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Improving Care in Pregnancies After Stillbirth – Evaluating The Rainbow Clinic

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Tommy's
Rainbow Clinic@St Marys

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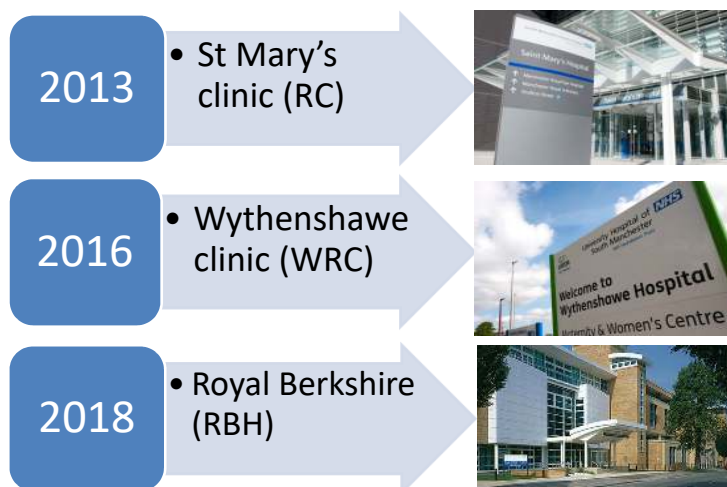



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Risk factors and Stillbirth


The majority of stillbirths occur in women with no apparent risk factors (81%)


- Majority confer moderately increased risk
 - Advanced maternal age (>40) (1.6 - 3.6x)
 - Diabetes (2.7x), Hypertension (2.0x)
 - Cigarette smoking (1.3-1.6x), Alcohol >5u/wk (2-3x)
 - Reduced Fetal Movements (2-3x)
 - Small for Gestational Age (19.8x)
 - **Previous Stillbirth (2-10x)**
 - **Meta-analysis 4.7x Lamont et al. BMJ 2015**

Salihi et al. J Obs Gyn Res 2008, Reddy et al. Obstet Gynecol 2010, Heazell and Froen, J Obs Gyn 2005, Kesmodel et al. Am J Epidemiol 2002, McCowan et al. ANZJOG 2007, Gardosi et al. BMJ ,2013.




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Complications in subsequent pregnancy

- Black et al. *BJOG* 2008
- Grampian region of Scotland
- Women with prior SB (n = 364) & live birth (n = 33,715)
- Women with previous SB
 - Increased risk of pre-eclampsia (OR 3.1, 95% CI 1.7-5.7)
 - Prematurity (OR 2.8, 95% CI 1.9-4.2)
 - Low birthweight (OR 2.8, 95% CI 1.7-4.5)
 - Placental abruption (OR 9.4, 95% CI 4.5-19.7)
 - Induction of labour (OR 3.2, 95% CI 2.4-4.2)




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What are women's experiences in subsequent pregnancies?

DOI: 10.1111/1471-0528.12656
www.bjog.org

Systematic review

Parents' experiences and expectations of care in pregnancy after stillbirth or neonatal death: a metasynthesis

TA Mills,^a C Ricklesford,^b A Cooke,^a AEP Heazell,^{b,c} M Whitworth,^{b,c} T Lavender^a


^a School of Nursing, Midwifery and Social Work, The University of Manchester, ^b Central Manchester University Hospitals NHS Trust, ^c Maternal and Fetal Health Research Group, Institute of Human Development, The University of Manchester, Manchester Academic Health Sciences Centre, Manchester, UK

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Accepted 6 December 2013. Published Online 4 March 2014.


Background Pregnancy after perinatal death is characterised by

Main results Fourteen studies were included in the synthesis,




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Care in Pregnancies After Stillbirth – International HIC Perspective

- Wojcieszek et al. BJOG 2016 - 2716 parents, from 40 high- and middle-income countries
- The majority (66%) of parents conceived within 1 year
- Large variation in care, but additional antenatal visits/scans were provided for 67% and 70% of all parents.
- Care addressing psychosocial needs less frequent.
- Parents whose stillbirth occurred ≥ 30 weeks more likely to receive additional care, particularly the option for early delivery after 37 weeks.
- 47–63% of all parents felt elements of quality, respectful care were consistently applied, e.g spending time with parents and involvement in decision-making.




