Making a meaningful difference for women and babies

ARCH
Australian Research Centre for Health of Women and Babies
Research Report 2010
Contents

ARCH’s Vision, Values & Mission 4
Director’s Report 5
Organisational Structure of ARCH 6
Research Division Highlights for 2010 7
  Research Synthesis Division 7
  Clinical Studies and Trials Division 11
  • Australasian Randomised Collaborative Trials Uniquely aRe US 11
  • Studies, Trials and Assessments after Research Studies 17
Indigenous Maternal and Perinatal Health Division 20
International Maternal and Perinatal Health Division 21
Translational Health Division 25
Research Networks and Education Division 29

Awards, Scholarships & Fellowships 31
Research Training Highlights 32
ARCH Researchers & Collaborators 36
ARCH Publications 40
Grants 51
ARCH’S VISION
To attain the best health and wellbeing possible for women and their babies through excellence and leadership in research, education and knowledge transfer.

ARCH’S VALUES
As we seek to improve health care to benefit women and babies, the qualities we uphold and emphasise are:

<table>
<thead>
<tr>
<th>RELEVANCE</th>
<th>Research meeting the needs of women and their babies.</th>
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</thead>
<tbody>
<tr>
<td>COLLABORATION</td>
<td>Partners in research with clinicians, researchers, policy makers, consumer and communities.</td>
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<tr>
<td>INTEGRITY</td>
<td>To conduct research that is ethical, honest and equitable.</td>
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<td>INNOVATION</td>
<td>To develop and pursue novel and leading edge research questions and methodologies.</td>
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<td>BUILDING RESEARCH CAPACITY</td>
<td>To nurture and support researchers for the future.</td>
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<td>PRIORITY</td>
<td>To address priority research questions.</td>
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<td>LEADERSHIP</td>
<td>Leaders in maternal perinatal care.</td>
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<tr>
<td>EXCELLENCE</td>
<td>In all that we do.</td>
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ARCH’S MISSION
The Australian Research Centre for Health of Women and Babies (ARCH) is a world leader in maternal and perinatal research.

We will continue to be an international centre of excellence for maternal and perinatal research, which will benefit women and babies by:

- Answering questions of major importance in the field of maternal and perinatal health, across the spectrum from preconception, through pregnancy and childbirth, infancy and later life;
- Generating research evidence of the highest quality that promotes the best health possible for all women and their babies;
- Ensuring that research findings are incorporated into health care practice;
- Increasing capacity in research synthesis, randomised trials and implementation and translational research through career development and education, locally, nationally, and internationally; and
- Strengthening our existing collaborations and identifying new international, national and regional collaborations.
Welcome to the ARCH Research Report for 2010 ~ another enormously productive year for generating vital health information, with new studies commenced, ongoing growth and completion and publication of major projects.

All six research divisions within ARCH (Research Synthesis, Clinical Studies and Trials, Translational Research, Indigenous Maternal and Perinatal Health, Research Networks and Education and International Maternal and Perinatal Health) have been highly productive in 2010 with eight new grants awarded, nine significant awards and scholarships, and 80 publications (51% of papers were published in A* ERA (Excellence in Research for Australia)) journals.

Guided by our strategic initiatives, ARCH research leaders and staff provide extensive expertise in research design, maternal and perinatal care, study coordination, psychological assessment, data management, statistics, office administration and research synthesis and knowledge translation. The effective partnerships within and between the ARCH research divisions in The Robinson Institute are highly valued as are the significant achievements of individual staff and students.

Through its individual studies, collaborative research networks and educational programs, ARCH continues to enjoy strong, enduring partnerships with researchers in key institutions and health professionals in participating hospitals providing care for women and their babies within Australia, New Zealand and internationally.

As ARCH strives to achieve better health through excellence in leadership, research, education and knowledge translation, we are making meaningful differences for women and babies and their families.

Caroline A Crowther
Director, ARCH
ARCH’s Organisational Structure

ARCH has six key Research Divisions:

★ Research Synthesis
★ Clinical Studies and Trials - ARCTURUS & STARS
★ Translational Research
★ Indigenous Maternal and Perinatal Health
★ International Maternal and Perinatal Health
★ Research Networks and Education
Aims
To conduct, promote and support the preparation and updating of high quality systematic reviews of the existing evidence on questions of relevance to women and babies in Australia, regionally in South East Asia, and internationally.

Highlights of 2010
The Cochrane Collaboration is an international organisation committed to providing high quality, independent evidence to inform health care decision-making. Cochrane reviews combine results of the world’s best medical research studies, and are recognised as the gold standard in evidence-based health care. Cochrane reviews in maternal and perinatal health have major impact by providing evidence for clinical practice, health care policy and for identifying new research strategies.

The Australian Collaborative Research Network (the Australasian Review Authors Group for the Cochrane Pregnancy and Childbirth Collaborative Review Group) is funded by the Federal Department of Health and Ageing, with the national coordinating centre at ARCH. Current Grant: 2009-2012, $180,000.
New Funding Success for IPD Meta-analysis

Funding was obtained from the NHMRC to conduct an individual patient data (IPD) meta-analysis on the use of repeat dose(s) of prenatal corticosteroids prior to preterm birth. The study will involve 11 international trial groups and aims to clarify which women and babies will benefit most from repeat corticosteroids and what is the optimal drug regimen. The International Collaboration is known as the PRECISE Collaboration (Prenatal REpeat Corticosteroid International IPD Study group: assessing the effects using the best level of Evidence). The study entitled “Prenatal Repeat Corticosteroids in women at risk of preterm birth for improving neonatal health - an individual patient data review” has been funded for three years 2011-2013, $447,281.

Australasian Review Authors Group for Cochrane Pregnancy and Childbirth Collaboration Review Group

★ New National Cochrane Coordinator
Emer Heatley was appointed as the new National Pregnancy and Childbirth Group Cochrane Coordinator in December 2010. Emer brings her previous medical school training and research expertise to this key position.

★ High Quality, Updated, Systematic Review
Our Australian review authors contributed to 89/324 (28%) of all the Pregnancy and Childbirth reviews and 26/101 (26%) of the protocols published in The Cochrane Library (as of Issue 12, 2010). Over the past year, members of the Cochrane Pregnancy and Childbirth Australian Review Authors Group were involved in preparing 12 titles, 12 protocols, 20 new reviews and 12 updated reviews, considerably exceeding our key performance indicators (see publications 2010).

★ Support for Reviewers
We actively monitor the progress of over 150 Australian review authors, offering support and encouragement at key stages of review preparation. The ARCH research leaders and other project investigators with grant funding from The Department of Health and Ageing provide intensive support to most protocols, reviews, and updates being prepared for publication.
Cochrane Pregnancy and Childbirth Editorial Meetings

ARCH hosted the international editorial meeting of the Cochrane Pregnancy and Childbirth Group in Adelaide in March 2010.

Attendees included:

- Jim Neilson, The University of Liverpool, UK.
- Zarko Alfirevic, Liverpool Women’s Hospital, The University of Liverpool, UK.
- Justus Hofmeyr, The Effective Care Research Unit, University of the Witwatersrand, South Africa.
- Jodie Dodd, Australian Research Centre for Health of Women and Babies (ARCH), The University of Adelaide, Australia.
- Philippa Middleton, Australian Research Centre for Health of Women and Babies (ARCH), The University of Adelaide, Australia.
- Caroline Crowther, Australian Research Centre for Health of Women and Babies (ARCH), The University of Adelaide, Australia.
- Sonja Henderson, The University of Liverpool, UK.
- Frances Kellie, The University of Liverpool, UK.
- Lynn Hampson, The University of Liverpool, UK.

Caroline Crowther chaired the Cochrane Pregnancy and Childbirth Group meeting at the Cochrane Colloquium in Keystone, Colorado in October 2010.

New Australian Associate Editor

Philippa Middleton (ARCH, University of Adelaide) was invited to join the Cochrane Pregnancy and Childbirth Collaborative Review Group International Editorial Team as an associate editor in November 2010.

Training Workshops and Meetings for the Continued Promotion of Systematic Reviews within Related Disciplines

As a research division we have been actively involved in organising meetings and workshops around the annual Perinatal Society of Australian and New Zealand (PSANZ) conference in Wellington in April 2010 and used the opportunity to promote Cochrane within the body of the PSANZ scientific congress.
Jodie Dodd and Rosalie Grivell have been involved in teaching resident medical officers and registrars about evidence-based medicine and use of Cochrane reviews through the Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG) training programs.

With the Australian and New Zealand Stillbirth Alliance (ANZSA) and International Stillbirth Alliance (ISA), ARCH is producing systematic reviews on stillbirth and documenting impact, evidence and research needs regarding stillbirth in high income countries. The work will be published as an invited series of papers for The Lancet in 2011. Philippa Middleton presented a paper at The Cochrane Colloquium in Keystone, Colorado in October 2010 entitled “Using Cochrane reviews to help reduce fetal and other perinatal deaths in high income countries”.

Philippa Middleton continues to contribute to the development of the Cochrane Handbook for Systematic Reviews of Interventions; and remains part of the Cochrane Handbook Editorial Advisory Group.

