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Diagnosing the Gestational Diabetes Mellitus Medical Nutrition Therapy evidence-practice gap: informing a project to translate guidelines into practice

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The evidence practice gap
Perceived quality problem or emergence of new evidence
Assessment of influencing factors
Design of implementation strategies
Evidence-based
Informed by theory
Optimal care/ Behaviour change
Explicitly evaluating your intervention using a theory-driven approach

The evidence-practice gap

Perceived quality problem or emergence of new evidence

GDM
(Gestational Diabetes Mellitus)

Negative maternal outcomes

- caesarean sections
- assisted deliveries
- ↑risk of **T2DM** **(30-50%)**

Negative infant outcomes

- macrosomia
- hypoglycaemia
- shoulder dystocia
- birth defects
- adult diabetes and obesity

T2DM
(Type 2 Diabetes Mellitus)

Increased risk of:

- Heart disease
- Renal failure
- Blindness
- Amputations
- Birth defects

Decreased life expectancy by 15 years

$6 billion/year (direct & non direct costs)

- Personal **costs**
- Clinical costs **costs**
- Health system **costs**
- Public health **costs**

TEAM APPROACH [1]

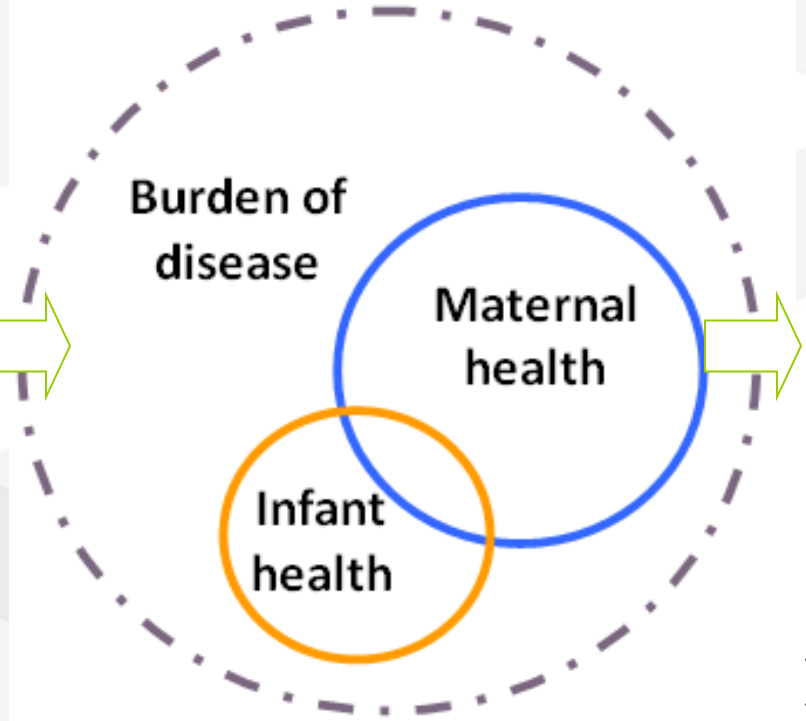
including Endocrinologists

Obstetricians

Midwives

Diabetes Educators

Dietitians



Better GDM control through **improved diet therapy and BGLs**

- Less medication use
- Fewer injections
- Improved QoL
- Patient satisfaction
- Better pregnancy outcomes
- Decreased weight retention
- Lower chronic disease incidence through improved follow up

Personal ~~costs~~/savings

Clinical costs ~~costs~~/savings

Health system ~~costs~~/savings

Public health ~~costs~~/savings

evidence-practice gap

American Dietetic Association Guidelines [2]	
1 new visit	
3 review visits (min)	1
	2
	3
1 postnatal visit	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Assessment of influencing factors

barriers
theory
intervention

How?[4]

1. *Who* needs to do *what*, differently?
2. Using a *theoretical framework*, which barriers and enablers need to be addressed?
3. Which intervention components (*behaviour change techniques*) and modes of delivery could overcome the modifiable barriers and enhance the enablers?
4. How can behaviour change be *measured* and *understood*?