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Table 4. Quality, respectful care overall and by geographic region


	Total (N = 2716) n (%)	Oceania (N = 334) n (%)	Western Europe (N = 260) n (%)	Southern Europe (N = 688) n (%)	Northern Europe (N = 241) n (%)	Latin America (N = 371) n (%)	North America (N = 293) n (%)	UK and Ireland (N = 526) n (%)
Were you given the information you needed?								
Always	1310 (48.2)	173 (51.8)	140 (53.8)	282 (41)	131 (54.4)	173 (46.6)	179 (61.1)	229 (43.5)
Most of the time	801 (29.5)	103 (30.8)	83 (31.9)	190 (27.6)	78 (32.4)	102 (27.5)	71 (24.2)	174 (33.1)
Did your care providers spend enough time with you?								
Always	1276 (47.0)	178 (53.3)	139 (53.5)	235 (34.2)	126 (52.3)	180 (48.5)	177 (60.4)	239 (45.4)
Most of the time	714 (26.3)	84 (25.1)	76 (29.2)	187 (27.2)	75 (31.1)	85 (22.9)	70 (23.9)	137 (26.0)
Did your care providers involve you in decision-making about care?								
Always	1391 (51.2)	184 (55.1)	156 (60)	282 (41)	141 (58.5)	177 (47.7)	194 (66.2)	254 (48.3)
Most of the time	691 (25.4)	85 (25.4)	65 (25)	183 (26.6)	62 (25.7)	88 (23.7)	61 (20.8)	147 (27.9)
Did your care providers talk to you in a way you could understand?								
Always	1622 (59.7)	203 (60.8)	178 (68.5)	351 (51)	166 (68.9)	201 (54.2)	217 (74.1)	303 (57.6)
Most of the time	683 (25.1)	90 (26.9)	60 (23.1)	201 (29.2)	56 (23.2)	87 (23.5)	52 (17.7)	137 (26)
Did your care providers listen to you?								
Always	1443 (53.1)	195 (58.4)	166 (63.8)	297 (43.2)	145 (60.2)	177 (47.7)	203 (69.3)	258 (49)
Most of the time	640 (23.6)	79 (23.7)	51 (19.6)	172 (25)	62 (25.7)	83 (22.4)	50 (17.1)	143 (27.2)
Did your care providers take your concerns seriously?								
Always	1441 (53.1)	196 (58.7)	164 (63.1)	289 (42)	148 (61.4)	181 (48.8)	191 (65.2)	269 (51.1)
Most of the time	601 (22.1)	69 (20.7)	50 (19.2)	172 (25)	56 (23.2)	74 (19.9)	56 (19.1)	124 (23.6)
Did your care providers treat you with kindness and respect?								
Always	1714 (63.1)	220 (65.9)	187 (71.9)	376 (54.7)	171 (71)	224 (60.4)	226 (77.1)	308 (58.6)
Most of the time	580 (21.4)	75 (22.5)	43 (16.5)	168 (24.4)	49 (20.3)	71 (19.1)	46 (15.7)	127 (24.1)

