

Maternal and Infant Health

Group Lead: Professor Christine MacArthur (</staff/profiles/haps/PublicHealthEpidemiologyBiostatistics/macarthur-christine.aspx>)

Overview

The research group undertakes studies on research questions that impact upon public health services and on clinical practice in maternal and infant health using high quality designs to provide best evidence. Collaborative working with maternity service providers is an emphasis in studies.

The group undertakes studies on research questions that impact upon public health services and on clinical practice in maternal and child health, emphasising high quality designs.

Our research group

The programme of work of the research group aims to improve the health and care of women and infants during and after pregnancy and birth. It includes cohort studies to establish risk factors, randomised controlled trials to test potentially effective interventions, systematic reviews and qualitative research. These studies are within a variety of topic areas, including childbirth related health problems, antenatal and postnatal care, maternity care in deprived populations, use of lay workers, postnatal depression, urinary and faecal incontinence, breastfeeding and maternity care and health in the developing world.

We aim

- to undertake high quality research generated by the team through identifying gaps in the evidence
- to assist in the evaluation of service delivery through consultations with health commissioners and providers – in this capacity we are involved in NIHR Collaborations for Leadership in Applied Health Research and Care (CLAHRC) Birmingham and the Black Country 2009-2013 and CLAHRC West Midlands 2014-2019
- to facilitate the incorporation of research based evidence (and where evidence is lacking, examples of good practice) into commissioning, delivery and monitoring of maternity services.

Current projects...

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These include:

- Evaluation of lay support in pregnancy (ELSIPS): a randomised controlled trial to improve antenatal attendance and reduce postnatal depression (NIHR CLAHRC-BBC).
- Birmingham study of obstetric triage: development phase (NIHR CLAHRC-BBC and CLAHRC-WM).
- Evaluation of a caseload homebirth service (NIHR CLAHRC-WM).
- Cohort study of effects of early hospital discharge after birth (NIHR CLAHRC-WM).
- A longitudinal study of childbirth related pelvic floor disorders (NIHR CLAHRC-WM).
- A randomised controlled trial of the effects of maternal position with epidural in 2nd stage labour (NIHR HTA).
- A longitudinal study of pelvic floor disorders in relation to childbirth (Wellbeing of Women).
- A randomised controlled trial of the prevention of pelvic organ prolapse after childbirth (Wellbeing of Women).
- Exercise intervention to reduce postnatal depression: a randomised controlled trial (NIHR PCCS).
- A population based study of pelvic floor disorders in rural Pakistan (Aga Khan Foundation).
- Australian Pregnancy cohort study (NHMRC)
- Multivariate meta-analysis of multiple correlated outcomes: development and application of methods, with empirical investigation of clinical impact (MRC).
- Maternal, Newborn and Infant Clinical Outcome Review Programme (Health Quality Improvement Partnership).

Many of these projects are collaborations with colleagues in other Schools in University of Birmingham and in other UK and international universities. This is not an exclusive list.

Recent publications...

Prost A, Colbourn T, Seward N, Azad K, Coomarasamy A, Copas A, Houweling TA, Fottrell E, Kuddus A, Lewycka S, MacArthur C, et al. (2013). Women's groups practising participatory learning and action to improve maternal and newborn health in low-resource settings: a systematic review and meta-analysis. *The Lancet* May 18;381(9879):1736-1746.

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Jolly K, Ingram L, Khan K, Deeks J, Freemantle N, MacArthur C. (2012). Systematic review of peer support for breastfeeding continuation: meta-regression analysis of the effect of setting, intensity, and timing. *BMJ* 344:d8287 doi: 10.1136/bmj.d8287.

Wilson A, Gallos ID, Plana N, Lissauer D, Khan KS, Zamora J, MacArthur C, Coomarasamy A. (2011). Effectiveness of strategies incorporating training and support of traditional birth attendants on perinatal and maternal mortality: meta-analysis. *BMJ* 343:d7102 doi: 10.1136/bmj.d7102.

MacArthur C, Glazener C, Lancashire RJ, Herbison P, Wilson D. (2011). Exclusive caesarean section delivery and subsequent urinary and faecal incontinence: a 12 year longitudinal study. *BJOG An International Journal of Obstetrics & Gynaecology* 118(8):1000-7. DOI 10.1111/j1471-0528.2011.02964.x

Staff...

PI(s): **Professor Christine MacArthur** (</staff/profiles/haps/PublicHealthEpidemiologyBiostatistics/macarthur-christine.aspx>), **Dr Kate Jolly** (</staff/profiles/haps/PublicHealthEpidemiologyBiostatistics/jolly-kate.aspx>), **Dr Sara Kenyon** (</staff/profiles/haps/PublicHealthEpidemiologyBiostatistics/kenyon-sara.aspx>).

Dr Amanda Daley (<http://www.birmingham.ac.uk/staff/profiles/haps/PrimaryCareClinicalSciences/daley-amanda.aspx>), **Dr Semira Manaseki-Holland** (<http://www.birmingham.ac.uk/staff/profiles/haps/PublicHealthEpidemiologyBiostatistics/manaseki-holland-semira.aspx>)

We also collaborate with PIs primarily in other research themes including **Tracey Roberts** (<http://www.birmingham.ac.uk/staff/profiles/haps/HealthEconomics/roberts-tracy.aspx>) (Health economics), Jane Daniels, Lee Middleton (Clinical trials)

Research and support staff: **Robert Lancashire** (<http://www.birmingham.ac.uk/staff/profiles/haps/PublicHealthEpidemiologyBiostatistics/lancashire-robert.aspx>), Rebecca Taylor, Emma Broglia, **Anne Walker** (<mailto:a.walker@bham.ac.uk>)

Students: Ruth Blamey, Lucy Ingram, Sara Webb, Amie Wilson

Related research...



Members of the Mother and Child Epidemiology team undertook research with a range of study designs on a variety of topic areas, including childbirth related health problems, postnatal care, maternity care in deprived populations, postnatal depression, urinary and faecal incontinence, breastfeeding support, smoking in pregnancy and maternity care in the developing world. Randomised controlled trials evaluating interventions, such as low dose epidural techniques, redesigned postnatal care, breastfeeding peer support and traditional birth attendants in Pakistan have been completed, as well as large-scale observational studies with record linkage and cohort studies.

We aimed to:

facilitate the incorporation of research based evidence (and where evidence is lacking, examples of good practice) into commissioning, delivery and monitoring of maternity services in the West Midlands.

undertake high quality research generated by the team identifying the gaps in the evidence; and from consultations with health commissioners and providers, to assist in the evaluation of service delivery.

The team:

Professor Christine MacArthur is a leading expert on childbirth-related health and postnatal care research and contributed to the postbirth NSF.

Dr Sara Kenyon (<http://www.birmingham.ac.uk/staff/profiles/haps/PublicHealthEpidemiologyBiostatistics/kenyon-sara.aspx>) is a maternity researcher with experience of quantitative and qualitative research.

Elaine Kidney (<mailto:e.kidney@bham.ac.uk>), Research Disseminator

Relevant publications:

In press

Wilson A, Gallos I, Planar N, Lissauer D, Khan K, Zamora J, MacArthur C, Coomarasamy A, (in press). Effectiveness of strategies incorporating training and support of traditional birth attendants on perinatal and maternal mortality: A meta-analysis, BMJ.

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and without epidural) and a non-epidural comparison group. *Anaesthesia* 65(2):145-153 Epub 2009 Nov 12.

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