Assessment of influencing factors

barriers
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Where? MMH GDM clinic

Who? Women with GDM

Staff

- Obstetricians
- Endocrinologists (ObsMed)
- Midwifery
- Diabetes Educator
- Dietitians

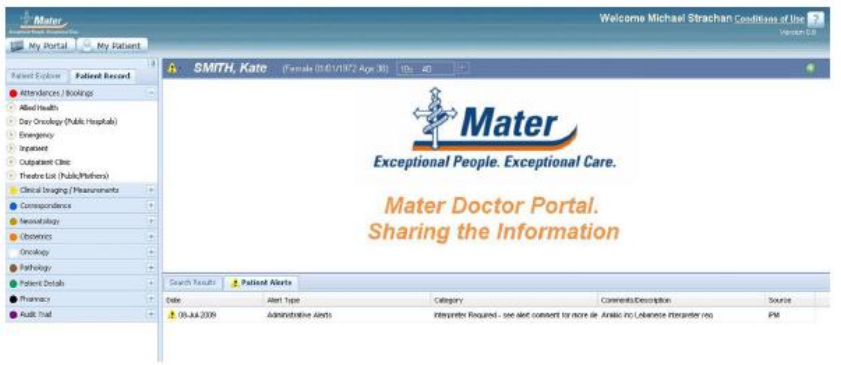
1.Determining *who* needs to do *what* differently?

barriers
theory
intervention

Data sources[5]:

- routinely collected hospital data,
- staff surveys,

- clinic observation and team discussion, and
- evidence from the literature and relevant reports.[3,6,7,8]



1. Determining *who* needs to do *what* differently?: Barriers

- **Routinely collected hospital data**
  - Dietetic appointment not provided according to ADA model of care
  - Diet vs Medication (30% vs 70%)
  - Unreliable data sources (casemix; matrix)

	GDM-treatment	2009-11
Casemix coding data	Insulin	47.6%
	Metformin	15.6%
	Diet	31.7%
	Unspecified	5.0%
	n women w/ GDM	150
Matrix Database	n women w/ GDM	193
	Insulin	24.5%
	Metformin	n/a
	Diet	74.6%

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barriers theory intervention

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1. Determining *who* needs to do *what* differently?: Barriers

barriers
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intervention

- **Clinic observation and team discussion**
  - Significant shortfall in dietetic resources (0.1FTE vs 0.4+FTE)
  - No clinic room available outside GDM clinic
  - Not in clinical pathway containing schedule of visits beyond first appointment
  - No appointment system/clinic slot

- **Evidence from the literature and relevant reports** [6,7,8]
  - Similar to other Queensland and Australian services (dietetics)