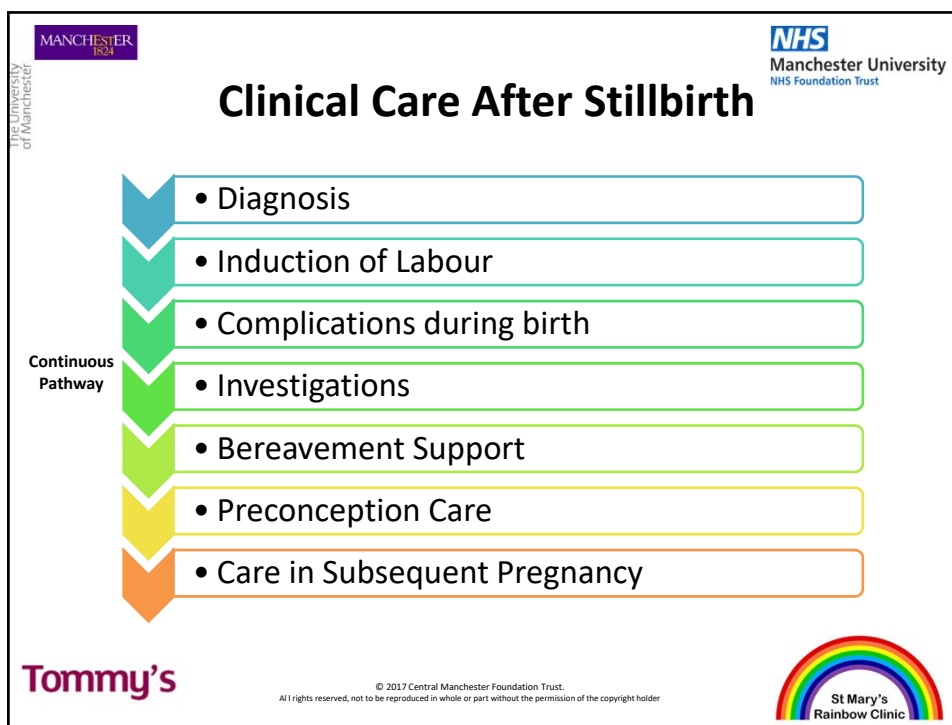
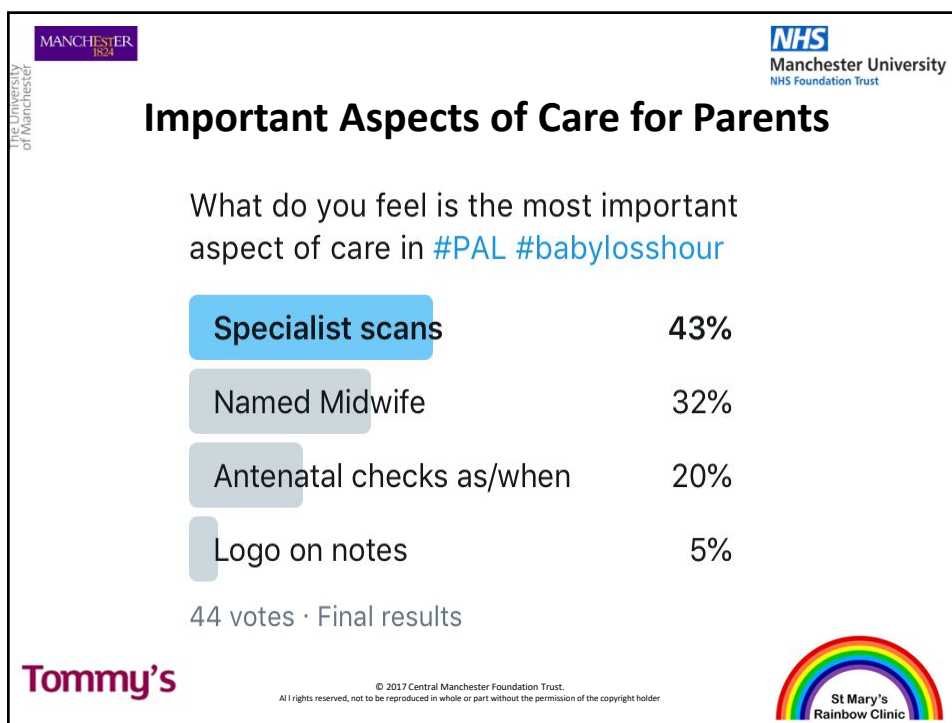
Data for "Other" geographic region (n = 3) not shown in regional breakdown.

Wojcieszek et al. BJOG 2016





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What is Rainbow Clinic?


- Multidisciplinary Specialist antenatal service
- Consultant Led
 - Additional midwifery Support (Research MW/MUP & Bereavement MW)
 - Continuity of Care/Carers
 - Directed investigations
- Women seen at 23 weeks for placental profile scan
- Shared care with relevant services
 - Diabetes / Hypertension Clinic



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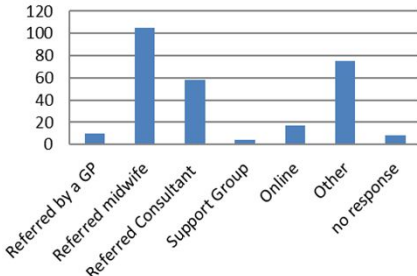
Referral Criteria

Previous stillbirth after 24 weeks
(including multiple stillbirths)


Previous fetal death in utero between
20-24 weeks

Previous neonatal death due to
placental cause
(up to 28 days of age)


Referral to the Clinic




Referral Source	Count (approx.)
Referred by a GP	10
Referred midwife	100
Referred Consultant	60
Support Group	5
Online	20
Other	75
no response	10




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International Consensus Statement

- Jointly led by a team from Toronto and Manchester
- Wider multidisciplinary group of 27 professionals and parents
- Initial workshop in 2015, statement refined and developed over 3-year period, published in 2018
- Published by SOGC
- Endorsed by International Stillbirth Alliance



international
stillbirth alliance

No. 369, December 2018

No. 369-Management of Pregnancy Subsequent to Stillbirth

This Consensus Statement has been prepared by the authors and reviewed by the Society of Obstetricians and Gynaecologists of Canada (SOGC)'s Clinical Practice Obstetrics; Maternal Fetal Medicine and Guideline Management and Oversight Committees, and approved by the Board of the SOGC.

