Regional Weigh to a Healthy Pregnancy Programme

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Overview

- Background
- Risks and cost of Maternal Obesity
- Aims and Objectives
- Materials and methods
- Evaluation Results
- Conclusions and Future Direction

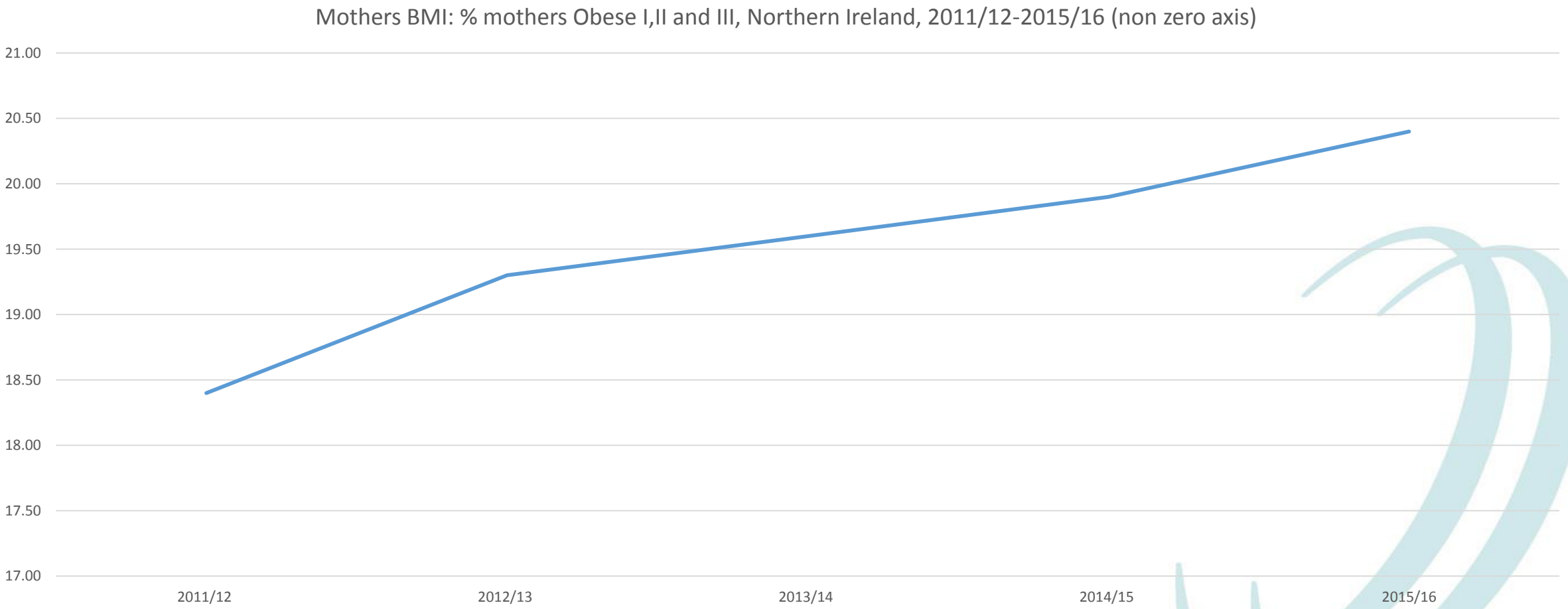
Background

- Weigh to Healthy Pregnancy (WTHP) project was developed to address maternal obesity as part of the wider Public health obesity agenda in NI.
- WTHP was initiated by PHA and designed in partnership with regional WTHP steering group which included significant PHA, HSCTs staff and QUB academia.
- Inter-disciplinary service delivery commenced in all five HSCTs in 2013.

Body Mass Index (BMI), at time of booking, of mothers who gave birth in Northern Ireland, 2011/12 to 2015/116(from NIMATS)

Year of birth		Obese I (30.00 - 34.99)	Obese II (35.00 - 39.99)	**Obese III (>=40.00)**	Total Obese I,IIand III
2011/12	n	2274	1,048	497	4,319
	%	11.80%	4.50%	2.10%	18.40%
2012/13	n	3,003	1,126	553	4,682
	%	12.40%	4.60%	2.30%	19.30%
2013/14	n	2,945	1,182	519	4,646
	%	12.40%	5.00%	2.20%	19.60%
2014/15	n	2,954	1,221	579	4,754
	%	12.40%	5.10%	2.40%	19.90%
2015/16	n	2987	1274	**607**	4868
	%	12.50%	5.30%	**2.50%**	20.40%

Body Mass Index (BMI), at time of booking, of mothers who gave birth in Northern Ireland, 2011/12 to 2015/116(from NIMATs)



