Senate Community Affairs Reference Committee

RANZCOG Submission to the Select Committee on Stillbirth Research and Education to inquire and report on the future of stillbirth research and education in Australia

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The Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG) welcomes the opportunity to provide this submission to the Senate's Select Committee on Stillbirth Research and Education. We understand this committee was established to inquire and report on the future of stillbirth research and education in Australia.

RANZCOG is the lead standards body in women's health in Australia and New Zealand, with responsibility for postgraduate education, accreditation, recertification and the continuing professional development of practitioners in women's health, including both specialist obstetricians and gynaecologists, and GP obstetricians. The College is committed to improving the health and wellbeing of all women and their babies. RANZCOG supports research into women's health and acts as an advocate for women's healthcare by forging productive relationships with individuals, the community and professional organisations, both locally and internationally.

1. Background

The purpose of this inquiry is to examine and report on the future of stillbirth research and education in Australia. The terms of reference for the enquiry are:

a) consistency and timeliness of data available to researchers across states, territories and federal jurisdictions;

b) coordination between Australian and international researchers;

c) partnerships with the corporate sector, including use of innovative new technology;

d) sustainability and propriety of current research funding into stillbirth, and future funding options, including government, philanthropic and corporate support;

e) research and education priorities and coordination, including the role that innovation and the private sector can play in stillbirth research and education;

f) communication of stillbirth research for Australian families, including culturally and linguistically appropriate advice for Indigenous and multicultural families, before and during a pregnancy;

g) quantifying the impact of stillbirths on the Australian economy; and

h) any related matters.

In Australia in 2015, almost 3000 perinatal deaths were recorded: of those losses, 2191 were stillbirths. Thus, 73% of all perinatal deaths are stillbirths. Perinatal deaths outnumber adult deaths from breast cancer each year, and represent twice the number of deaths to road trauma. Yet substantial public health and awareness campaigns surround breast cancer and road accidents. RANZCOG strongly supports a substantial effort to deal with these tragic losses.

Over the last decade, the rate of stillbirth in Australia has fallen from 7.3 per 1000 births in 2005, to 7.0 per 1000 in 2015, a reduction in the rate of approximately 4%. The most recent data from the AIHW show that the commonest causes of perinatal death are severe congenital anomalies in the baby (28.7%), and extremely preterm birth (16.3%). In Australia, 13.5% of stillbirths remain unexplained. Almost one third of all perinatal deaths are due to maternal and fetal conditions, many specific to pregnancy, such as diabetes, hypertension, trauma, and immune conditions. These conditions also include complications of twin pregnancy, haemorrhage and placental complications, and rhesus incompatibility. The areas in which there are substantial opportunities for improvement in outcome are with the detection and management of fetal growth restriction (FGR) and avoidance of intrapartum hypoxic death, together contributing about 8% of all stillbirths.

Fetal growth restriction is a strong risk factor for stillbirth (Bukowski et al, 2014). To protect against stillbirth, it is thus important that FGR is screened for and that suspected diagnoses of FGR undergo formal diagnosis – usually by ultrasound – and that a diagnosis of FGR prompts action. For pregnancies either at risk of FGR, or identified as being complicated by FGR, current evidence from meta-analysis suggests that the use of Doppler ultrasound on the umbilical artery reduces the risk of perinatal deaths and may result in fewer obstetric interventions (Alfirevic et al, 2017).

However, changes in the velocity of fetal growth are also important to consider. While FGR is a major risk factor for stillbirth, half of stillborn babies are appropriate for the gestational age. However, ultrasound evidence of reduced growth velocity in the third trimester are an important but under-recognised cohort at risk of stillbirth and requiring intensive surveillance and early delivery. (MacDonald et al, 2017) A study of 2232 pregnancies with known or suspected FGR found that planned induction of labour at 37 weeks had a protective effect against stillbirth (Rabinovich et al, 2018).

The key issue is identification of pregnancy in which FGR is suspected or likely. Data from Australian studies shows that the model of antenatal care strongly influences the probability that FGR will be identified before labour (Diksha et al, 2018). These data are supported by studies showing that, in Australia, model of care directly influences the risk of perinatal death. Adams and colleagues (2018) studied over 130000 births in Australia and found that, after adjustment for maternal and pregnancy factors (including the presence of major congenital anomalies, birth method, and gestational age), the rate of stillbirth was more than 20% higher when pregnancy and birth were not directly managed by a specialist obstetrician (adjusted OR 1.56, 95% CI 1.26 – 1.94). A similar study from Melbourne involving over 44000 normal term singleton pregnancies also revealed that the rate of perinatal death was almost doubled (1.3/1000 vs 2.4/1000, $p < 0.05$) without direct obstetrician involvement.

At a population level, there is evidence that elective induction of labour at 39 weeks – compared

to continued pregnancy with surveillance – will result in fewer stillbirths and other adverse perinatal outcomes.(Sinkey et al, 2018; Little, 2017) A study of over 100000 births in Denmark between 2008 and 2014 revealed that 'aggressive' policies of fetal surveillance and induction of labour halved the rate of stillbirth for Danish women (from 0.9% to 0.5%, adjusted OR 0.50, 95% CI 0.29 – 0.89). There was no effect of this 'aggressive' policy on caesarean section or instrumental birth rates nationally.(Zizzo et al, 2017) Similar policies in North America have confirmed that induction at 39 weeks or beyond to protect against stillbirth does not increase rates of caesarean section or, indeed, rates of other adverse outcomes for women or their babies.(Walker et al, 2016) The Cochrane review of induction of labour again showed that, in pooled data, policies of induction of labour were associated with a significant reduction in rates of stillbirth (RR 0.33, 95% CI 0.11 – 0.96).(Middleton et al, 2018)

One of the concerns expressed in the community has been that caesarean section is associated with an increased risk of stillbirth in subsequent pregnancies. However, population data show that such conclusions are confounded by 'underlying medical conditions… and by indication for the primary caesarean section delivery.'(O'Neill et al, 2014) Population data in Australia certainly do not support this: as the rate of caesarean birth in Australia has increased from 17% to 32% over the last 25 years, there has been a decrease in the overall rate of stillbirth from 7.6/1000 to 7.0/1000 over the same time period. Studies have concluded that rates of adverse outcomes for babies continue to fall significantly as "the use of cardiotocography and caesarean section rates have risen".(Smith et al, 2000)

Stillbirth is defined as the birth of a baby who shows no signs of life after a pregnancy of at least 20 weeks gestation or weighing 400 grams or more.

