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**Project:** Vulnerability of infants admitted to a regional Mothers and Babies service

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**Introduction:**

Mental illness is most prevalent in New Zealand women around reproductive age.

One in six New Zealanders are diagnosed with depression, anxiety, or bipolar disorder and women are 1.6 times more likely to be diagnosed. One in five young people live with a parent who has mental illness.

Mental illness, particularly maternal, can impact upon foetal, infant, child and adolescent physical, social, emotional and mental health outcomes. The impact of maternal mental illness on the infant is the greatest during the first year of the infant's life as it is a period of vulnerability. Maternal mental illness has been associated with suboptimal pregnancy outcomes, delayed infant neurodevelopment, attachment and attention difficulties, increased behavioural problems, affective disorders and psychopathologies, sudden infant death and infanticide.

**Aim:**

To collect information about the factors in the antenatal, postnatal and infancy periods that may contribute to childhood vulnerability, poor physical and mental health outcomes in a population of infants admitted to a regional Mothers and Babies service.

**Method:**

This review was a retrospective case-note audit of 94 infants (2 days - 56 weeks) of 92 mothers, admitted August 2013 - November 2015, to the Princess Margaret Hospital Regional Mothers and Babies Mental Health Inpatient Unit, Christchurch, New Zealand (regional Mothers and Babies unit).

Factors that may make infants vulnerable to poor physical, social and mental health outcomes were identified and compared with local and national data.

**Results:**

Mother-baby dyads had a median admission length of 32 days, which meant that we were able to observe the mother-baby dyad for an extended period of time.

Mothers: 52.1% mothers with depression, 20.2% with bipolar disorder, 7.4% with a type of anxiety disorder and 20.2% with other mental illnesses were admitted to the regional Mothers and Babies unit.

Mothers had severe, complex and enduring mental illness; almost two thirds of mothers (62.8%) had prior involvement with mental health services before this pregnancy and half (51.1%) of the mothers had more than one psychiatric diagnosis.

Severe and enduring mental illness is associated with a higher risk for poorer outcomes in infants. Mothers had high rates of alcohol, drug and tobacco use and large numbers admitted to exposing their infants to these compounds in-utero. High numbers of infants were also exposed to psychotropic medicines in-utero.

Infants: The median age of infants on admission to the service was 14.2 weeks. High rates of infants never breastfed or stopping breastfeeding prematurely were seen in our cohort.

The median age of cessation in our population occurred at 4 weeks of age and is lower than the median age of 4 months established by the Growing up in New Zealand Now We Are Born study. Possible reasons why mentally unwell mothers ceased breastfeeding early could be due to preoccupation with mental illness, impaired bonding with the infant, decreased milk supply or high rates of trauma and sexual abuse.

Maternal mental illness may therefore be a risk factor for lower initiation and early cessation of breastfeeding. The mothers and babies had high rates of involvement with specialty services due to high rates of pregnancy complications, infant medical conditions, increased neonatal unit admissions, increased involvement with paediatricians and increased rates of caesarean and instrumental deliveries when compared with national data.

Social: There were significant social issues in this population of mothers and babies. The most deprived deciles (New Zealand Social Deprivation Index 2013 (NZDep13) deciles 8, 9, 10) were overrepresented, however correlated well to national data of mothers giving birth in 2014.

There were high rates of solo parenting, concerns about family violence, mothers on a government benefit and involvement with Child Youth and Family Services.

Mother-infant bonding: There were moderate to severe concern about the mother's interaction with her infant in nearly two thirds of cases, with almost one in five infants demonstrating emotional withdrawal. This data highlights the potential impact of maternal mental illness on the mother-infant relationship but should also be seen as an opportunity for early intervention and treatment.

Clustering of vulnerability factors Infants in the population admitted to the Mothers and Babies Unit were exposed to a varying number of vulnerability factors. The average number of vulnerability factors per infant was 4 and this was increased to 5 when for infants living in NZDep13 deciles 8, 9 or 10 and two infants had 10 identified vulnerability factors. The cumulative effect of these factors is unknown but there is currently no dedicated follow up for high-risk infants. The use of these vulnerability factors may allow for vulnerability screening in the future, which would lead to possible interventions of these at risk children and reduce the adverse health outcomes they experience.

**Conclusion:**

Our data suggests that the infants admitted to the Princess Margaret Hospital Regional Mothers and Babies Inpatient Unit are exposed to many factors in the antenatal, postnatal and infancy periods in the first year of life which may make them more vulnerable to poor social, physical and mental health outcomes.

Where comparisons were possible, values seemed to be higher than the general population. The Princess Margaret Regional Mothers and Babies Inpatient Unit is in a unique position to identify infants at risk and to coordinate appropriate intervention and support to optimise outcomes.