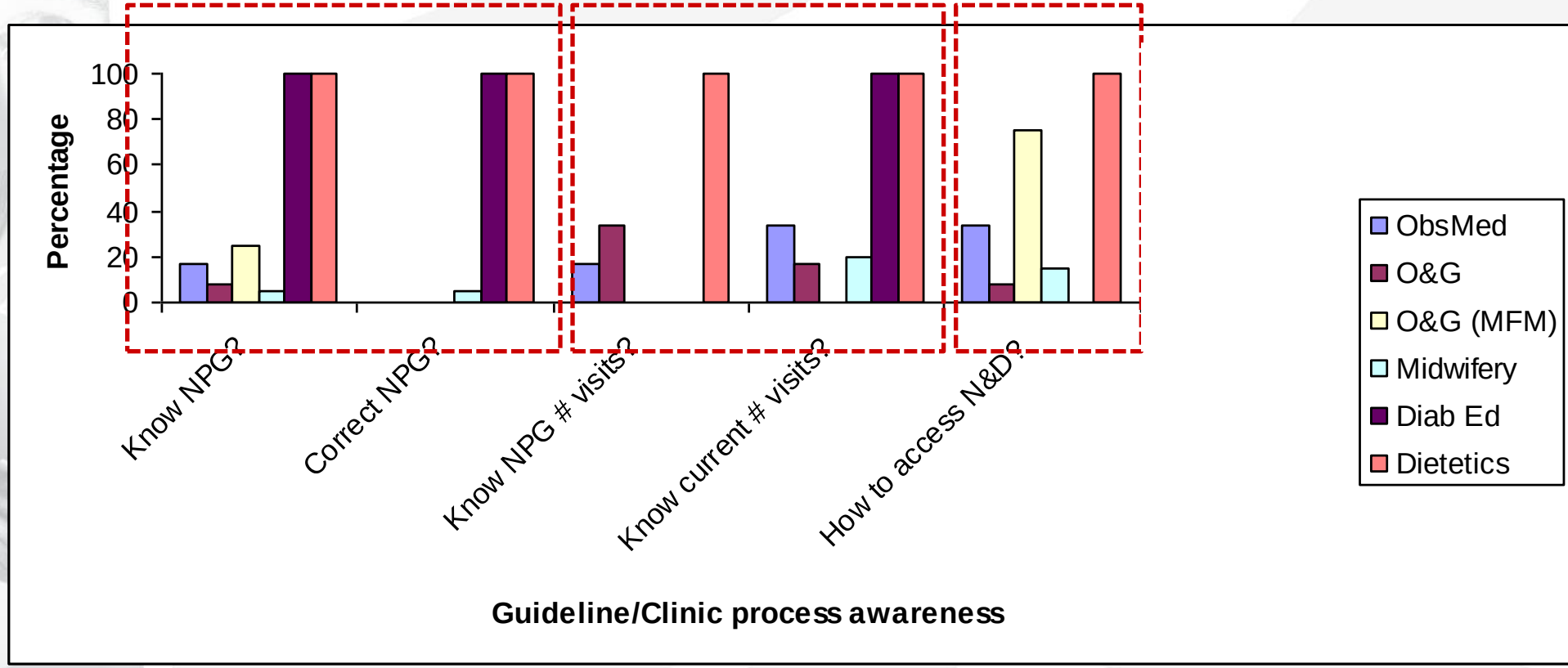
Schedule: Gestational Diabetes

Attention ADMIN STAFF
1. Once schedule started → please cancel all existing appointments.
2. Whilst on NORMAL pathway (left)
   a) keep in continuity midwifery clinic (unless Student or MPC)
   b) book appointments week-to-week
3. If on VARIANT pathway (right)
   a) move to GM / ABGD clinic in booked Team
   b) book ALL remaining appointments

Attention CLINICAL STAFF
1. If diabetes diagnosed in early preg → use T1/T2 DM schedule
2. Schedule is commenced by Diabetic Educator
3. Clinicians to tick and sign off at each visit
4. At end of consultation
   → circle the next visit (N or V) and ask woman to book at counter
   → if moves to V then circle all subsequent appointments.

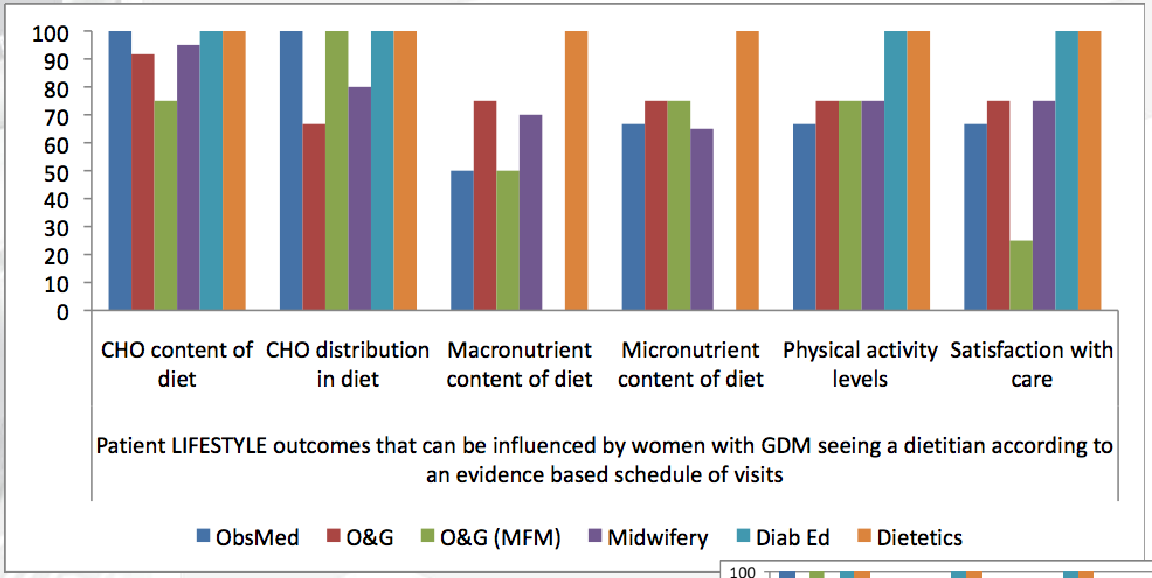
Weeks	Who with	Outcomes and Actions		Date and Time	Name Signature
		Normal pathway (N) (well controlled on diet)	Variant pathway (V) (requires insulin or metformin)		
Diagnosis ____wks	Registrar	☐ GDM Education Clinic referral (incl dietitian) ☐ Physician referral			
+2 weeks	Obstetrician/ Registrar	☐ all fasting <5.0 mmol/L AND ☐ all 1-hour post-prandial <8.0 mmol/L →☐ suspicion LGA: ordered USS biometry/AFI	☐ 2 or more fasting >5.0 OR ☐ 2 or more 1-hour post-prandial >8.0 →☐ order USS for biometry/AFI (28-30 weeks) →☐ refer to ObsMed		
	Obstetric Physician		☐ insulin indicated ☐ metformin indicated ☐ further "lifestyle modification", diet and PA ☐ for further BSL monitoring ONLY		
	Midwife **N** Diab Ed **V**	☐ reinforce monitoring, diet	☐ teach insulin/metformin administration ☐ reinforce monitoring, diet		
+3 weeks	PHONE DiabMwife**N** DiabetEd **V**	phone follow-up ☐ all fasting <5.0 mmol/L AND ☐ all 1-hour post-prandial <8.0 mmol/L →☐↓monitoring: every 2nd day	phone follow-up ☐ 2 or more fasting >5.0 OR ☐ 2 or more 1-hour post-prandial >8.0 →☐ d/w obs med & F/U NOT required ☐ d/w obs med & F/U required		