AMICABLE Collaboration – Major IPD Underway

Magnesium sulphate prior to birth increases the chances of preterm babies surviving or preventing cerebral palsy. The AMICABLE Collaboration (Antenatal Magnesium IPD International Collaboration: assessing the benefits for babies using the best level of evidence) is undertaking an individual patient data (IPD) meta-analysis on the use of magnesium sulphate in women at risk of very preterm birth for neuroprotection of the fetus. This patient level analysis will clarify optimal gestational age, timing prior to preterm birth magnesium sulphate should be given, the best dose and regimen to use and which women are most likely to benefit. The “Magnesium sulphate in women at risk of preterm birth for fetal neuroprotection – an individual patient data (IPD)” is funded for two years 2010-2011, $268,751.
**Aims**

To conduct, promote and support high quality randomised trials and studies, to answer research questions of major importance in maternal and perinatal health, across the spectrum from preconception, through pregnancy and childbirth, infancy and later life, of relevance to women and babies worldwide.

**Highlights of 2010**

**ARCTURUS**

Australasian Randomised Collaborative Trials Uniquely aRe U S

**New Funding Success**

The IDEAL Trial received NHMRC Project Grant Funding for 2011-2014, $632,979.

* IDEAL: Investigation of dietary advice and lifestyle for women with borderline gestational diabetes.

Current clinical practice involves the treatment of women with mild gestational diabetes. It is unclear whether the benefits of similar treatment for women with more borderline gestational
glucose intolerance outweigh any harms. The aims of this randomised clinical trial are to assess whether treatment of dietary and lifestyle advice, given to pregnant women who have borderline glucose intolerance on screening for gestational diabetes, reduces neonatal complications without increasing maternal risks.

**Number of women recruited at 31/12/2010 (of total needed):** 310 (682)

**Key research staff:** Andrea Deussen (coordinator), Shanshan Han, Stephanie Krawcyzk, Sophie Trenowden, Kaye Robinson, Caroline Holst

**Funding:** NHMRC Project Grant, 2011-2014, $632,979; Channel 7 Research Foundation, 2007-2009, $94,000

**Investigators:** Professor Caroline Crowther, Philippa Middleton, A/Professor William Hague, A/Professor Peter Baghurst, Dr Andrew McPhee, Professor Jodie Dodd, E/Professor Jeffrey Robinson.

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The PPROMT Trial received further Project Grant funding from NHRMC to be able to complete the study for 2011-2013, $832,928.

★ **PPROMT: Preterm prelabour rupture of membranes close to term.**

This large, multinational randomised trial is coordinated from the University of Sydney, and is evaluating the optimal time of birth for women with preterm prelabour ruptured membranes between 34 and 37 weeks’ gestation.

**Number of women recruited at 31/12/2010 (of total needed):** 731 (1662)

**Key research staff:** Pat Ashwood (coordinator), Lucy Simmonds, Shanshan Han, Daniela Galigardi, Sophie Trenowden, Kaye Robinson, Caroline Holst

**Funding:** NHMRC Project Grant, 2011-2013, $832,928; NHMRC Project Grant, 2005-2009, $756,300

**Investigators:** Professor Jonathan Morris, Dr Christine Roberts, Professor Caroline Crowther, Professor David Henderson-Smart, Dr Jane Ford, Dr Jennifer Bowen, Dr Sarah Buchanan, Dr Samantha Lain.
New Research Initiatives for 2010

Our new research initiatives are focused around the priority themes of care for women with a high risk pregnancy to improve health outcomes and care around preterm birth.

★ MAGENTA: Magnesium sulphate at 30 to 34 weeks' gestational Age: Neuroprotection Trial

Babies born very preterm have a greater risk of significant morbidities including neurologic impairments such as cerebral palsy. The risk of morbidity increases with decreasing gestational age at birth. The Cochrane review evaluating the effect of magnesium sulphate on neuroprotection of the fetus shows that magnesium sulphate given to women at risk of imminent preterm birth reduces the risk of cerebral palsy. It remains unclear at which gestational age treatment will be beneficial. The National Clinical Practice Guidelines on Antenatal Magnesium Sulphate prior to preterm birth of the fetus, infant and child recommends further randomised trials at 30 weeks’ gestation or more. This has led to the MAGENTA Study.

Recruitment to commence 2011

Investigators: Professor Caroline Crowther, Philippa Middleton, A/Professor Dominic Wilkinson, A/Professor Ross Haslam.

Seven Major Trials/ Studies Ongoing Coordinated By ARCH

Our seven ongoing major research studies are evaluating care during pregnancy and childbirth, care around preterm birth and care for women with a multiple pregnancy.

★ A*STEROID: Australian Antenatal Study To Evaluate The Role Of Intramuscular Dexamethasone versus Betamethasone prior to preterm birth to increase survival free of childhood neurosensory disability.

Both dexamethasone or betamethasone, given to women at risk of preterm birth, substantially improve neonatal and child health. There are conflicting reports as to whether dexamethasone is better than betamethasone. The aims of this randomised trial are to compare the benefits and harms associated with these treatments. This multicentre randomised trial commenced recruiting in 2009, with 13 hospitals participating within Australia by December 2010.

Number of women recruited at 31/12/2010 (of total needed): 490 (1499)

Key research staff: Pat Ashwood (coordinator), Daniela Galigardi, Sophie Trenowden, Shanshan Han, Lucy Simmonds, Melissa Ewens, Jess Reid, Kaye Robinson, Caroline Holst

Funding: NHMRC Project Grant, 2009-2013, $1,674,250

Investigators: Professor Caroline Crowther, Professor Jane Harding, Philippa Middleton, Dr Chad Andersen, E/Professor Jeffrey Robinson.
**MCA Doppler Study: Fetal middle cerebral artery Doppler velocimetry to determine the timing of second and subsequent fetal blood transfusions in the treatment of fetal anaemia secondary to red cell alloimmunisation – a randomised controlled trial.**

Red cell alloimmunisation is estimated to affect 0.1 to 0.6% of all live births. Treatment of the resultant fetal anaemia with intrauterine fetal blood transfusion has been associated with survival rates in excess of 90%. However, intrauterine fetal blood sampling and transfusion is an invasive procedure, with recognised complications, which may result in the need for early birth, and rarely mortality. More recently, reports have emerged utilising Doppler ultrasound to measure the fetal middle cerebral artery (MCA) peak systolic velocity (PSV) to determine the presence of fetal anaemia. Systematic review of the literature has indicated a lack of information from randomised controlled trials comparing this technique with standard measures based on prediction in the rate of fall in the fetal haemoglobin. Cohort studies reporting the use of fetal MCA-PSV in this setting yield conflicting results. Clearly, high quality trials are a priority to assess the role of MCA-PSV in determining the timing of second and subsequent fetal intrauterine blood transfusions, and the impact this has on fetal and neonatal morbidity, when compared with current standard care. The aims of this trial are to assess in the fetus where one intrauterine fetal transfusion has been performed for anaemia due to red cell alloimmunisation, whether fetal MCA-PSV can be safely used to determine the timing of second and subsequent fetal blood transfusions, without increasing the risk of adverse fetal and neonatal health outcomes.

**Number of women recruited at 31/12/2010 (of total needed):** 20 (564)

**Key research staff:** Professor Jodie Dodd, Andrea Deussen

**Funding:** NHMRC Project Grant, 2010-2012, $473,750

**Investigators:** Professor Jodie Dodd, A/Professor Jan Dickinson, Dr Chad Andersen, Professor Rory Windrim, Professor Greg Ryan.

**DIAMIND Study: Postpartum reminders to test for Type 2 diabetes in women who have experienced gestational diabetes mellitus.**

Women who have had gestational diabetes mellitus may go on to develop Type 2 diabetes. Having blood glucose tests after child-birth is important in preventing or delaying Type 2 diabetes through early identification and management. However what is not known is the best time to do the testing, or the best way of sending reminders to women who require a test. The DIAMIND study is a randomised controlled trial designed to help answer these questions, using mobile phone technology.

**Number of women recruited at 31/12/2010 (of total needed):** To commence recruitment in 2011 (252)

**Key research staff:** Philippa Middleton

**Investigators:** Philippa Middleton, Professor Caroline Crowther, A/Professor Bill Hague.

**LIMIT: Limiting weight gain in overweight and obese pregnant women to improve pregnancy outcomes: a randomised trial.**

Obesity is a significant health issue for women during pregnancy and childbirth, with over 40% of pregnant women being overweight or obese. There are well documented risks associated with obesity during pregnancy and childbirth, maternal complications including hypertensive conditions and pre-eclampsia, gestational diabetes, infection, thromboembolic events, need for induction of labour, caesarean section and perinatal death. Infants of mothers who are overweight or obese are more likely to be macrosomic, require admission to the neonatal intensive care unit, be born preterm, be identified with a congenital anomaly, and to require treatment for jaundice or hypoglycaemia. While there is an extensive body of literature related to defining the problems and potential complications associated with obesity during pregnancy and childbirth, there is limited information available related to effective interventions that may be implemented to improve maternal and infant health outcomes. The aims of this randomised controlled trial are to assess whether the implementation of a
package of dietary and lifestyle advice to overweight and obese pregnant women to restrict weight gain during pregnancy is effective in improving maternal, and infant health outcomes.

