Gestational Diabetes

A Clinical Decision Support Tool
Gestational Diabetes (GDM)

What is it?

- Glucose intolerance first diagnosed in pregnancy
  - NB: A small number of women will have unrecognized, pre-existing diabetes

- Pregnancy hormones increase insulin resistance

- Occurs in 8-24% of all pregnancies (approx 1,500 per year Newham and RLH)
Gestational Diabetes (GDM)

Risk Factors

• High BMI
• Family history

• Sedentary lifestyle
• Previous GDM

• South East Asian woman carry 6-11 times greater risk than white European woman.
  • 9.2% of all pregnancies account for 25.6% all GDM
GDM Complications

*Increased risk of:*

- High blood pressure and pre eclampsia
- C-section or assisted delivery
- Shoulder dystocia
- Still birth
- Hypoglycemia and jaundice for baby
- Future health risks for baby associated with LGA or SGA
- Future risk of T2DM for mother and baby
  - Up to 60% increased risk of T2DM in next 10 years
GDM Management

- Multi disciplinary approach
- Diet and exercise used first to achieve glycemic control
- Metformin and insulin
- Planned delivery of baby in timely fashion
- Close observation of baby’s sugars following birth
- Follow-up postnatally to ensure GDM has resolved
PAMBAYESIAN GDM Case Study

Aims:

• Create a new generation of easy-to-use, computerised support systems to support and empower women with gestational diabetes
• Aid decision making of health professionals
• Reduce pressure on busy clinical settings in primary and secondary care
• Improve outcomes and experience of pregnancy care.
PAMBAYESIAN GDM Case Study
PAMBAYESIAN GDM Case Study

Study Design: Retrospective Data

• Literature review and review of current practice guidelines
• Audit of clinical data from past GDM pregnancies (Six years from RLH)
• Seek opinions of women and clinicians on their care
• Gain clinician involvement
• GP involvement also being sought
• Build and train Clinical Decision Support Tool using Bayesian Networks
PAMBAYESIAN GDM Case Study

**Study Design:** Prospective Data

- Women with GDM pregnancy at RLH, Newham University and two community sites (~ 500 over 3 years)
- Collect data alongside routine GDM care:
  - Booking history, blood results, routine blood glucose readings, diet, medication initiation and dose management
  - Decision to deliver baby
  - Outcomes for mother and baby
  - Postnatal follow-up
- Present data to Clinical Decision Support Tool
  - Does it make the same recommendations and accurately predict risk and outcomes?
The PAMBAYESIAN GDM Case Study will:

• Give women with GDM more confidence and empowerment to self-manage and participate in care
• Improve clinic experience for women and clinicians
• Perhaps allow more GDM to be managed in the community, reduce pressure on secondary care