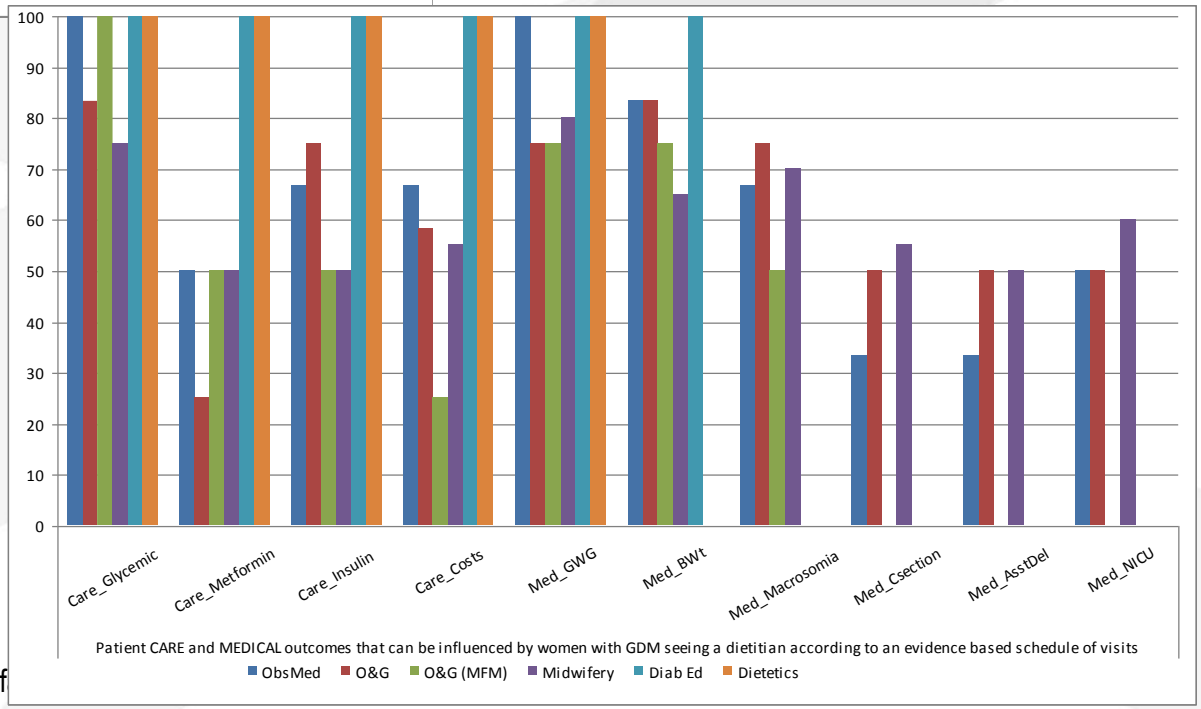
Staff awareness and knowledge of (ADA) NPGs and clinic processes



Staff 'belief' in dietitians ability to influence lifestyle, clinical and medical outcomes

barriers theory intervention





Social and environmental f

barriers
theory
intervention

1. Determining *who* needs to do *what* differently?: Enablers

Identified through clinic observation and team discussion:

- strong clinician-consumer relationship,
- project funding for dietetic time,
- a positive research and audit culture,
- managers and clinical experts on the project team and statewide GDM guidelines steering committee, and
- a TRIP fellowship lead and inform the translation process.

