

The Aberdeen Maternity and Neonatal Databank (AMND) Update

As one of the earliest and most comprehensive obstetric databases, the AMND continues to contribute significantly to research. The data entry has been completed up to August 2014 (as of December last year). The AMND steering committee has been in dialogue with NHS Grampian to identify ways of obtaining electronic data which is anticipated to help speed up the data entry process. This has now become imperative because NHS Grampian plan to move to a completely electronic system this year.

Ensuring that the AMND is well known by researchers and the general public is important in order to maximize its potential. As part of this goal, Dr Sohinee Bhattacharya attended Newcastle University's Applied Epidemiology Research Day to talk about the AMND. Sohinee's talk entitled "Maternal Obesity: What can a 65 year old Obstetric Database tell us?" paved the way for several collaborative projects with the Applied Epidemiology group of Newcastle University.

In terms of public engagement, we had a stall for the AMND on the last day of the May Festival 2016. This year we plan to have a stall for all three days, from the 26th to the 28th of May. We hope to make the AMND stall this year's May Festival even more interactive and we would welcome your suggestions.



Some representatives of the AMND at May Festival 2016

Congratulations to Dr Mairead Black

The year 2016 was a year of many celebrations for Dr Mairead Black—a longstanding member of our steering committee. In May, she successfully defended her PhD. A few months later, she was appointed as Clinical Senior Lecturer in Obstetrics. Shortly after, in November, she delivered a baby girl, Lauren Annie Milburn. Mairead is currently on maternity leave. We congratulate Mairead and her family.



Baby Lauren Annie Milburn Black

Goodbye and Welcome



Nicola MacKay

Diane Fleming resigned from the AMND Steering Committee in March 2016 after over 5 years of serving on the Steering Committee. We would like to use this opportunity to thank Diane for her commitment to the AMND over the years.

We will also say goodbye to Dr Abimbola Ayorinde, author of this newsletter and Research Fellow, AMND. Abi leaves the University at the end of February 2017 to take up a position at Warwick University. We will miss her but wish her well in her future career. Keep in touch, Abi!

We welcome two new members to the AMND Steering committee; Lesley Johnston, a retired Sister from the Aberdeen Fertility Center and Nicola MacKay, a Practice Educator/Midwife with NHS Grampian. Lesley and Nicola are serving as lay member and midwife representatives respectively. We also welcome back Vladimira Beggs, one of our Data Entry Clerks, who returned to work after her maternity leave.



Lesley Johnston

Student's Corner

We had two intercalating BMedSci students again this year. Katie Prince and Thomas Mutungi, completed their research project for BSc (Hons) in Medical Sciences with the AMND. Katie and Thomas are currently in the final year of their medical degree.

"...I can only imagine what advances the AMND will contribute to in the future,"

"During the 2015-16 academic year, I had the privilege of working within the Dugald Baird Centre and of utilising some of the immense wealth of information stored within the AMND. Working within both the fields of Obstetrics and Endocrinology, we strove to link historical study data of women's gestational glucose tolerance with their current diabetes status. Using this invaluable resource, we were able to identify key maternal features predisposing to future diabetes development.

While the risk of Type 2 diabetes following gestational diabetes has been well established, the risk for normoglycaemic women such as those found within our

work had not. It is hoped that with these novel findings, which without the AMND would not have been possible, awareness can be raised within the medical community by the upcoming Diabetes UK Professional conference and future publication.

This experience has given me the opportunity to see first-hand how such a uniquely comprehensive databank can enable insight into the ever-evolving risks to maternal health. Having now reached the final year of my medical studies, and with my enthusiasm for maternofetal medicine only increased, I can only imagine what advances the AMND will contribute to in the future.



Katie Prince

- Katie Prince

Researcher's Report

Over the years researchers from various levels and disciplines have been able to utilise the AMND. Below is a short report from one of the researchers currently using data from the AMND, Dr Sarah Murray is a Medical Doctor who is currently in her second year of a Wellcome Trust funded PhD Studentship at the University of Edinburgh.



Sarah Murray

"Twin pregnancies are high risk pregnancies and despite contributing to only 3% of all live births they account for a substantial amount of special care baby unit admissions, neonatal deaths and stillbirths.

In recent years the rate of twin pregnancy has been increasing mainly due to assisted reproduction techniques. Optimising the timing of delivery of twins is a key strategy in reducing this increased risk of perinatal morbidity and