**Number of women recruited at 31/12/2010 (of total needed):** 1710 (2832)

**Key research staff:** Andrea Deussen (coordinator), Catherine Danz, Michele Finlay, Angela Halyburton, Robyn Bartley, Joanne Koch, Ros Stafford-Green, Courtney Cramp, Stephanie Hendrijanto, Aurianne Webber, Nogol Salehi, Judith Beaumont, Danielle Post, Hannah Deussen, Kaye Robinson, Caroline Holst

**Funding:** NHMRC Project Grant, 2008-2011, $1,466,625; NIH Grant, 2008-2012, $1,313,377; Channel 7 Children’s Research Foundation Grant, 2010, $65,000; Clive and Vera Ramaciotti Foundation Grant, 2010, $50,000

**Investigators:** Professor Jodie Dodd, Professor Deborah Turnbull, Professor Gary Wittert, Dr Andrew McPhee, E/Professor Jeffrey Robinson, Professor Caroline Crowther, Professor Julie Owens, Professor Matthew Gillman.

★ PROGRESS: Progesterone after previous preterm birth for the prevention of neonatal respiratory distress syndrome.

Respiratory distress syndrome associated with preterm birth is the major cause of early neonatal mortality and morbidity. Amongst survivors, there is considerable risk of chronic lung disease and long-term neurological disability. Progesterone is involved in maintaining uterine quiescence, and its withdrawal leads to the onset of labour. Although recent reports of progesterone supplementation for women at risk of preterm birth show promise there are currently insufficient data on clinically important outcomes to enable informed decision-making. This large, international randomised trial is evaluating whether antenatal vaginal progesterone for women who have had a previous preterm birth is effective in reducing the risk of subsequent preterm birth and its associated risk of adverse infant health outcomes.

**Number of women recruited at 31/12/2010 (of total needed):** 621 (984)

**Key research staff:** Pat Ashwood (coordinator), Kaye Robinson, Caroline Holst

**Funding:** NHMRC Project Grants, 2006-2009, $1,202,350; 2010-2012, $901,600

**Investigators:** Professor Caroline Crowther, Professor Jodie Dodd, Dr Andrew McPhee, A/Professor Vicki Flenady, E/Professor Jeffrey Robinson.
★ **TWINS: Timing of birth at term: a randomised trial.**

This multicentre randomised trial is evaluating the optimal time of birth for women with an uncomplicated twin pregnancy at 37 weeks’ gestation and has now completed recruitment. The results will be presented at the PSANZ meeting in 2011.

**Number of women recruited at 31/12/2010:** 235 – now completing follow-up

**Key research staff:** Andrea Deussen (coordinator), Melissa Ewens, Kaye Robinson, Caroline Holst

**Funding:** Women’s and Children’s Hospital Foundation, 2004

**Investigators:** Professor Jodie Dodd, Professor Caroline Crowther, A/Professor Ross Haslam, E/Professor Jeffrey Robinson.

★ **CLOSURE: Skin and subcutaneous fascia closure at caesarean section: a randomised controlled trial.**

This randomised controlled trial is assessing the effects of different methods of skin and subcutaneous fascia closure on maternal wound complication rates. It compares absorbable versus non-absorbable subcuticular suture material for skin closure and closure of subcutaneous fascia versus non-closure.

**Number of women recruited at 31/12/2010 (of total needed):** 700 (1024)

**Key research staff:** Dr Rosalie Grivell

**Funding:** RANZCOG Research Foundation Fotheringham Research Scholarship, $50,000

**Investigators:** Dr Rosalie Grivell, Professor Jodie Dodd, Professor Caroline Crowther.
Active Participation by ARCH in International Collaborative Trials

We continue to participate in important randomised trials that are coordinated by researchers around the world. These include:

- **Control of Hypertension In Pregnancy Study (CHIPS)** – coordinated by Dr Laura Magee, University of British Columbia, Canada. Local coordinator, Sophie Trenowden; Local investigators, Professor Caroline Crowther, A/Professor William Hague, Dr Peter Muller.

- **Evaluation of care for babies in-utero with bladder outlet obstruction (PLUTO)** – coordinated by Professor Mark Kilby, University of Birmingham, United Kingdom.

- **Mode of birth for women with a twin pregnancy (Twin Birth Study)** – coordinated by Dr Jon Barrett, University of Toronto, Canada. Local coordinator, Andrea Deussen.

- **Thrombophilia in Pregnancy Prophylaxis Study (TIPPS)** – coordinated by Dr Marc Rodger, Ottawa Hospital Research Institute, Canada.

STARS
Studies, Trials and Assessments after Research Studies

Cerebral Palsy Research Group

The Cerebral Palsy Research Group is the world’s premier group investigating the interaction of genetic and environmental causes of cerebral palsy. It is a multidisciplinary group based in ARCH within the Robinson Institute and the University of Adelaide Discipline of Obstetrics and Gynaecology. The group is headed by Professor Alastair MacLennan ably assisted by the members listed below. The group changing name reflects its widening relationships with other Australian researchers as last year it was called the South Australian Cerebral Palsy Research Group and now is the Australian Collaborative Cerebral Palsy research Group. The group collaborates widely with national and international groups interested in cerebral palsy causation and has won funding from the NHMRC, The Cerebral Palsy Research Foundation (NSW) and Tenix (an Australian industrial group who specially support our research).

This year the research group has been collaborating with leading genomic laboratories in the US including Professor Evan Eichler in Washington State University and Professor Christa Martin at Emory University, Atlanta. We were pleased to be visited by James Blackman, Professor of Developmental Pediatrics in West Virginia and we keep up our close liaison with Professor Karin Nelson in NIH, Bethesda.

Two postgraduate students have worked closely with the group over the last three years. Michael O’Callaghan will submit his PhD thesis in 2011 and this is based on his coordination of the world’s largest gene-association study in cerebral palsy. He has obtained 4,320 buccal (cheek) swabs from case and control mother and child pairs along with extensive epidemiological data. The swabs provide DNA for the detection of specific genes of interest. His data will provide important insights into the epidemiological and genetic associations with cerebral palsy and his thesis concerns the interaction of genetic susceptibility genes with environmental risk factors such as infection. Gai McMichael is well into her Master’s degree project and is developing and applying new methodologies that have led to novel findings of particular structural genetic alterations in cerebral palsy families. She has improved the methodology to detect viral DNA in stored neonatal blood spots. This work provides evidence of perinatal infection links with the group’s search for genetic susceptibility genes in cerebral palsy families.

Current members of the Australian Cerebral Palsy Research Group are Professor Alastair MacLennan, Professor Eric Haan, Professor Jozef Gecz, Professor Paul Goldwater, Professor Gus Dekker, Dr Catherine Gibson, Jessica Broadbent, Gai McMichael, Michael O’Callaghan, Corrine Reynolds, Kevin Priest, Professor David Adelson, Dr Ray Russo, Dr Suzanna Thompson and Professor Grant Montgomery (Qld). Grateful thanks to all our interstate collaborators especially at the Cerebral Palsy Institute (NSW).
Major Follow-Up Studies Underway

The ongoing follow-up of children born following antenatal interventions is essential to understand the longer-term implications of pregnancy care on infant and childhood development.

Three key multicentre trials, all funded by NHMRC project grants, are underway:

★ **ACTORDS 6-8 year follow-up:** follow up of children to early school age to assess the effect of repeat antenatal corticosteroids on childhood growth and development. The follow up assessments will be completed in January 2011. The results will be presented to the ACTORDS Study Group at the PSANZ meeting in Hobart, 2011 and a paper presented at the same meeting.

Number of children followed up at 31/12/2010: 1059

Key research staff: Pat Ashwood, Freya Goodhew, Rachel Earl, Sophie Trenowden

Funding: NHMRC Project Grant, 2007-2010, $1,039,777

Investigators: Professor Caroline Crowther, A/Professor Ross Haslam, Professor Jane Harding, Professor Janet Hiller, Professor Lex Doyle, E/Professor Jeffrey Robinson.

★ **MIG TOFU:** follow up of children at early school age to assess the effect of metformin on childhood development.

Recruitment began in 2010 (181)

Key research staff: Suzette Coat

Funding: NHMRC Project Grant, 2008-2011, $621,450

Investigators: A/Professor Bill Hague
★ **LIMIT:** follow up of children at 6 and 18 months to assess the effect of dietary and lifestyle advice to overweight and obese women during pregnancy to limit weight gain on childhood development.

**Number of children followed up at 6 months at 31/12/2010 (of total needed):** 144 (2200)

**Key research staff:** Andrea Deussen (coordinator), Catherine Danz, Michele Finlay, Angela Halyburton, Robyn Bartley, Lee-ann Chapple, Joanne Koch, Ros Stafford-Green, Courtney Cramp, Stephanie Hendrijanto, Aurianne Webber, Nogol Salehi, Judith Beaumont, Danielle Post, Kaye Robinson, Caroline Holst

**Investigators:** Professor Jodie Dodd, Professor Deborah Turnbull, Professor Gary Wittert, Dr Andrew McPhee, E/Professor Jeffrey Robinson, Professor Julie Owens, Professor Matthew Gillman, Professor Caroline Crowther.
Aims
To continue to expand our collaborations with indigenous organisations and communities to conduct research of relevance for indigenous women and their babies.