barriers
theory
intervention

2. Using a *theoretical framework*, which barriers and or enablers need to be addressed?

9,10

The Theoretical Domains Framework (TDF)

The TDF + GDM

education

audit and feedback

clinical champions

local opinion leaders

audit and feedback

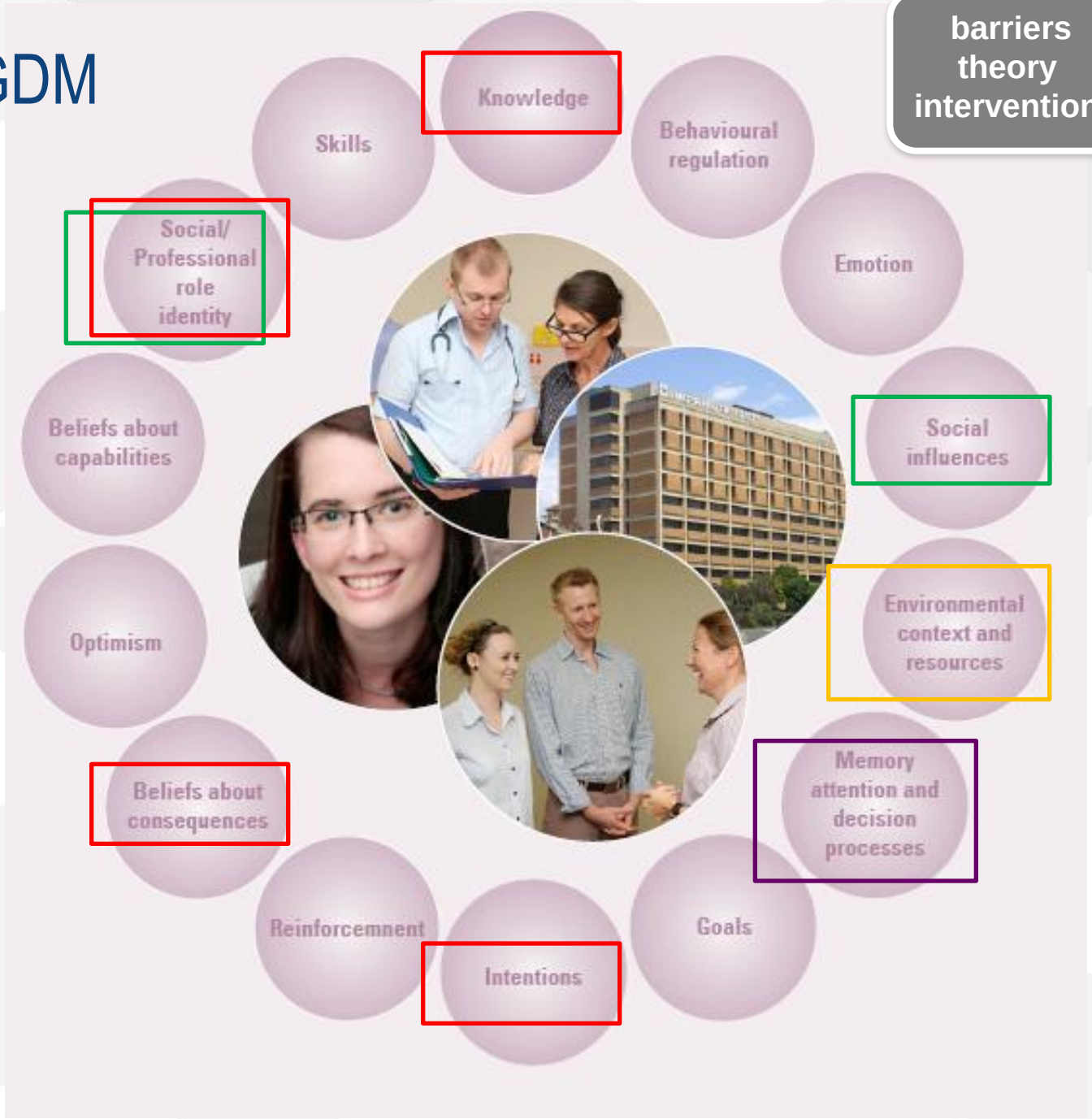
clinical care path

'Practix' appts

$$ D/N

clinic room

women



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outcomes (process, clinical)

Measuring success

Process outcomes:

Primary: uptake of the new dietetic schedule, as measured by adherence to the ADA NPG appointment schedule