While Australia is one of the safest places in the world to give birth, almost 1 in 100 pregnancies at or beyond 20 weeks gestation end in a perinatal death.[1] The loss of a baby who was either stillborn or died in the first weeks of life is a traumatic event that affects around 3,000 families every year in Australia.

The Perinatal Deaths in Australia 1993-2012 report shows the overall rate of perinatal deaths – stillbirths or neonatal deaths, that is death within the first four weeks of life – remained fairly stable over this 20-year period. While neonatal deaths declined by 18%, the stillbirth rate increased by 13%.

The risk factors associated with stillbirth include but are not limited to: obesity, advanced maternal age, smoking, first pregnancy and diabetes and hypertension. A large proportion of stillbirths are unexplained, and the causes need to be further explored. Some of the known causes of stillbirth include: congenital anomalies, premature birth, problems with the placenta or cord, fetal growth restriction and maternal medical conditions.

The perinatal mortality rates vary significantly between subgroups within the population including between the Indigenous and non-Indigenous groups, socially and economically disadvantaged and non-disadvantaged groups, and maternal age groups.

2. Improvements needed in the National Perinatal Data Collection

The College has welcomed the opportunity to participate in ongoing development of the National Maternity and Perinatal Data Set. A number of issues of relevance to research into stillbirth have been and will be addressed. One deficiency that has not yet been remediated is the failure to accurately report gestational age at birth.

National Reporting of Gestational Age

It has become apparent to the College in the course of contributing to the ACSQHC Atlas of Variation that the gestational age is only reported nationally in "completed weeks" of gestation, rather than "x" weeks and "y" days. This is a serious impediment to epidemiological research – particularly at the extremes of gestational age. Around viability (23-24 weeks' gestation), a single day can mean a change in perinatal mortality of ca 3%. In late pregnancy that has gone beyond the due date, mortality differences between 41.0 weeks' and 41.6 weeks' are of clinical significance but treated the same in a data collection that records only "completed weeks". Both are currently recorded as 41 weeks' gestation.

National Reporting of Maternal Height and Weight

There is very sound national and international evidence that antenatal detection of fetal growth restriction is critically important in improving pregnancy outcome (Lindquist & Molin, 2005). Further, customisation by maternal height and weight will better predict the fetus at risk (Anderson et al, 2016; Pritchard et al, 2018). It is a serious deficiency of the national perinatal data set (and some of the state perinatal data sets), that maternal height and weight is not recorded. This is a simple task. Not collecting critical data impairs important research.

Antenatal Diagnosis of Fetal Genetic, Chromosomal and Structural Conditions that may impact on Adverse Perinatal Outcome

The advances in the antenatal testing for genetic, chromosomal and structural conditions proceeds at an almost astonishing pace. Many of these conditions impact on adverse perinatal outcome and often have a profound impact on affected families. There is a serious absence of national data collection in this critically important area of maternity care. This is not simply a matter of offering women choices around termination of pregnancy for life-threatening fetal conditions but also can assist in the prevention of mortality and long-term morbidity through measures being put in place around birth or early in the neonatal period where specific conditions have been diagnosed antenatally and the newborn can benefit from the immediate therapy that is sometimes needed.

3. Improvements needed in the National Core Maternity Indicators

Severe intra-uterine growth restriction in a singleton pregnancy undelivered by 40 weeks' gestation.

Antenatal detection of FGR is a critical objective of maternity care, given that it is a significant cause of perinatal morbidity and mortality, and the single largest cause of unexplained stillbirth (Gardosi et al, 2013). The Victorian Department of Health has nominated "Severe intra-uterine growth restriction in a singleton pregnancy undelivered by 40 weeks" as a core maternity indicator. This has both enabled and encouraged research into those factors responsible for poor performance in this indicator (Diksha et al, 2018). There is an urgent need to adopt this indicator nationally.

Perinatal Death at Term

Although much funding has focussed on preterm birth (e.g. March of Dimes), approximately one-third of deaths of normally formed singletons occur in the mature fetus (Vashevnik et al, 2007). In contrast to most deaths (stillbirth or neonatal) of the preterm fetus, the vast majority of term perinatal deaths are essentially avoidable by timely induction of labour or caesarean section. Although routine induction of labour at 39 weeks' has some strong advocates (Sinkey et al, 2018), it is much more realistic for research to better identify those women who would benefit most from this intervention. "Perinatal death at term" as a National Core Maternity Indicator would focus research in this important area of maternity care and monitor progress of strategies aimed at decreasing these mostly avoidable perinatal deaths.

4. Summary

RANZCOG strongly supports investment in improved data collection and reporting infrastructure to increase the effectiveness of obstetric research within Australia into adverse maternity outcomes. While stillbirth has the current focus of the Senate Inquiry, other adverse outcomes are just as important including Neonatal Death and Cerebral Palsy. Omitting these equally important adverse outcomes from the discussion, risks failing to capture the overall benefits of important initiatives in maternity care.

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