Highlights of 2010
ARCH continues to maintain and build its collaborations with indigenous organisations keeping up to date on current issues and policy changes and endeavours to seek collaborative funding opportunities where possible.

Emeritus Professor Jeffery Robinson together with researchers A/Prof Stephanie Brown; Dr Jane Yelland; Ms Karen Glover; Mr Alwin Chong; Prof Jonathan Newbury; A/Prof Fiona Arney and Dr Georgina Stamp have received NHMRC Project Grant funding to undertake a study entitled ‘Aboriginal Families Study: closing the gap in Indigenous maternal and child health outcomes’. This study was awarded $950,984.40, 2011-2014.

Key Presentations

☆ International Stillbirth Alliance and International Society for the Study and Prevention of Infant Death Joint Conference, Sydney, October 2010
Philippa Middleton gave an invited plenary address at the International Stillbirth Alliance and International Society for the Study and Prevention of Infant Death Joint Conference, 8-10 October 2010 in Sydney on “Reducing stillbirths and infant deaths among Indigenous women”.

☆ National Antenatal Care Guidelines Meeting, Sydney, February 2010
Philippa Middleton gave an invited address at the National Antenatal Care Guidelines meeting in Sydney in February 2010 on “Strategies and models for preventing infant mortality among Indigenous and teenage women”.
**International Maternal and Perinatal Health Division Report**

**Aims**

To expand our wide collaborative research links within South East Asia and internationally to facilitate maternal and perinatal research, support and education.

**Highlights of 2010**

**New Funding Success for South East Asian Maternal Perinatal Research Network**

The SEA-URCHIN initiative (South East Asia – Using Research for Change in Hospital-acquired Infection in Neonates) received funding from the NHMRC for 2011-2015, $2,179,916. SEA-URCHIN will build on the successful SEA-ORCHID (South East Asia – Optimising Reproductive and Child Health In Developing countries Project that aimed to build capacity amongst health practitioners in evidence-based maternal and perinatal health.

- **SEA-URCHIN**: South East Asia – Using Research for Change in Hospital-acquired Infection in Neonates

  **Funding**: NHMRC Project Grant, 2011-2015, $2,179,916

  **Investigators**: Professor Sally Green, Professor Heather Jeffrey, Mr Steve McDonald, Dr Monica Lahra, A/Professor Malinee Laopaiboon, Ms Joanne McKenzie, Professor Pisake Lumbiganon, Professor Caroline Crowther.

  Joint initiative with four key University institutions in South East Asia and Australia, funded by the NHMRC.

**SEA-ORCHID**

**Capacity building and evidence based health care in South East Asia.**

The burden of mortality and morbidity related to pregnancy and childbirth remains concentrated in developing countries. SEA-ORCHID is evaluating whether a multifaceted intervention to strengthen capacity for research synthesis, evidence-based care and knowledge implementation improves adoption of best clinical practice recommendations leading to better health for mothers and babies. In this study we assessed current practices in perinatal health care in four South East Asian countries and determined whether they were aligned with best practice recommendations.
We completed an audit of 9,550 medical records of women and their 9,665 infants at nine hospitals; two in each of Indonesia, Malaysia and The Philippines, and three in Thailand between January-December 2005. We compared actual clinical practices with best practice recommendations selected from the Cochrane Library and the World Health Organization Reproductive Health Library.

We conclude that recording of clinical practices should be an essential step to improve quality of care. Based on these findings, the SEA-ORCHID project team has been developing and implementing interventions aimed at increasing compliance with evidence-based clinical practice recommendations to improve perinatal practice in South East Asia.

South East Asia Investigators

★ Professor Mario Festin, Institute of Clinical Epidemiology National Institutes of Health, University of The Philippines, Manila, Philippines.

★ Professor Mohammad Hakimi, Gadjah Mada University Faculty of Medicine, Yogyakarta, Indonesia.

★ Professor Jackie Ho, University of Penang, Penang, Malaysia.

★ Professor Pisake Lumbiganon, Khon Kaen University, Thailand.

Australian Investigators

★ E/Professor David Henderson-Smart, The University of Sydney.

★ Professor Sally Green, Monash University.

★ Professor Caroline Crowther, The University of Adelaide.

Publications

★ Baseline papers of pregnancy outcomes for over 10,000 women and their babies were published.

★ Papers arising from the “intervention phase” submitted for publication.

Invited International Meetings

★ Professor Caroline Crowther was an invited speaker at the inaugural Edinburgh Perinatal Health Festival in 2010.
New Initiatives

Widening our international network of collaborators: undertaking individual patient data meta-analysis.

Analysis of thoroughly checked and updated data from individual people in all the available randomised trials has been described as the gold standard in systematic reviews. Estimates of treatment effects are often different from those obtained from aggregate published data due to inclusion of additional or updated data. The methods and advantages of IPD review have been well described.

An integral component of conducting this IPD meta-analysis is the formation of an international collaborative group of trialists where all researchers endorse the IPD protocol and provide data from their trials.

We aim to widen this network through international researchers and clinician commitment to the ‘Magnesium sulphate in women at risk of preterm birth for fetal neuroprotection – an individual patient data (IPD)’ study. Funding was obtained through the NHMRC for two years 2010-2011 to undertake the IPD meta-analysis. Funding: $268,751.

★ PRECISE IPD Collaboration
The inaugural meeting of this IPD Collaboration of 11 international trial groups was organised by ARCH and held in Keystone, Colorado in October 2010. The Prenatal Repeat Corticosteroid International IPD Study: assessing the effects using the best level of Evidence (PRECISE) is funded through the NHMRC for 3 years, 2011-2013, $447,281.
Working towards establishing an international network of maternal fetal medicine specialists willing to collaborate in priority research questions

- MCA Doppler Study and PPROMPT Trial
  Both of these trials have established a network of researchers and clinicians across Australia, New Zealand, Canada, United States, Argentina, Brazil, United Kingdom, Europe and the Arab States.

Contributing to international medical education

- Professor Caroline Crowther has been an author for the updated edition of the 'High Risk Pregnancy Book' published in 2010. Researchers within ARCH (E/Professor Jeffrey Robinson, Professor Jodie Dodd, Professor Caroline Crowther, Dr Rosalie Grivell, A/Professor John Svigos) have contributed individual chapters to this new edition including multiple pregnancy, prelabour rupture of the membranes and threatened and actual preterm labour including mode of delivery.

- Philippa Middleton and A/Professor Vicki Flenady have been working with the International Stillbirth Alliance (ISA) to synthesise and publish evidence about the epidemiology of stillbirth, interventions to prevent stillbirth and implementation research gaps. The work will be published as an invited series of papers in The Lancet in 2011.

Ongoing Initiatives

The International Maternal and Perinatal Health Division’s key research strategies are benefiting women and babies worldwide by continuing to:

- collaborate in international multicentre randomised trials coordinated by other researchers of relevance to women and babies in Australia;

- provide support to the SEA-ORCHID project and similar initiatives;

- encourage and support new maternal and perinatal research projects within South East Asia (SEA-URCHIN);

- provide advice to the World Health Organization (WHO) projects on maternal and fetal health (Global Health Project – near miss maternal mortality);

Translational Health Division Report

Philippa Middleton  Caroline Crowther  Carmel Collins  Tanya Bubner  Helena Oakey  Mary Paleologos

Emer Heatley  Lucy Simmonds  Melissa Ewens  Alice Rumbold

Aims

To promote evidence based practice in women’s and babies’ health by the dissemination and implementation of clinical research findings into clinical practice.

Highlights of 2010

2010 has a busy and exciting year for the Translational Health Division with the culmination of several projects and the beginning of new endeavours building on these projects. In 2010 NHMRC endorsed two of the clinical practice guidelines that ARCH has developed or helped develop (these endorsements count as applied measures of research excellence in the Excellence in Research for Australia (ERA) initiative).

In February 2010, after a national competitive process, ARCH (specifically Philippa Middleton, Caroline Crowther and Vicki Flenady) was selected to be a member of NHMRC’s panel of providers with expertise relevant to the development and presentation of evidence-based health advice. This enables ARCH to be considered for a range of national evidence-based health projects, particularly guideline development and updating.
Guideline Development

ARCH has been at the forefront of national evidence-based guideline development and guideline methods during 2010:

★ Perinatal Mental Health
As a member of the beyondblue’s Guideline Expert Advisory Committee, Philippa Middleton helped to develop their perinatal mental health guidelines ‘Clinical practice guidelines for depression and related disorders (anxiety, bipolar disorder and puerperal psychosis) in the perinatal period’ which were finalised late 2010 and are now endorsed by NHMRC. These guidelines are intended for health professionals providing care in the perinatal period and are being implemented throughout Australia as an integral part of the Australian National Perinatal Depression Initiative. www.beyondblue.org.au.