Secondary: clinician (i) awareness,
(ii) knowledge and
(iii) acceptance

Clinical outcomes:

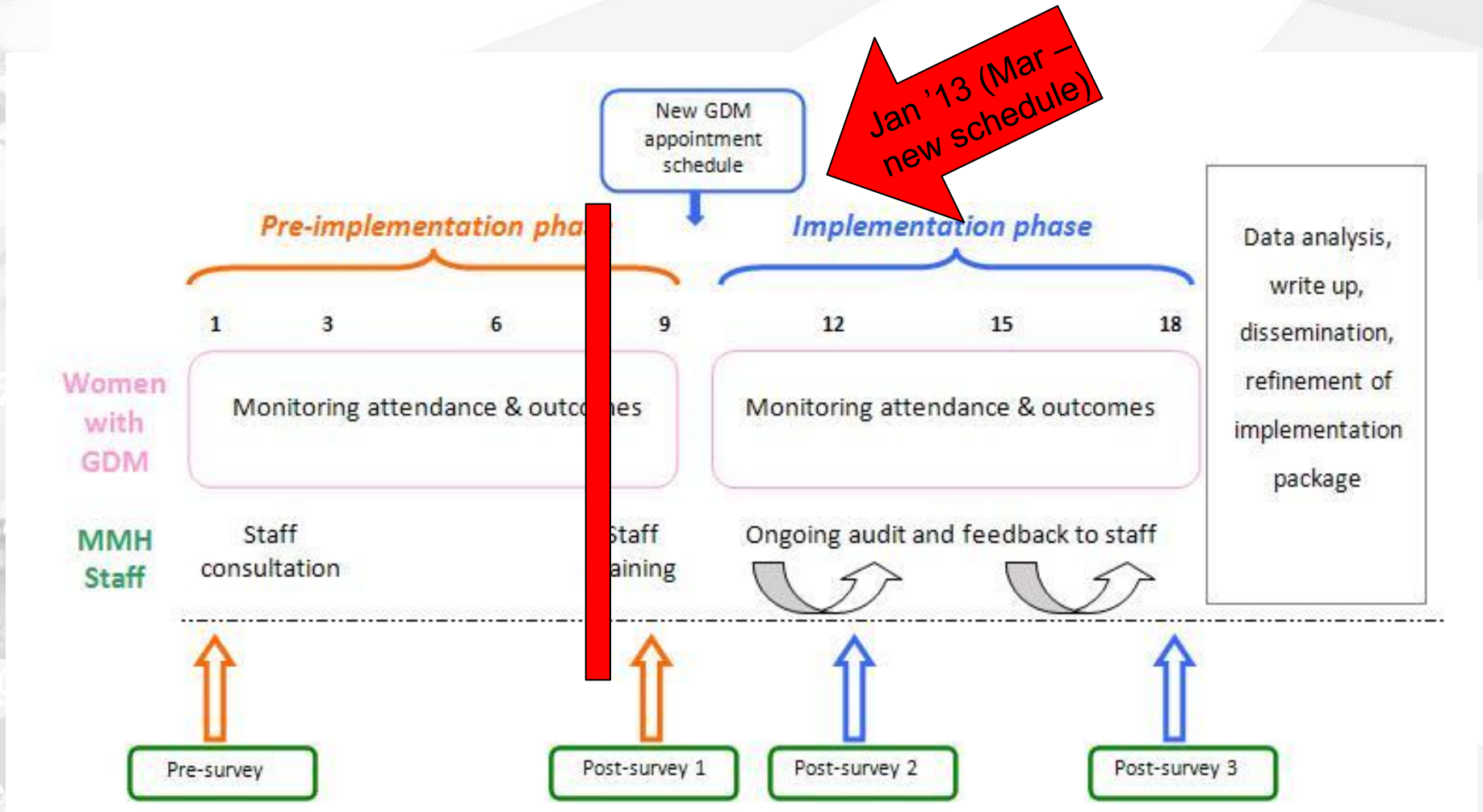
Primary: effect of the NPG schedule on requirement for pharmacotherapy (insulin/metformin)

Secondary: (i) rate of maternal weight gain,
(ii) diet quality, physical activity and pt satisfaction
(iii) birth weight.

+ cost-benefit analysis and other clinical outcomes

outcomes (process, clinical)

Project timeline



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Annette Parry (MMH Diabetes Educator)

Sam Drew (Nurse Unit Manager, AN Clinic)

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