mental Health Service-THO South (CAMHS-South). The positions in the North and North-West have remained ‘stand-alone’. At this time the ongoing funding for these three positions is not secure.

The PIMH Team (THO-South) provides a consultation-liaison service to the maternity and paediatric (neonatal) services at the Royal Hobart Hospital. Women identified as ‘at risk’ (elevated EPDS score, past or current history of mental illness, and/or a range of psychosocial stressors) by their midwife or obstetrician in the antenatal period are referred for assessment and treatment by the PIMH psychiatrist/registrar. Women are also referred for assessment whilst in the maternity ward or whilst their infant is in the nursery. Mother-infant assessment/therapy is provided by CAMHS clinicians. Short-term post-natal follow up is provided. The team has strong links with general practitioners, Relationships Australia (ATAPS funded clinical psychology providers) the adult mental health service, Child Health and Parenting Services and Child Protection and CSOs such as Good Beginnings.

The PIMH Team in the South has undertaken training for a range of health providers and developed and co-ordinates a postgraduate unit in Perinatal and Infant Mental Health offered by the University of Tasmania. The unit addresses the nature and effects of maternal mental illness in the perinatal period and infant mental health and early development. Students gain knowledge and skills in early detection of mental health disorders, and an understanding of care and support required by women and their families affected by mental illness in the perinatal period.
There are no dedicated public mother-baby inpatient beds in Tasmania. Limited access to in-patient care for women with severe mental health problems and her infant in the post-natal period is provided through a private hospital in Hobart.

Extended perinatal stay in maternity beds for mother with mild to moderate mental disorders can occur at the RHH, supported by the perinatal and infant mental health team. However, this is not consistent with current models of maternity care and adversely impacts maternity LOS and achievement of maternity KPIs.

Pregnant women who require inpatient care can also be admitted to acute adult inpatient units but these do not have any special facilities for their support. Importantly, baby cannot be admitted with mother to acute psychiatric inpatient units.

(b) Recommendations for perinatal and infant mental health clinical services

**RECOMMENDATION 1: A state wide PIMH service should be developed**

This should be a ‘hub and spoke’ model- with the ‘hub’ responsible for the provision of support and consultation to each of the ‘spokes’ which would include service development, clinical support and supervision, education and training.

The ‘hub’ would include a specialist perinatal psychiatrist, infant psychiatrist, clinical psychologist with perinatal and infant mental health expertise and perinatal and infant mental health co-ordinator.

Each ‘spoke’ would be based in a consultation-liaison clinical service (including perinatal co-ordinator, psychiatrist/registrar and infant mental health clinician-FTE varying according to number of births/year at site) involving women’s and children’s services at Royal Hobart Hospital, Launceston General Hospital and North-West Regional Hospital Burnie and Mersey Community Hospital Latrobe.
The state-wide PIMH service would develop strong links with primary care, child and youth services and adult mental health services to provide effective early intervention during pregnancy and early in a child’s life. A comprehensive range of antenatal and parent-infant interventions would be developed from universal preventative measures; to targeted early intervention with ‘at risk’ groups (eg teenage parents); to clinical interventions with high risk parents (eg mentally ill or substance-using) and infants (eg abused or neglected infants at risk of removal into out of home care) which will reduce both short and long-term morbidity and mortality and short and long term costs to the health system and to wider society.

**RECOMMENDATION 2**: maternity models of care should be reviewed to take into account the differing post-natal care needs of women with mental illness

Women with mental illness at times require longer post-natal stay than those without such problems. An extended stay enables monitoring of a woman’s mental state and if needed intervention to prevent worsening of pre-existing illness or to treat an emerging acute episode of illness. Of note, the first 72 hours postpartum is a time of high risk for relapse of major mental illness and for the onset of post partum psychosis.

In addition, women with mental illness often lack confidence and/or are highly anxious about mothering. As a result they are more likely to have difficulty understanding and responding to their baby’s communication with them, establishing breast feeding, and bonding with their baby.

An extended stay with adequate supports can prevent later difficulties for both mother and baby and reduce the likelihood of need for future inpatient re-admission.

**RECOMMENDATION 3**: Mother-baby unit inpatient beds be developed as part of the statewide PIMH service

Psychiatric mother–baby units (MBU) admit women with severe mental health problems or disorders. They require two different types of expertise: the first in treating women with psychiatric disorders; and the second in child care and development. Caregivers in these clinical settings face especially complex situations. MBU’s exist in most other states of Australia, with Victoria having MBU’s in both metropolitan and rural areas.

These units should also facilitate interaction between parents and infant and enable the father to participate in the child’s care and interact with him.

Whilst an inpatient mother-baby unit would ideally be developed in a central site it is likely to be unacceptable in most instances due to the isolation of mother and baby from their families and communities consequent upon a single state wide location. In-patient MBU capacity should be developed in a manner suitable to local needs (e.g. Victorian rural models).

Provision of the services described in these three recommendations will prevent morbidity and mortality and reduce prolonged or repeated inpatient admissions.
References


Centre for The Developing Child Harvard University http://developingchild.harvard.edu/