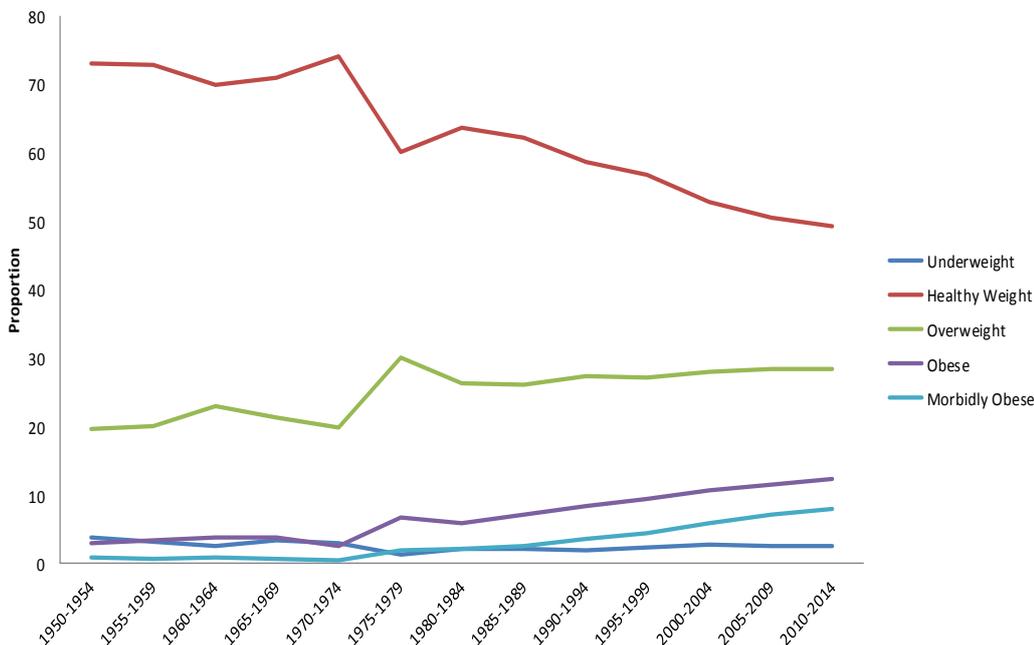
mortality. Using routinely collected data from the AMND a cohort of all twins in the Grampian area was created to look at pregnancy outcomes based on the gestational age at delivery. The AMND holds one of the oldest routinely collected healthcare records with twins in the database dating back to 1950. The outcomes specifically looked at were stillbirth and neonatal death and outcomes were analysed according to chorionicity. By using statistical modeling techniques the data was used to determine the prospective risk of stillbirth and neonatal death for each week of gestation from 34 weeks."

-Dr Sarah Murray

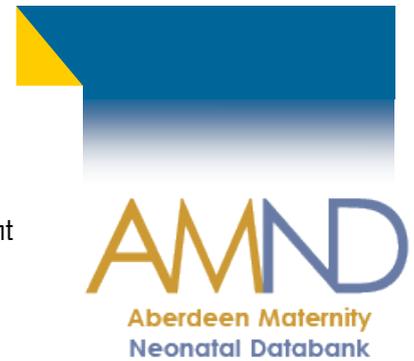
"The AMND holds one of the oldest routinely collected healthcare records with twins....."

Interesting Trends

Access to retrospective data in the AMND helps to monitor secular trends in Obstetrics. In this issue of the Newsletter we would like to present trends in body mass index (BMI) from 1950 to 2014 (shown graphically below). From the graph it can be seen that the proportion of women with healthy weight during booking has gradually decreased while those who are overweight, obese and morbidly obese is rising. The proportion of underweight women remained steady. This highlights the increasing prevalence of obesity in pregnancy.



Trends in body mass index: The classification of women based on their body mass index at booking from 1950 to 2014



Approved applications for release of data

Chief Investigator: Dr Marius Lahti, University of Edinburgh

Project Title: Maternal pre-pregnancy obesity and intergenerational transmission of birth weight

Chief Investigator: Mr Anthony Chapman, University of Aberdeen

Project Title: Antenatal origins of chronic disease – Linking antenatal fetal size to chronic disease outcomes in children and young adults

Chief Investigator: Prof Rebecca Reynolds, University of Edinburgh

Project Title: Maternal Pre-Pregnancy Obesity and Mental Disorders in the Offspring

Chief Investigator: Dr Peter Danielian, NHS Grampian

Project Title: 5 year audit/review of outcomes of multiple pregnancy in Aberdeen Maternity Hospital

Chief Investigator: Dr Abimbola Ayorinde, University of Aberdeen

Project Title: Antenatal Corticosteroids for Reducing Neonatal Morbidity in Twin Pregnancies at Risk of Preterm Delivery

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AMND related publications

Below is a list of the most recent publications related to the AMND. More publications are available on the AMND website (www.abdn.ac.uk/amnd)

1. Aris IM, Logan S, Lim C, Choolani M, Biswas A, Bhattacharya S. Preterm prelabour rupture of membranes: a retrospective cohort study of association with adverse outcome in subsequent pregnancy. *BJOG* 2016; DOI: 10.1111/1471-0528.14462.
 2. Cheong-See Fiona, Schuit Ewoud, Arroyo-Manzano David, Khalil Asma, Barrett Jon, Joseph K S et al. Prospective risk of stillbirth and neonatal complications in twin pregnancies: systematic review and meta-analysis *BMJ* 2016; 354 :i4353
 3. Bhattacharya S, McNeill G, Raja EA, Allan K, Clark H, Reynolds RM, Norman JE, Hannaford PC (2016). Maternal gestational weight gain and offspring's risk of cardiovascular disease and mortality. *Heart*; 0:1–8. doi:10.1136/heartjnl-201
 4. Wallace JM, Bhattacharya S, Campbell DM, Horgan GW (2016). Inter-pregnancy weight change and the risk of recurrent pregnancy complications. *PLoS ONE* ;11(5): e0154812. doi:10.1371/journal.pone.0154812-308709
 5. Davies EL, Bell JS, Bhattacharya S (2016) Preeclampsia and preterm delivery: A population-based case-control study, *Hypertension in Pregnancy*, DOI: 10.1080/10641955.2016.1190846
 6. Ayansina D, Black C, Hall SJ, Marks A, Millar C, Prescott GJ, Wilde K, Bhattacharya S. Long term effects of gestational hypertension and pre-eclampsia on kidney function: Record linkage study. *Preg. Hyper: An Int. J. Women's Card. Health* (2016), 6(4): 344–349. <http://dx.doi.org/10.1016/j.preghy.2016.08.231>
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