★ Antenatal Magnesium Sulphate
NHMRC endorsed “Antenatal magnesium sulphate prior to preterm birth for neuroprotection of the fetus, infant and child: national clinical practice guidelines” in November 2010. The development of these guidelines was led by ARCH (Caroline Crowther, Philippa Middleton, Tanya Bubner and Helena Oakey). A team from ARCH is currently working on ways to effectively implement the guidelines at local and national levels (see WISH Project below). The guideline can be downloaded at: http://www.adelaide.edu.au/arch/
Dietary guidelines for pregnant and breastfeeding women

NHMRC has appointed a team consisting of Philippa Middleton (leader) and Caroline Crowther from ARCH, Carmel Collins, Maria Makrides and Jo Zhou from the Child Nutrition Research Centre, Alice Rumbold from the Discipline of Obstetrics and Gynaecology at the University of Adelaide, and Vicki Flenady from the Mater Medical Research Institute in Brisbane to prepare guidelines relating to outcomes for dietary intakes of mothers before and during pregnancy and while breastfeeding. This material is being integrated into the overall dietary guidelines for Australians. The draft documents will be released for public consultation in the first half of 2011.

Other guideline development activity during 2010

Philippa Middleton led an update of the evidence for the NHMRC Guidelines for the prevention of venous thromboembolism (deep vein thrombosis and pulmonary embolism) in patients admitted to Australian Hospitals, provided advice to the group producing the National Antenatal Care Guidelines and was commissioned by the National Institute of Clinical Studies (NICS) to advise on scope and methods for developing national obesity guidelines.

Formulating and grading guideline recommendations

The results of ongoing methodological work on designing the NHMRC system “FORM” for formulating and grading recommendations in evidence-based clinical guidelines has been accepted for publication in BMC Medical Research Methodology. The authors (Susan Hillier, Karen Grimmer-Somers, Tracy Merlin, Philippa Middleton, Janet Salisbury, Rebecca Tooher and Adele Weston) are a national team of methodologists who provide advice (guidelines for Guidelines) to Australian guideline developers and NHMRC.

Plenary on grading guideline recommendations

Philippa Middleton was invited to give a plenary address on rationale and methods of grading guideline recommendations to the Australian Guideline Developers’ Network Workshop in Sydney arranged by NHMRC in November 2010.

Guideline International Network (GIN) conference 2010

On behalf of the Antenatal Magnesium Sulphate for Neuroprotection Guideline Development Panel, Philippa Middleton gave an oral presentation “Rapid development and implementation of guidelines for infant neuroprotection with antenatal magnesium sulphate (MgS04)” at the Guidelines International Network, 25-28 August, 2010 held in Chicago, USA.

Stillbirth

Philippa Middleton has been working with Vicki Flenady and other colleagues on an international project researching the causes of stillbirth in high income countries, synthesising the evidence for effective interventions to reduce the number of stillbirths and determining stillbirth research priorities using group processes. Philippa gave an oral presentation on “Using Cochrane reviews to help reduce fetal and other perinatal deaths in high income countries” at the Cochrane Colloquium in Keystone, Colorado, USA in October 2010. Results of the overall project have been accepted by Lancet in the form of two articles as part of a special issue on stillbirth which will be published in early 2011.
New Initiatives

★ WISH PROJECT (Working to Improve Survival and Health for babies born very preterm)

Once the antenatal magnesium guidelines were endorsed by NHMRC, published and disseminated, our attention has focussed on addressing the implications of implementing these guidelines, since very few obstetric units are currently using magnesium sulphate for fetal, neonatal and infant neuroprotection. We were fortunate to be granted funding from the Cerebral Palsy Alliance which will enable us to monitor and improve the uptake of antenatal magnesium for neuroprotection in Australian tertiary maternity hospitals, as part of the WISH (Working to Improve Survival and Health for babies born very preterm) Project.

Babies born early (less than 30 weeks of gestation) are at high risk of dying in the first weeks of life or later having cerebral palsy. New research evidence shows that giving mothers magnesium sulphate immediately prior to an early birth (at less than 30 weeks’ gestation) significantly increases the chances of the baby surviving without cerebral palsy. The WISH Project aims to nationally monitor and improve the uptake use of antenatal magnesium sulphate as a neuroprotective therapy immediately prior to imminent (birth planned or definitely expected within 24 hours), early preterm birth (less than 30 weeks’ gestation) to reduce the risk of the baby dying or having cerebral palsy. All tertiary maternity hospitals within Australia and New Zealand with a neonatal intensive care unit are being invited to take part and form The WISH Project Group. The Project will optimise the care of women at risk of imminent early preterm birth and so improve the chances of survival and long term good health for their babies.

Key research staff: Tanya Bubner, Melissa Ewens, Emer Heatley, Lucy Simmonds

Investigators: Professor Caroline Crowther; Philippa Middleton; A/Professor Vicki Flenady; Professor Jonathan Morris.

Funding: The Cerebral Palsy Institute Grant, 2011-2013, $274,998
Research Networks and Education Division Report

Aims
To provide high profile research opportunities by identifying research gaps and defining research questions of major importance in maternal and perinatal health.

Highlights of 2010
Cochrane Collaboration

Researchers within ARCH continue to provide:

- Educational training workshops, Cochrane work-ins, and a mentoring program for individual review authors as well as encouraging maternal and perinatal health professionals to become authors of systematic reviews.

- Our high-profile program of research training and support in maternal and perinatal health for students, early career researchers and health professionals, including the program with RANZCOG coordinated by Jodie Dodd and Rosalie Grivell.
WOMBAT Collaboration

Additional funding for 2010 was granted by the NHMRC to continue the WOMBAT Collaboration (WOMen and Babies’ Health and Wellbeing: Action through Trials), NHMRC Enabling Grant, $202,000.

In 2010 the WOMBAT Collaboration, through ARCH, continues to:

- Provide national and regional support for the design, initiation, recruitment, completion, publication and dissemination of results of perinatal clinical trials.
- Provide high quality, multidisciplinary education and training in the management of clinical trials.
- Facilitate high-profile research opportunities by identification and dissemination of research questions needing trials arising from systematic reviews.
- Identify further opportunities to form or join research networks (international and national) in maternal and perinatal health.

WOMBAT Resources

- WOMBAT Trials Booklet 2010 - Australian randomised trials in maternal and perinatal health. (http://www.wombatcollaboration.net)
- WOMBAT Research Gaps 2010 - Maternal and perinatal research gaps identified from Cochrane reviews. (http://www.wombatcollaboration.net)
Awards, Scholarships & Fellowships

Awards

Professor Alastair MacLennan
★ South Australian Hall of Fame Oscar in Obstetrics and Gynaecology 2010

Dr Alice Rumbold
★ Future Justice Medal for demonstrating leadership and initiative in Australia's most disadvantaged sector 2010

Professor Jodie Dodd, Dr Rosalie Grivell, Professor Caroline Crowther, E/Professor Jeffrey Robinson
★ Discipline of Obstetrics & Gynaecology Most Outstanding Clinical Paper “Antenatal intervention for overweight or obese pregnant women: a systematic review of randomised trials” 2010

Mrs Mary Paleologos
★ Head of Discipline of Obstetrics and Gynaecology Award 2010

Scholarships

Shanshan Han
★ Robinson Institute PhD Top-up Scholarship 2010

Dr Danielle Crosby
★ ARCH Clinical Studies and Trials Travel Scholarship 2010

Dr Amanda Poprzeczny
★ ARCH Clinical Studies and Trials Travel Scholarship 2010

Dr Debby Utama
★ ARCH Research Synthesis Travel Scholarship 2010

Fellowships

Professor Jodie Dodd
★ NHMRC Practitioner Fellowship – 2010-2014
# Research Training Highlights

## University of Adelaide Medical Student Research Projects

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Supervisor(s)</th>
<th>Year</th>
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<tbody>
<tr>
<td>Debby Utama</td>
<td>“Direct fetal injection of antenatal corticosteroids prior to preterm birth – a Cochrane Review”</td>
<td>C Crowther</td>
<td>2009 - 2010</td>
</tr>
<tr>
<td>Thuy-My Nguyen</td>
<td>“Magnesium sulphate for women at term for neuroprotection of the fetus – a Cochrane Review”</td>
<td>C Crowther</td>
<td>2010</td>
</tr>
<tr>
<td>Kristin Hsu</td>
<td>“Relaxin for preventing preterm birth in threatened preterm labour”</td>
<td>C Crowther, E Heatley</td>
<td>2010</td>
</tr>
<tr>
<td>Amanda Poprzeczny</td>
<td>“Infant gender and outcomes after antenatal magnesium sulphate for neuroprotection prior to preterm birth”</td>
<td>C Crowther</td>
<td>2010</td>
</tr>
<tr>
<td>Lauren Bolt</td>
<td>“Preconception care and knowledge in women who are overweight and obese prior to pregnancy”</td>
<td>J Dodd, R Grivell</td>
<td>2010</td>
</tr>
<tr>
<td>Vivian Lee</td>
<td>“Perception of body image among women who are overweight and obese”</td>
<td>J Dodd, R Grivell</td>
<td>2010</td>
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<tr>
<td>Cassandra Chaptini</td>
<td>“Anxiety and depression in women who are overweight and obese prior to pregnancy”</td>
<td>J Dodd, R Grivell</td>
<td>2010</td>
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## Clinical Research Fellows (affiliates)

