

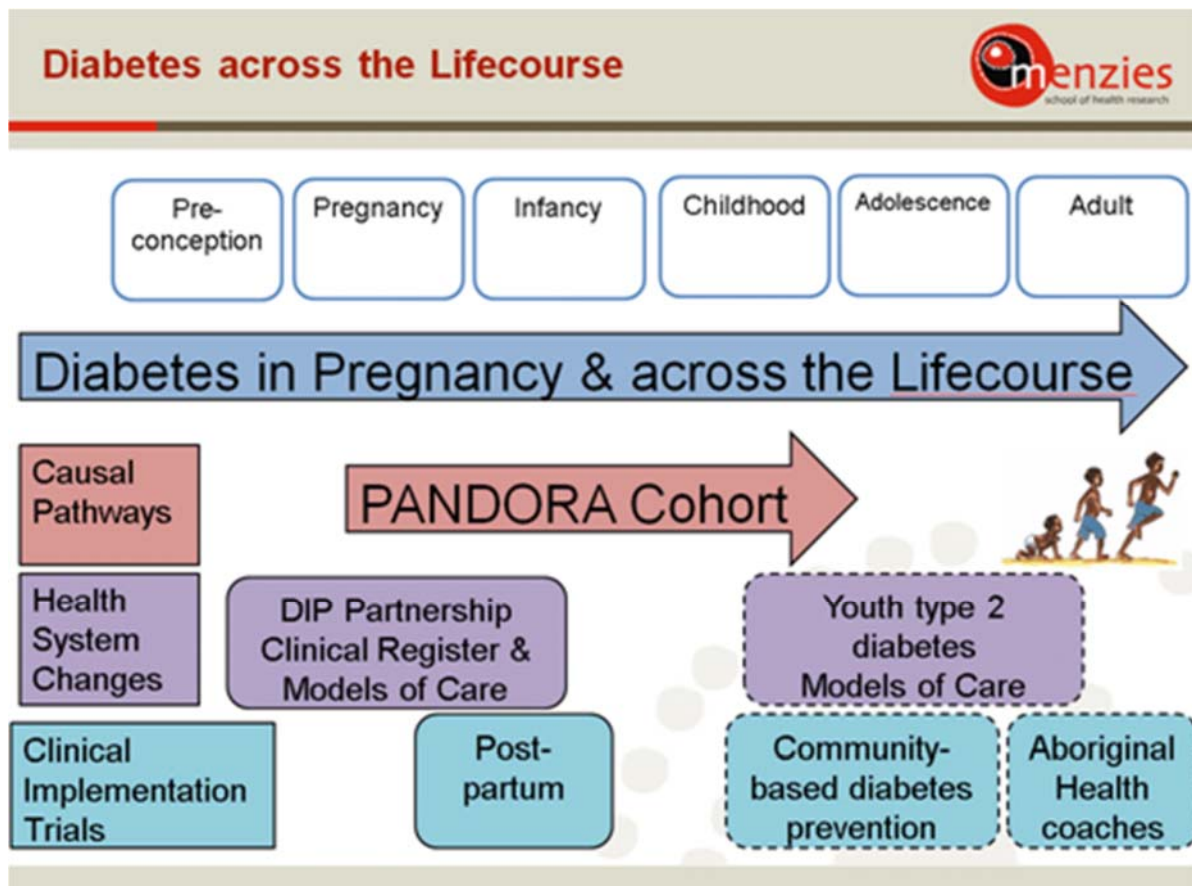
DIABETES across the LIFECOURSE: Northern Australia Partnership NEWSLETTER

Welcome to the 2019 December edition of our Partnership newsletter

This edition contains articles on two topics from the Key 5 in postpartum care following a pregnancy with diabetes (Key 5): contraception and glucose checks as previous editions have covered the other topics (breastfeeding, healthy weight and being smoke free).

This newsletter also has updates on our research projects including PANDORA, Diabetes In Pregnancy Models of Care and Clinical Register, and update from the Youth Diabetes Team. We've also provided a summary of our Annual Education Symposium (September 2019) and a list of recent publications.