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Risks of Maternal Obesity

Maternal

- Thrombosis – DVT, PE
- Gestational diabtetes- Type 2
- Hypertension – pre-eclampsia
- Instrumental delivery – C/S
- Post partum haemorrhage
- Wound infection
- Maternal death
- Diabetes in later life

Infant

- Large baby >4kg x 2 risk
- Shoulder dystocia
- Prematurity
- Miscarriage
- Stillbirth
- Perinatal death
- Increased risk of childhood obesity

Maternal Obesity Costs

- Obese pregnant women cost the NHS 37% more than their counterparts of a normal weight.
- In 2015/16, over half (50.6%) of all mothers in NI at the time of booking, were considered pre-obese or obese.
- Over a fifth(20.4%) of all women in NI entered pregnancy as category Obese I, II and III
- At highest risk are pregnant women with BMI ≥ 40kg/m2. This accounts for 2.5% of pregnancies in NI.

Obesity in pregnancy: a retrospective prevalence-based study on health service utilisation and costs on the NHS

- **Results:** There was a strong association between healthcare usage cost and BMI, mean total costs were 23% higher among overweight and 37% higher among obese women compared with women with normal weight. The total mean cost estimates were £3546.30 for normal weight, £4244.40 for overweight and £4717.64 for obese women.
- **Conclusions**: Increased health service usage and healthcare costs during pregnancy are associated with increasing maternal BMI; this was apparent across all health services considered within this study. Interventions costing less than £1171.34 per person could be cost-effective if they reduce healthcare usage among obese pregnant women to levels equivalent to that of normal weight women.
- **Morgan KL, Rahman MA, Macey S, et al (2014) BMJ**

Obstetric Costs 2016/17 NI(source NI14/15 Reference costs

HRG Label	£ Costs/FCEs
Ante-Natal Routine Observation	831
Ante-Natal Complex Disorders	1,655
Ante-Natal Major Disorders	1,572
Ante-Natal Therapeutic Procedures, including Induction	1,176
Post-Natal Disorders	1,995
Post-Natal Therapeutic Procedures	1,897
Normal Delivery Average	**2,063**
Normal Delivery	1,751
Normal Delivery, with Epidural or Induction	2,403
Normal Delivery, with Epidural and Induction, or with Post-Partum Surgical Intervention	2,826
Normal Delivery, with Epidural or Induction, and with Post-Partum Surgical Intervention	2,800
Normal Delivery, with Epidural, Induction and Post-Partum Surgical Intervention	2,970
Assisted Delivery Average	**3,079**
Assisted Delivery	2,603
Assisted Delivery, with Epidural or Induction	3,104
Assisted Delivery, with Epidural and Induction, or with Post-Partum Surgical Intervention	3,593
Assisted Delivery, with Epidural or Induction, and with Post-Partum Surgical Intervention	3,371
Assisted Delivery, with Epidural, Induction and Post-Partum Surgical Intervention	3,762
Planned Caesarean Section	3,645
Emergency Caesarean Section	**4,989**

Aims and Objectives

- The objectives of the WTHP programme were to:
- Support individuals in adopting healthy eating behaviours during pregnancy.
- Encourage individuals to achieve appropriate levels of physical activity during pregnancy.
- Facilitate sustained lifestyle changes post-natally.
- Promote breastfeeding.
- Encourage optimal gestation weight gain and post-partum weight loss.

IOM recommendations for weight gain in pregnancy depending BMI

BMI Category	Total Pregnancy Weight Gain
18.5 - 24.9 (healthy)	11.5 - 16 kg (25–35lbs)
25 - 29.9 (overweight)	7 - 11.5 kg (15- 25lbs)
30 + (very overweight)	5 - 9 kg (11-20lbs)

Making Healthy Lifestyle Changes

- This is in keeping with NICE guidance which states that 'dieting during pregnancy is not recommended as it may harm the health of the unborn child' and it must be noted that the purpose of this intervention was to limit gestational weight gain and was not to achieve intentional weight loss in pregnancy