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<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Supervisor(s)</th>
<th>Year</th>
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</thead>
<tbody>
<tr>
<td>Asha Short</td>
<td>“Maternal views and knowledge of risks of overweight and obesity in pregnancy”</td>
<td>J Dodd, R Grivell</td>
<td>2009 - 2010</td>
</tr>
<tr>
<td>Casie Staehr</td>
<td>“Effect of maternal obesity on fetal cardiac development as measured by ultrasound”</td>
<td>J Dodd, R Grivell</td>
<td>2009 - 2010</td>
</tr>
<tr>
<td>Nicole Dreyer</td>
<td>“Clinical care of women who are overweight or obese in pregnancy – a survey of practice of obstetricians and midwives”</td>
<td>J Dodd, R Grivell</td>
<td>2009 - 2010</td>
</tr>
<tr>
<td>Name</td>
<td>Title</td>
<td>Supervisors</td>
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<tr>
<td>Aimee Reilly</td>
<td>“Outcomes associated with induction of labour”</td>
<td>J Dodd</td>
<td>2009 - 2010</td>
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<tr>
<td>Ria Kanazaki</td>
<td>“Women’s and clinician’s views of induction of labour”</td>
<td>J Dodd</td>
<td>2009 - 2010</td>
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<tr>
<td>Kylie Gayford</td>
<td>“Cervical ripening before dilatation and curettage for non-viable pregnancy – A Cochrane systematic review”</td>
<td>J Dodd, R Grivell</td>
<td>2009 - 2010</td>
</tr>
<tr>
<td>Adele Crowley</td>
<td>“Sealing procedures for preterm prelabour rupture of the membranes – A Cochrane systematic review”</td>
<td>J Dodd, R Grivell</td>
<td>2009 - 2010</td>
</tr>
<tr>
<td>Kate Walsh</td>
<td>“Use of endoanal ultrasound for reducing the risk of complications related to anal sphincter injury after vaginal birth”</td>
<td>J Dodd, R Grivell</td>
<td>2009 - 2010</td>
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<tr>
<td>Danielle Crosby</td>
<td>“Effect of Repeat Dose(s) of Prenatal Corticosteroids on the Placenta”</td>
<td>C Crowther, P Ashwood</td>
<td>2010</td>
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<tr>
<td>Sally Reid</td>
<td>“Treatments during pregnancy for women with hypothyroidism: a Cochrane review”</td>
<td>P Middleton, C Crowther</td>
<td>2010</td>
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<tr>
<td>Joanna Tieu</td>
<td>“Screening and subsequent management for gestational diabetes for improving maternal and infant health – A Cochrane review”</td>
<td>C Crowther, P Middleton</td>
<td>2010</td>
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<tr>
<td>Shanshan Han</td>
<td>Cochrane Review Updates</td>
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<td>2010</td>
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<td></td>
<td>“Magnesium maintenance therapy for preventing preterm birth after threatened preterm labour”</td>
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<td></td>
<td>“Hospitalisation and bed rest in multiple pregnancy”</td>
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<td></td>
<td>“Thyrotropin-releasing hormone added to corticosteroids for women at risk of preterm birth for preventing neonatal respiratory disease”</td>
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## Honours Students

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<th>Name</th>
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<tbody>
<tr>
<td>Gosia Smzeja</td>
<td>&quot;Use of an informational DVD to limit weight gain for women who are overweight or obese in pregnancy: a randomised trial&quot;</td>
<td>J Dodd, R Grivell</td>
<td>2009 - 2010</td>
</tr>
<tr>
<td>Lavern Kannieappan</td>
<td>&quot;Maternal body composition in overweight and obese pregnant women&quot;</td>
<td>J Dodd, R Grivell</td>
<td>2010</td>
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<tr>
<td>Izyan Mahomad</td>
<td>&quot;Overweight and obesity in pregnancy and neonatal body composition&quot;</td>
<td>J Dodd, R Grivell</td>
<td>2010</td>
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## Graduate Students – PhD

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<th>Name</th>
<th>Title</th>
<th>Supervisor(s)</th>
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<tbody>
<tr>
<td>Allan Cyna</td>
<td>&quot;Hypnosis antenatal training for childbirth&quot;</td>
<td>J Robinson, C Crowther</td>
<td>2004 – 2010</td>
</tr>
<tr>
<td>Philippa Middleton</td>
<td>&quot;Contribution of Australian maternal and perinatal trials to health outcomes&quot;</td>
<td>C Crowther, S Green</td>
<td>2008 – 2011</td>
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<tr>
<td>Rosalie Grivell</td>
<td>&quot;The effect of obesity and gestational weight gain on fetal growth&quot;</td>
<td>J Dodd, C Crowther</td>
<td>2008 – 2010</td>
</tr>
<tr>
<td>Shanshan Han</td>
<td>&quot;Research synthesis and clinical studies assessing the effects of diet and lifestyle on pregnancy outcomes for women with glucose impairment&quot;</td>
<td>C Crowther, P Middleton</td>
<td>2010 – 2012</td>
</tr>
<tr>
<td>Zhixian Sui</td>
<td>&quot;Effect of exercise on limiting weight gain for women who are overweight or obese in pregnancy&quot;</td>
<td>J Dodd, C Crowther</td>
<td>2010 - 2012</td>
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## Postdoctoral Fellows

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<tr>
<th>Name</th>
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<tbody>
<tr>
<td>Ning Pan</td>
<td>&quot;Pregnancy and Childbirth Cochrane Reviews&quot;</td>
<td>2009 – 2010</td>
</tr>
<tr>
<td>ARCH Executive</td>
<td>Rachel Earl</td>
<td>Nogol Salehi</td>
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<tr>
<td>Professor Caroline Crowther [Director]</td>
<td>Melissa Ewens</td>
<td>*Judith Beaumont</td>
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<tr>
<td>Professor Jodie Dodd [Co-Director]</td>
<td>Freya Goodhew</td>
<td>*Danielle Beaumont</td>
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<tr>
<td>Philippa Middleton [Co-Director]</td>
<td>Danielle Crosby</td>
<td>Caroline Sheppard</td>
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<tr>
<td>Tanya Bubner [Manager]</td>
<td>Lucy Simmonds</td>
<td>Kirsten Ball</td>
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<tr>
<td>Research Group Leaders</td>
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<tr>
<td>Professor Caroline Crowther</td>
<td>Dr Sally Reid</td>
<td>Laura Tisato</td>
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<td>Professor Jodie Dodd</td>
<td>Debby Utama</td>
<td>Sophie Paleologos</td>
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<td>Professor Alastair MacLennan</td>
<td>Joanna Tieu</td>
<td>Jessica Reid</td>
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<td>Philippa Middleton</td>
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<td>Annie Di Frances</td>
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<td>E/Professor Jeffrey Robinson</td>
<td>Amanda Poprzezczyn</td>
<td>Greg Beaumont</td>
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<td>Dr Rosalie Grivell</td>
<td>Thuy-My Nguyen</td>
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<td>A/Professor William Hague</td>
<td>Kristin Hsu</td>
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<td>Dr Chad Andersen</td>
<td>Dr Asha Short</td>
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<tr>
<td>A/Professor Ross Haslam</td>
<td>Dr Nicole Dreyer</td>
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<tr>
<td>Dr Andrew McPhee</td>
<td>Dr Aimee Reilley</td>
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<tr>
<td>A/Professor Dominic Wilkinson</td>
<td>Dr Ria Kianataski</td>
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<tr>
<td>Visiting Research Fellows</td>
<td>Dr Nicola Denton</td>
<td>Shanshan Han</td>
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<tr>
<td>Dr Alice Rumbold</td>
<td>Dr Casie Staehler</td>
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<td>Dr Carmel Collins</td>
<td>Dr Lufee Wong</td>
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<td>Ruth Martis</td>
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<td>Senior Trial Coordinators</td>
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<td>Pat Ashwood</td>
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<td>Andrea Deussen</td>
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<td>Data Management</td>
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<td>Vincent Ball</td>
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<td>Sasha Zhang</td>
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<td>Carol Holst</td>
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<td>Kaye Robinson</td>
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<td>Statistical Support</td>
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<tr>
<td>Dr Helena Oakey</td>
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<tr>
<td>*Kristyn Willson</td>
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<tr>
<td>Research Fellows</td>
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<tr>
<td>Dr Ning Pan</td>
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<tr>
<td>*Dr Emer Heatley</td>
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<tr>
<td>Research Officers</td>
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</table>
### South Australian Collaborators

**School of Population Health and Clinical Practice**
- Professor Janet Hiller
- A/Professor Vivienne Moore
- Professor John Lynch

**School of Medicine**
- Professor Gary Wittert

**School of Psychology**
- Professor Deborah Turnbull
- Faculty of Health Sciences
- Professor Justin Beilby
- Women’s and Children’s Hospital, CYWHS
- Dr Bill Artonas
- A/Professor Peter Baghurst
- Professor Jenny Couper
- Karen Glover
- Professor Eric Haan
- Dr James Harvey
- Neil Hotham
- A/Professor Yee Khong
- Dr Geoff Matthews
- Gail Monds
- Dr Mark Morton
- Dr Peter Muller
- Dr Sally Reid
- Allison Rogers
- Dr John Svigos
- Dr Brian Wheatley
- Dr Chris Wilkinson
- Dr Lufee Wong
- Dr Sui Yu