Thank you to all for support in 2019 and we look forward to collaborating in 2020.



The Key 5: Staying healthy after a pregnancy with diabetes

Contraception

Modern contraceptives are important in preventing, planning and spacing pregnancies. There are many reliable options for contraception (1). The main consideration when discussing contraception is the woman's preference as any method of contraception will not be effective if the woman does not wish to use it.

From a reproductive perspective, high glycaemic levels at the time of conception and during pregnancy increase the likelihood of adverse pregnancy outcomes. For women with pre-existing diabetes, a higher HbA1c at the time of conception is associated with a higher risk of stillbirth, congenital anomalies, and perinatal mortality (2). There is also good evi-

dence that these risks can be reduced by preconception planning (3). When women request to have contraception removed, this is a good opportunity to discuss HbA1c levels, optimal antenatal care and the Key 5 (glucose checks, breastfeeding, healthy weight, and being smoke free). Other topics to discuss include immunisations (particularly rubella), management of chronic conditions and any supplements that are recommended (i.e. folic acid and higher doses of folic acid of 5mg/day for women who have a BMI that is greater than 30 kg/m² or who have diabetes (4).



Glucose Checks

Postpartum glucose checks are important for women who have had a pregnancy with gestational diabetes and for women who have type 2 diabetes mellitus. We have noticed that in our Key 5 presentations to clinicians that this topic often generates a great deal of interest and discussion.

Women with gestational diabetes (GDM) are at a high risk of developing type 2 diabetes. Our research is showing that Aboriginal and Torres Strait Islander women with previous GDM develop type 2

diabetes more quickly than non-Aboriginal women, which underlines the importance of postpartum glucose checks. For example, Chamberlain et al found that seven years after giving birth, 42.4% of Aboriginal and Torres Strait Islander women who had GDM were diagnosed with type 2 diabetes, compared to 13.5% of non-Indigenous mothers (5).

It is recommended that women have an oral glucose tolerance test (OGTT) six to eight weeks after giving birth (6).

Glucose Checks continued

It is well documented however that there are low levels of postpartum glucose checks among women who had a pregnancy complicated by diabetes (7). There are challenges for new mothers in spending the required time in the clinic as well as confusion as to whose role it is to follow up with women (8).

If it is not feasible for a woman to complete an OGTT, then it is recommended that the woman has an HbA1c. Due to the changes that a woman undergoes in pregnancy and keeping in mind that the HbA1c reflects the previous three months of blood glucose levels, this check should not be taken until at least four months postpartum (9). Women who have had GDM should continue to check glucose levels annually (HbA1c and/or OGTT), even if the

result from the postpartum check is normal.

For women who have T2DM during pregnancy, it is recommended that the woman's HbA1c is checked at 4 months post-partum (10). This can be part of the discussion around reviewing medications and be part of a discussion around preconception. It is ideal if a woman can have her HbA1c at less than 6.5% prior to her next pregnancy. This reduces the risks of congenital malformations and perinatal mortality. The results from the NT DIP Clinical Register for 2018 show that the average HbA1c for Aboriginal and Torres Strait Islander women was 8.4% (median gestation of 9.1 weeks) compared to average HbA1c of 6.5% for non-Indigenous mothers (median gestation of 10.7 weeks).

Top tips to support women with glucose checks

- Talk with women about glucose 'checks' not glucose 'tests'; a test implies a pass/fail
- Women who had GDM should have a glucose check in the postpartum period, preferably the OGTT at 6-12 weeks but if not, the or HbA1c at 4 months or later, and then annually to screen for T2DM as part of health checks
- If an OGTT in the postpartum period is not possible, then an HbA1c at least four months postpartum provides an indication of glucose levels
- Glucose checks are an important way for women to understand how their bodies are working and provide a tool in preventing T2DM, supporting future healthy pregnancies
- For women living with T2DM, discussing glucose checks is important in planning for future pregnancies.