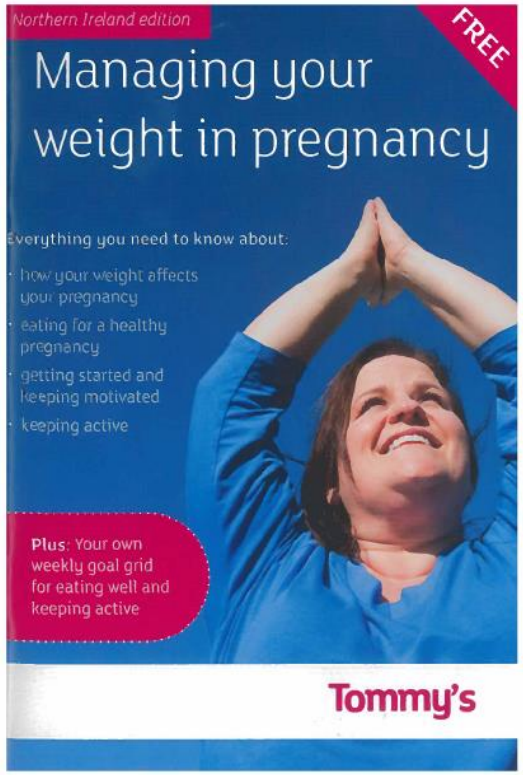
Eligibility Criteria

Inclusion	Exclusion
BMI>40 at booking	BMI<40 at booking
Over 18 years old	Under 18 years old
Singleton pregnancy	Multiple Pregnancy
Hypertension	Severe psychiatric illness with active diagnosis and current treatment.
Gestational Diabetes	Previous SGA baby
	Maternal cardiac condition e.g. CHD, valvular disease, heart failure, arrythmia
	Not interested in participating

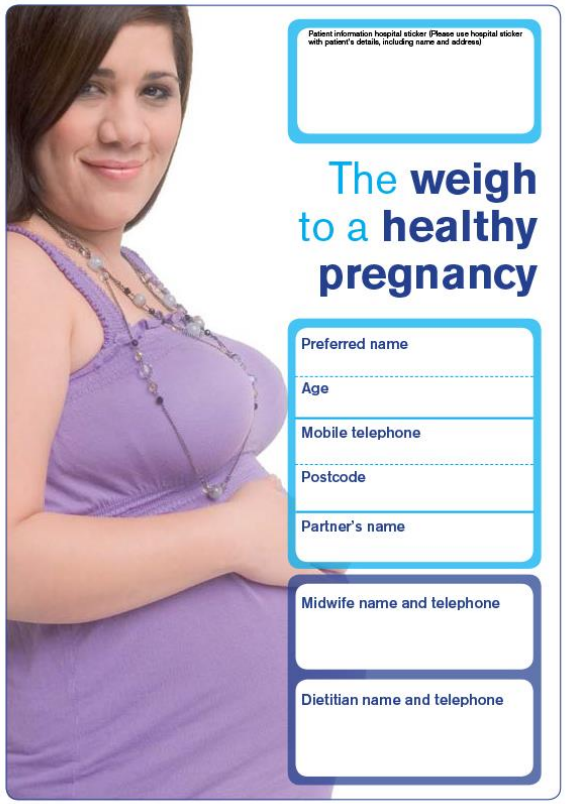
Materials and Methods

- Allocated hours for WTHP teams Dietitians, Midwives and Physiotherapists
- PHA provided specialist regional training to WTHP teams Women were identified for recruitment by their midwife at their first booking appointment or through the Northern Ireland Maternity System (NIMATs) and referred to local WTHP team.
- Follow up phone call from WTHP team and invited to attend first consultation with the team.
- Contacts a combination of face to face, telephone and small groups.
- Support materials and tele-health access

Components of programme



- Telehealth
- Tommy booklet
- Programme booklet



Remote Telemonitoring

- The participants used Remote Telemonitoring NI (RTNI) regional service.
- Used to monitor weekly weight readings
- Patient led – time and day of monitoring chosen by patient – self monitoring.
- Readings then access remotely by WTHP clinicians to inform ongoing care.

Evaluation Methods (UU)

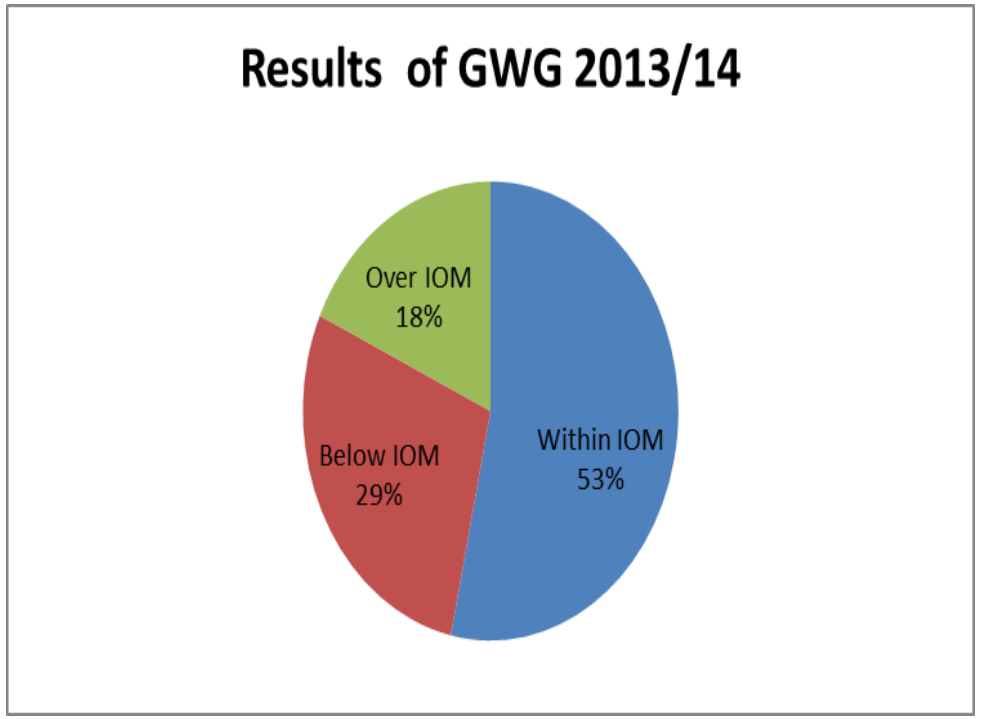
UU evaluation using:

- NIMATs data
- WTHP team data collection
- Qualitative feedback –women and teams
- Tele-health data

Results

- WTHP data was evaluated by University of Ulster (UU)in 2013/14.
- During evaluation period, 306 women agreed to participate. This demonstrates 80% uptake to the programme.
- Of 306 sample, 217 (71%) completed the programme.
- Average BMI 43.95 (SD 3.87)
- Average GWG was 4.65kg (Institute of Medicine(IOM) guidance for BMI≥40 is 5-9kg).

Results



- 53% within IOM
- 29% below IOM
- 18% over IOM
- At 6-8 weeks post partum weight loss was 3.96kg compared to booking weight.

- Higher breastfeeding rates at 6 weeks post partum, 23.8% of participants exclusively breastfed compared to 10.7% who did not participate in the WTHP programme.

Results

- Interviews one year after completing WTHP indicate positive lifestyle changes have been extended to include the wider family.
- Participants reported changes in usual shopping habits and changes in attitude towards weight gain in pregnancy.
- Self-monitoring with telehealth scales increased awareness of eating habits, making women more mindful and feeling a sense of control.
- Majority of women felt that the programme did help them limit their GWG.

Quotes from Participants

" I think the way the midwife approached me about it was very good, in a really non-judgemental way"

"My eating habits before I got pregnant were atrocious, I'd eat nothing all day and then eat at night. Now I eat breakfast, lunch, a snack through the day and then a small dinner."

"" It helped me maintain the whole It helped me maintain the whole way through and I would say if I wasn't on it I probably would have put on a lot more than I did"

"It keeps in the back of your mind to be conscious of what you're eating and it wasn't all about diet, it as about making me aware that I'm pregnant and I need to keep healthy"

"The team encouraged me that just because I was pregnant, didn't mean I had to stop all exercise, to just continue and know your limits, so I kept exercising throughout pregnancy"

"The Dietitian talked about why I was overeating and that's helped me now that the baby has been born.. It was more to stop me snacking and be a bit more mindful about what I was eating which was most helpful"

UU Evaluation Conclusions

- The UU team stated “evidence from evaluation was sufficient to confidently state that the intervention has the potential to impact positively on weight management for pregnant women with BMI≥40” (2015).

- The project is an effective intervention to manage health risks, resulting in significant positive health outcomes for mother and child.

UU recommendations

- Recommendations from UU evaluation have been used to inform future operation and protocols of the project:

UU recommendation	WTHP outcome
Identified need to re-visit inclusion/exclusion criteria➔	Revisited and revised
Standardisation of use of NIMATS to identify recruits➔	All teams reguarly cross check NIMATS with referrals to avoid missed contact
Revision of content and format of group sessions➔	Audited and revised
Development of patient literature about WTHP➔	New patient literature and care plan in place
Ongoing training of teams – regional standardisation➔	Regional clinical network and regular meetings and sharing of good practice
Integration into routine antenatal appointments-WTHP within consultant led clinics? ⇗	Operational challenges which vary in each Trust area
Patients request longer support post natal period?➔	6 weeks increased to 10 weeks post natal
Further exploration of e-technologies ? App/Pt forum➔	Replacement telehealth procurement underway

Anticipated Economic and Social Return

- Potential for significant reduction in maternity care and neonatal care costs.
- Future reduction in cost for chronic conditions(Maternal and Child)
- Creating a 'trickle down' effect of positive health messages to women and their families.
- Contributing to multiple public health priorities relevant to maternity, obesity and diabetes.
- Increased uptake of breastfeeding for obese women.
- WTHP contributing significantly to the HSCTs delivery targets for RTNI set by the PHA.

Future of WTHP

- Recurrent PHA funding status for BMI ≥40 secured 2016.
- Funding secured to lower acceptance to BMI≥30 from April 2018.
- PHA bid submitted to lower to BMI≥35 pending.
- Funding secured for ongoing Telehealth element of the service – procurement underway.

Questions?

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