### Lyell McEwin Health Service
- Professor Gus Dekker
- Dr Andrew Grieve
- Dr William Jeffries
- Dr Susan Kennedy-Andrews
- Dr Alphonse Roex

### Flinders Medical Centre
- Professor Robert Bryce
- Dr Jay McGavigan

### Gawler Women’s Hospital
- Dr Faisal Chenia

### Child Nutrition Research Centre
- Dr Carmel Collins
- Professor Maria Makrides
- Dr Jo Zhou

### Flinders University
- Trudi Mannix
- Professor Julia Ratcliffe

### SA Department of Health: Pregnancy Outcomes Unit
- A/Professor Annabelle Chan
- Dr Wendy Scheil

### Interstate (Affiliates)
- Dr Lisa Askie, University of Sydney, NSW
- Dr Jenny Bowen, Royal North Shore Hospital, NSW
- A/Professor Stephanie Brown, Murdoch Institute, VIC
- Dr Fiona Brownfoot, University of Melbourne, VIC
- A/Professor Robert Cincotta, Mater Mothers’ Hospital, QLD
- Peter Coxeter, Mater Mothers’ Hospital, Brisbane, QLD
- A/Professor Peter Davis, University of Melbourne, VIC
- Dr Greg Davis, St George Hospital, Sydney, NSW
- Dr Amanda Dennis, The Launceston General Hospital, TAS
- Dr Tony DePaoli, The Royal Hobart Hospital, TAS
- A/Professor Jan Dickinson, University of Western Australia, WA
- Professor David Ellwood, Canberra Hospital, ACT
- A/Professor Vicki Flenady, Mater Health Services, QLD
- Dr Jann Foster, Royal Prince Alfred Hospital, NSW
- Dr Bob Fonseca, St George Hospital, Sydney, NSW
- Dr Glenn Gardener, Mater Mothers’ Hospital, Brisbane, QLD
- Dr John Gavranich, Ipswich Hospital, QLD
- Dr Adrienne Gordon, Royal Prince Alfred Hospital, Sydney, NSW
- A/Professor Vivienne Moore, Peter Coxeter, Mater Mothers’ Hospital, Brisbane, QLD
- A/Professor Eric Green, The Townsville Hospital, QLD
- Professor Sally Green, Australasian Cochrane Centre, Monash University, VIC
- Dr Ash Hanafy, Gold Coast Hospital, QLD
- Dr Glenda Hawley, Mater Health Services, QLD
- E/Professor David Henderson-Smart, University of Sydney, NSW
- Professor Caroline Homer, University of Technology Sydney, NSW
- Dr Dell Horey, La Trobe University, VIC
- Professor Jon Hyett, Royal Prince Alfred Hospital, NSW
- Dr Michelle Kealy, La Trobe University, VIC
- Dr Rebecca Kimble, The Royal Brisbane and Women’s Hospital, QLD
- Dr Guan Koh, The Townsville Hospital, QLD
- Laura Koopmans, Mater Medical Research Institute, Brisbane, QLD
- Professor Louise Kornman, The Royal Women’s Hospital, Melbourne, VIC
- Dr Bessy Lampropoulos, The Nepean Hospital, NSW
- Dr Carl Kuschel, The Royal Women’s Hospital, Melbourne, VIC
- A/Professor Kassam Mahomed, Ipswich Hospital, QLD
- Sarah McIntyre, University of Sydney, NSW
- Professor Jonathan Morris, Royal North Shore Hospital, NSW
- Dr Ju Lee Oei, The Royal Hospital for Women, Sydney, NSW
- A/Professor David Osborn, Royal Prince Alfred Hospital, NSW
- Claire Parker, King Edward Memorial Hospital, WA
- Professor Michael Peel, The Nepean Hospital, NSW
- Dr Di Poad, The Mater Hospital, Brisbane, QLD
- Dr Carol Portmann, Royal Brisbane & Women’s Hospital, QLD
- Dr Stephen Raymond, The Royal Hobart Hospital, TAS
- A/Professor Christine Roberts, University of Sydney, NSW
- Dr Penny Sheehan, The Royal Hospital for Women, Sydney, QLD
- A/Professor David Osborn, Royal Prince Alfred Hospital, NSW
- Claire Parker, King Edward Memorial Hospital, WA
- Professor Michael Peel, The Nepean Hospital, NSW
- Dr Di Poad, The Mater Hospital, Brisbane, QLD
- Dr Carol Portmann, Royal Brisbane & Women’s Hospital, QLD
- Dr Stephen Raymond, The Royal Hobart Hospital, TAS
International (Affiliates)

Dr Fariba Aghajafari, University of Calgary, CANADA
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Dr Jane Alsweiler, The University of Auckland, NEW ZEALAND
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Professor Ana Bianchi, Uruguay, SOUTH AMERICA
Professor Alan Bocking, The University of Toronto, CANADA
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Dr Richard Brown, Royal Victoria Hospital, McGill University, Montreal, CANADA
Professor Zulfiquar Bhutta, Aga Khan University, Karachi, PAKISTAN
Professor Alan Cameron, Nuffield Health, Glasgow Hospital, UK
Dr Bruno Carbone, Hospital St-Antoine, Paris, FRANCE
Sir Iain Chalmers, James Lind Initiative, UK
Professor Leila Duley, Institute of Health Sciences, UK
Professor Sourabh Dutta, Postgraduate Institute of Medical Education and Research, Chandigarh, INDIA
Professor Jan Jaap Erwich, University of Groningen, Utrecht, NETHERLANDS
Professor Mario Festin, Institute of Clinical Epidemiology National Institutes of Health, University of The Philippines, Manila, PHILIPPINES
Professor J Frederik Fæn, Norwegian Institute of Public Health, Oslo, NORWAY
Professor Alain Gagnon, University of British Columbia, Vancouver, CANADA
E/Professor Tom Garite, University of California, USA
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Professor Mikko Hallman, University of Oulu, FINLAND
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Professor Mary Hannah, Mother’s & Infant’s Research Institute, University of Toronto, CANADA
Professor Jane Harding, Liggins Institute, The University of Auckland, NEW ZEALAND
Dr Christopher Harman, University of Maryland Medical Centre, Baltimore, USA
Professor Martin Häusler, Institute for Obstetrical and Gynaecological Ultrasound, Graz, AUSTRIA
Dr Rubina Khan, King Faisal Specialist Hospital and Research Centre, Riyadh, SAUDI ARABIA
Dr Venu Kain, University of Edmonton, CANADA
Frances Kellie, The University of Liverpool, UK
Professor Mark Kilby, Birmingham Women’s Hospital, UK
Professor John Kingdom, The University of Toronto, Mt Sinai Hospital, CANADA
Professor Torvid Kiserud, Haukeland University Hospital, Bergen, NORWAY
Dr Zohra Lassi, Aga Khan University, Karachi, PAKISTAN
Professor Debbie Lawlor, University of Bristol, UK
Dr Joy Lawn, Saving Newborn Lives, Cape Town, SOUTH AFRICA
Dr Catherine Leveque, University of Rouen, FRANCE
Dr Gary Loy, University of Illinois College of Medicine, Chicago, USA
Professor Pisake Lumbiganon, Khon Kaen University, THAILAND
Professor Giancarlo Mari, Centre for High Risk Pregnancies, Baptist Women’s Hospital, Memphis, USA
Professor Loïc Marpeau, Rouen Institute, FRANCE
Professor Stéphane Marret, University of Rouen, FRANCE
Ms Kimberley Maurel, Pediatric Medical Group, USA
ARCH has extensive collaborations with researchers throughout the world.
ARCH Publications 2010

Journal Articles


22. Dodd JM, Crowther CA. Misoprostol for induction of labour to terminate pregnancy in the second or third trimester for women with a fetal anomaly or after intrauterine fetal death. Cochrane Database Syst Rev. 2010, Issue 4. Art. no.: CD004901. DOI:10.1002/14651858.CD004901.pub2. (IF:5.653; ERA A*).


70. Short J, McDonald S, Turner T, Martis R, SEA-ORCHID Study Group, (including Crowther CA). Improving capacity for evidence-based practice in South East Asia: evaluating the role of research fellowships in the SEA-ORCHID Project. BMC Medical Education. 2010;10:3. (ERA A).

71. Smith CA, Crowther CA, Petrucco O, Beilby J. Acupuncture to treat primary dysmenorrhea in women: a randomized controlled trial. Evid-Based Compl Alt. 2010;eCAM Advance Access published online on January 27, 2010 (IF:2.064; ERA A).


Books, Chapters and Guidelines


2009
Journal articles


Books, Chapters and Guidelines

49. Middleton PF, for the SHRP team. Preventing infant mortality among Aboriginal and teenage women in South Australia, 2009.