Please contact us if you wish to access **Key 5 resources**.

We would be delighted to share a Key 5 PowerPoint that can be delivered by you to your colleagues, as well as brochures, pamphlets and posters.

Please email: ntdippartnership@menzies.edu.au to discuss.

Research Updates

NT & FNQ Diabetes In Pregnancy Models of Care and Clinical Register

The project is continuing to provide education to health professionals on inter-conception and postpartum management of women with diabetes in pregnancy.

Activities to promote the capacity and knowledge of diabetes in pregnancy among health professionals have included: educational activities and workshops as well as regular communication with clinicians via e-newsletters which features clinical register key findings data, health messages and a focus on the key five in the postpartum. A standard PowerPoint on the key 5 postpartum care issues identified through partnership activities (glucose checks, healthy weight, breastfeeding, smoke free and contraception) has been delivered at many forums and electronically circulated together with its audio-recordings. We would be delighted for you to deliver this PowerPoint to your colleagues, please contact us via phone or email for more information.

An interim evaluation of the health systems intervention has been undertaken across the three regions. The main aim of this evaluation was to adjust implementation activities as required. This involved in-depth interviews with health professionals and policy makers in 2018, with adjustments made to implementation in early 2019. The final evaluation in 2020 will involve interviews with health professionals and policy makers, as well as an audit of postpartum care (baseline and post-intervention). This evaluation will provide insights into effectiveness of the intervention.

As the NT & FNQ DIP teams wrap up the implementation phase of this project, we wish to thank all those who have supported the project thus far.

Project champions, those on the Indigenous Reference Group, the Clinical Reference Group and many others have made the project possible. We look forward to discussing with you all the plans for sustainability of the clinical register and the learnings from the evaluation.

PANDORA

PANDORA Wave 1 (a subset of the PANDORA Cohort) was completed in late 2018. The team travelled extensively across the NT for 3 years and completed health examinations with over 400 mums and their children aged 18 months to 5 years. Wave 1 involved collecting bio specimens and a physical assessment, looking for early predictors of chronic disease. The data are currently being analysed and the first papers will be submitted for publication in journals in 2020.

We are pleased to announce that **PANDORA Wave 2** commenced in November 2019! This study will follow up mothers and their children (age 6-10 years). Study visits will continue until March 2023, to cover the 5-year age range of the cohort.

Youth Diabetes Team Update

There are two main components of our work within this space.

The Youth Diabetes Management Program aims to develop, pilot and evaluate culturally appropriate diabetes management programs for Aboriginal and Torres Strait Islander children and youth with type 2 diabetes across Northern Australia (Northern Territory, Kimberley and Far North Queensland).

Research Updates continued

The first stage of this project involves formative data collection, with staggered progress across the regions:

Northern Territory - this has been completed in four sites (two in the Top End, two in Central Australia). Analysis and plans for dissemination of findings are underway.

Far North Queensland – sites have been confirmed with data collection yet to commence.

Kimberley (WA) – consultations with key stakeholders and communities are progressing.

We have secured three years of funding for this project (from Commonwealth Department of Health) which will officially commence on the 1st of January 2020. A Project Manager position has been advertised (closed 1st December). Working groups have been established in the Top End and Central Australia, with others to be formed in the FNQ and Kimberley regions by early 2020. Community consultation is ongoing and we look forward to co-

designing implementation activities for this project with those involved.

The Child Diabetes Prevention Program aims to adapt a culturally-safe behavioural intervention program to reduce diabetes risk in Aboriginal children (6-10 years) in Central Australia. Specifically, we are working with Central Australia Aboriginal Congress and other NT health and education services, communities and families to inform the adaptation of a First Nations American youth diabetes prevention program to the local context and ensure it aligns with local needs, priorities and cultures.

Researchers and staff working within these programs of work include: Shiree Mack, Leisa McCarthy, Emma Weaver (Alice Springs), Athira Rohit, Natasha Freeman, Renae Kirkham (Darwin) and Chenoa Wapau (Cairns).