ABSTRACTS OF PRESENTATIONS GIVEN BY ARCH MEMBERS AT PSANZ 2009-2010

Members of ARCH presented the following key research findings at the Perinatal Society of Australia and New Zealand (PSANZ) in 2010 at the 14th Annual Congress, 28-31 March 2010, Wellington, New Zealand


Members of ARCH presented the following key research findings at the Perinatal Society of Australia and New Zealand (PSANZ) in 2009 at the 13th Annual Congress, 19-22 April 2009, Darwin.


WEBSITE AND MEDIA

The ARCH website contains information on the aims and mission of ARCH and each research division. There is also information for students on various study options available and another area for media releases. The ARCH website can be found at www.adelaide.edu.au/arch.

Media for 2009 – 2010 include:

- Magnesium sulphate link to prevention of cerebral palsy – CP Foundation December 2010
- Life impact - $45 million for new research – The Adelaideran December 2010
- Cancer fear leads to dangerous remedy – The Advertiser 27 October 2010
- Research linking HRT to cancer ‘flawed’ – The Age 24 October 2010
- Treatment promises to curb cerebral palsy rate – The West Australian 1 September 2010
- New strategy to reduce cerebral palsy – Australian Doctor 6 August 2010
- New Hope for cerebral palsy prevention – Adelaide Uni Media Release 2 August 2010
- More cerebral palsy risks found – Science Alert 2 August 2010
- Plan to prevent cerebral palsy at birth – The Sydney Morning Herald 30 March 2010
- New jab to beat cerebral palsy – The Advertiser 25 March 2010
- New clinical guidelines to prevent cerebral palsy – Adelaide Uni Media Release 24 March 2010
- New clinical guidelines to prevent cerebral palsy – South Australian Policy Online 24 March 2010
- Magnesium protects foetuses – Science Alert 24 March 2010
- Obesity in pregnancy – a growing problem in Australia – RANZCOG 24 March 2010
- Robinson Foundation launch at Government House – Adelaide Uni Media Release 15 February 2010
- New clinical guidelines to prevent cerebral palsy – i2P information to pharmacists 12 January 2010
- Launch of Adelaide’s newest medical foundation – Adelaide Uni Media Release 8 January 2010
- World first study helps new mums – Vital Research for a Vital Australia 2010
- Improving the odds for preterm babies – Vital Research for a Vital Australia 2010
- Adelaide Uni wins 78% of State health funding – Adelaide Uni Media Release, 30 October 2009
- Weighty problem for new mums – The Advertiser, 19 October 2009
- Showgoers support cerebral palsy research – Adelaide Uni Media Release, 7 September 2009
- Adelaide researchers dominate science awards – Adelaide Uni Media Release, 21 August 2009
- Non-drug comfort for children having operations – Adelaide Uni Media Release, 13 July 2009
- School students get cheeky for cerebral palsy research – Adelaide Uni Media Release, 2 March 2009
- Schools rally to uni’s call – The Advertiser, 2 March 2009
- Magnesium prevents cerebral palsy – Medical Observer 30 January 2009
- Magnesium sulphate protects babies against cerebral palsy – Adelaide Uni Media Release, 21 January 2009
- More can be done to prevent lung disease in SE-Asian babies – Virtual Medical Centre.com – 8 January 2009
Grants

New funding to commence 2011

NHMRC Project Grant - $632,979. 2011-2014

“Dietary and lifestyle advice and treatment of women with Borderline Gestational Diabetes: The IDEAL Randomised Controlled Trial.”

Chief Investigators: C Crowther, B Hague, P Middleton, P Baghurst, J Robinson.

NHMRC Project Grant - $447,281. 2011-2013

“Prenatal Repeat Corticosteroids in women at risk of preterm birth for improving neonatal health.”

Chief Investigators: C Crowther, L Askie, H Oakey, P Middleton.

NHMRC Project Grant - $832,928. 2011-2013

“Immediate delivery vs expectant care in women with preterm prelabour rupture of the membranes close to term – A randomised clinical trial (PPROMT).”

Chief Investigators: J Morris, C Roberts, J Ford, J Bowen, S Buchanan, S Lain, AI: C Crowther

NHMRC Project Grant - $2,179,916. 2011-2015

“SEA-URCHIN: South East Asia – Using research for change in hospital-acquired infection in neonates”

Chief Investigators: S Green, H Jeffrey, S McDonald, M Lahra, M Laopaiboon, J McKenzie, P Lumbiganon, AI: C Crowther

Cerebral Palsy Institute/Foundation, NSW - $600,000. 2011 - 2013.

“Special Initiative and Infrastructure Grant”

Chief Investigator: A MacLennan.

Cerebral Palsy Institute/Foundation, NSW - $274,998. 2011 - 2013.

“WISH Project (Working to Improve Survival and Health for babies born very preterm)”

Chief Investigators: C Crowther, P Middleton, V Flenady, J Morris

Channel 7 Children’s Research Foundation - $50,000. 2011

“Do maternal and infant obesity related genotypes influence efficacy of interventions to limit weight gain in obese pregnant women and obesity in their offspring?”

Chief Investigators: J Robinson, J Dodd, J Owens.

Women’s and Children’s Hospital Foundation Research Project Grant - $50,000. 2011

“Are genomic copy number variations associated with cerebral palsy?

Chief Investigators: C Gibson, A MacLennan, G McMichael
NHMRC National Health & Medical Research Council (NHMRC) Grants

NHMRC Project Grant - $901,600. 2010 - 2012
“Vaginal progesterone for the prevention of neonatal respiratory distress syndrome - a randomised controlled trial.”
Chief Investigators: C Crowther, J Dodd, A McPhee, V Flenady.

NHMRC Project Grant - $433,750. 2010 - 2012
“Fetal middle cerebral artery Doppler to time second and subsequent transfusions for women with red cell alloimmunisation.”
Chief Investigators: J Dodd, J Dickinson, C Andersen, R Windrim, G Ryan

NHMRC Project Grant - $268,751. 2010 - 2011
“Magnesium sulphate given to women at risk of preterm birth for neuroprotection of the fetus - an individual patient data review.”
Chief Investigators: C Crowther, L Doyle, P Middleton, H Oakey, L Askie.

NHMRC Equipment Grant - $33,000. 2010
“Establishment of a biobank and cryogenic storage facility to evaluate mechanistic pathways following interventions during pregnancy to improve maternal, infant and childhood health.”
Chief Investigators: JM Dodd, JA Owens, JS Robinson, CA Crowther, JB Pitcher, AH MacLennan

NHMRC Project Grant - $1,674,250. 2009 – 2013
“Child health at two years’ corrected age after exposure to dexamethasone or betamethasone: a randomised trial.”
Chief Investigators: C Crowther, J Harding, P Middleton, C Andersen, J Robinson.

NHMRC Project Grant - $1,746,788. 2009 - 2012
“Can better clinical practice lower the rates of sexually transmitted infections in remote Aboriginal communities?”

NHMRC Project Grant - $674,250. 2008 - 2012
“The MiG study: mothers and their offspring at 2 and 5 years: body composition, insulin resistance and development”.

NHMRC Project Grant - $1,466,625. 2008 – 2011
“Limiting weight gain in overweight or obese women during pregnancy to improve health outcomes: a randomised trial.”
Chief Investigators: J Dodd, D Turnbull, A McPhee, G Wittert, J Robinson.

“Early School-Age outcomes after exposure to repeat prenatal corticosteroids – a randomised controlled trial.”

Chief Investigators: C Crowther, L Doyle, P Anderson, R Haslam, J Robinson.

NHMRC Project Grant - $1,307,023. 2007 – 2010

“A population based survey of recent mothers in South Australia and Victoria”.

Chief Investigators: S Brown, J Yelland, J Robinson, P Baghurst.

NHMRC Enabling Grant to promote & support clinical trials- $1,140,000. 2005 – 2010

“Women and Babies’ Health & Wellbeing: Action Through Trials Collaboration (WOMBAT)”

Chief Investigators: C Crowther, L Doyle, V Flenady, C Roberts, J Lumley.

Other Competitive Research Grants

Cerebral Palsy Institute/Foundation, NSW - $146,000. 2010 - 2011.

“A genomic basis for Cerebral Palsy-Studies on a large Australian cohort”

Chief Investigator: A MacLennan.

Channel 7 Children’s Research Foundation and Ramaciotti Foundation Grants - $65,000 and $50,000. 2010

“Do maternal and infant obesity related genotypes influence efficacy of interventions to limit weight gain in obese pregnant women and obesity in their offspring?”

Chief Investigators: J Robinson, J Dodd, J Owens.

Department of Health and Ageing - $180,000. 2009 - 2011

“Australian institutions or networks providing support to Cochrane reviewers with respect to methodology, reviewer support or training”.

Chief Investigators: C Crowther, J Dodd, V Flenady, P Middleton.

Channel 7 Children’s Research Foundation - $70,000. 2009 – 2010.

“A randomised trial to limit weight gain in overweight women during pregnancy: Effects on fetal growth”

Chief Investigators: R Grivell, J Dodd, C Crowther

NIH (USA) - $1,313,377. 2008 - 2012

“Limiting weight gain in overweight pregnant women – effects on mother and child (LIMIT study).”


“The Thrombophilia in Pregnancy Prevention Study(TIPPS): Australian Arm”.

Chief Investigators: M Rodger, W Hague
Making a meaningful difference for women and babies

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