Thanks to all of the communities and stakeholders who have contributed to our work in youth type 2 diabetes.

Recent Events



Dr Diana MacKay, PhD Candidate with Menzies, travelled to the bustling city of Bangkok to represent the Partnership at the **Annual Scientific Meeting of the Global Alliance for Chronic Disease** in November. This was a great opportunity to share our learnings to date from the Partnership's work to improve systems of care for women with hyperglycaemia in pregnancy. Diana's PhD covers the final evaluation of the project, which will happen early next year, and key findings will be circulated later in 2020.

Recent Events continued

The **2019 Diabetes Across the Lifecourse Annual Educational Symposium** and related Partnership meetings were held in Darwin between 25-27 September 2019. The Symposium commenced with a Welcome to Country and traditional smoking ceremony by Traditional Larrakia Owners, Chris Lee and Nadine Lee. A range of speakers presented on the day, including Professor Alex Brown (SAHMRI), Professor Elizabeth Davis (Telethon Institute & Perth Children's Hospital), Professor Jonathan Shaw (Baker Institute). In addition, Professor Louise Maple-Brown (who leads the Partnership at Menzies), and Dr Renae Kirkham presented on their respective areas (diabetes in pregnancy and type two diabetes in young people). The event was well attended, and with those attending virtually through Webex, attendance was over 230 people.

Meetings for research investigators as well as Clinical Reference Group and the Indigenous Reference Group meetings were held on either side of the Symposium. We thank all those who attended and contributed to the discussion.



Top right: Nadine Lee and Chris Lee provide a Welcome to Larrakia Country

Right Middle: Melinda Hammond presents on healthy settings approaches in Cape York

Left: Participants at the Partnership Investigators Meeting (28/09/2019)



Professor Louise Maple-Brown with the Honourable Natasha Fyles, Minister for Health, met to discuss the NT Diabetes Network's work and priorities (November 2019).

Dr Matthew Hare, PhD Candidate with Menzies, was recently awarded a HOT NORTH grant to produce animated videos for Aboriginal and Torres Strait Islander women who have hyperglycaemia in pregnancy. Resources will be in First Languages. These resources will fill a gap identified in our formative evaluation of the Models of Care project and by Indigenous Reference Group Members.

Partnership publications: July – Nov 2019

Cheng E, et al. Birth outcomes in women with gestational diabetes managed by lifestyle modification alone: The PANDORA Study. *Diabetes Research and Clinical Practice*, 2019. <https://authors.elsevier.com/a/1ZxACcOiQDkQn>

Hjort L, Novakovic B, Grunnet LJ, Maple-Brown L, Damm P, Desoye G, Saffery R. Diabetes in pregnancy and epigenetic mechanisms- how the first 9 months from conception might affect the child's epigenome and later risk of disease. *Lancet Diabetes Endocrinol*, 2019 May 22. [https://doi.org/10.1016/S2213-8587\(19\)30078-6](https://doi.org/10.1016/S2213-8587(19)30078-6)

Kirkham R, et al. Improving postpartum screening after diabetes in pregnancy: results of a pilot study in remote Australia. *The Australian and New Zealand Journal of Obstetrics and Gynaecology*, 2019. 59: 430-435. <https://www.ncbi.nlm.nih.gov/pubmed/30276799>

Kirkham R, et al. Diabetes care in remote Australia: the antenatal, postpartum and inter-pregnancy period. *BMC Pregnancy and Childbirth*. 2019 Oct 28; 19(1): 389. <https://bmcpregnancychildbirth.biomedcentral.com/articles/10.1186/s12884-019-2562-6>

Please see our website for the latest edition of Our Research Highlights for Policy and Practice, which contains summaries of the above publications. We recently emailed pdfs of each of these papers.

We are excited to announce that our website is being redeveloped. Please visit to see information about our projects and resources that are available for your use.

[Click here to access our Diabetes in Pregnancy Partnership website](#)

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