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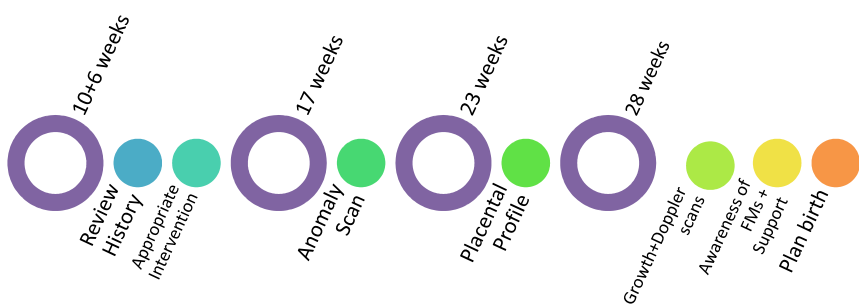


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Care in Subsequent Pregnancy




The timeline shows the following care points:

- 10+6 weeks:** Review History, Appropriate Intervention
- 17 weeks:** Anomaly Scan
- 23 weeks:** Placental Profile
- 28 weeks:** Growth-Doppler scans, Awareness of Fetus + Support, Plan birth



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150mg Aspirin

ajog.org

Expert Reviews

The role of aspirin, heparin, and other interventions in the prevention and treatment of fetal growth restriction

Katie M. Groom, MBBS, BSc (Hons), PhD, FRANZCOG, CMFM;
Anna L. David, BSc (Hons), MB ChB, PhD, FRCOG



American Journal of Obstetrics and Gynecology

Volume 216, Issue 2, February 2017, Pages 110-120.e6



Systematic Review

The role of aspirin dose on the prevention of preeclampsia and fetal growth restriction: systematic review and meta-analysis

Presented as an oral presentation at the 14th World Congress in Fetal Medicine, Crete, Greece, June 23, 2015.

Stéphanie Roberge PhD ^{a, b, c}, Kypros Nicolaides MD ^a, Suzanne Demers MD, MSc ^{a, b, c}, Jon Hyett MD ^a, Nils Chaillet PhD ^a, Emmanuel Bujold MD, MSc ^{a, b, c}

“A 100-150mg evening dose of aspirin commenced prior to 19 weeks’ gestation provides a modest risk reduction in women at risk using conventional obstetric history-based risk factors”











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Compassionate Care in Pregnancy











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Compassionate Care for birth









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Outcome Data


- Preterm birth rate has remained lower than before Rainbow Clinic (15% vs. 21%)
- High Caesarean section rate (dependent on previous IPSB)
- NICU admission reducing in frequency

Year	Period	Births <37w (%)	IOL (%)	El CS (%)	Em CS (%)	SVD (%)	Instrumental Delivery (%)	NICU (%)
2016	Q1	0	41.7	20.7	37.9	37.9	3.4	17.2
	Q2	18.8	68.4	18.8	12.5	65.6	3.1	12.5
	Q3	22.2	79.2	24.4	24.4	44.4	6.7	17.7
	Q4	5.71	22.8	37.1	11.4	45.7	5.71	8.5
2017		6.5	38.6	24.4	9	50	7.95	12.5
2018		15	32.9	27.5	12.9	45.4	3.78	11













The Rainbow Clinic Study Aims

To explore pregnancy, labour, postnatal experiences and outcomes of women attending the Rainbow Clinic and to assess the wider impact of the service



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Objectives


- Gain insight into women's experiences of attending the Rainbow Clinic, explore views on the current provision of care and desired aspects of care that enhance patient experience.
- Understand which factors facilitate and prevent effective care.
- Assess the psychosocial well-being of women attending the clinic.
- Use the study findings to develop a user driven model of care, which will inform the development of services in the UK / globally.

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Study Criteria

- **Inclusion Criteria:**
 - Women who have had prior stillbirth, neonatal death or late termination of pregnancy
 - Women who are currently pregnant
 - Partners of women who attended the Rainbow clinic
- **Exclusion Criteria**
 - Less than 16 years of age
 - Anyone who lacks capacity to consent
 - Women who have been diagnosed with pregnancy complications and have received treatment for an acute mental health issue in this pregnancy




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Rainbow Clinic Study Design


Validated questionnaires


EPDS GAD-7
EQ-5D CWS
<20 weeks
32 weeks
6 weeks PN






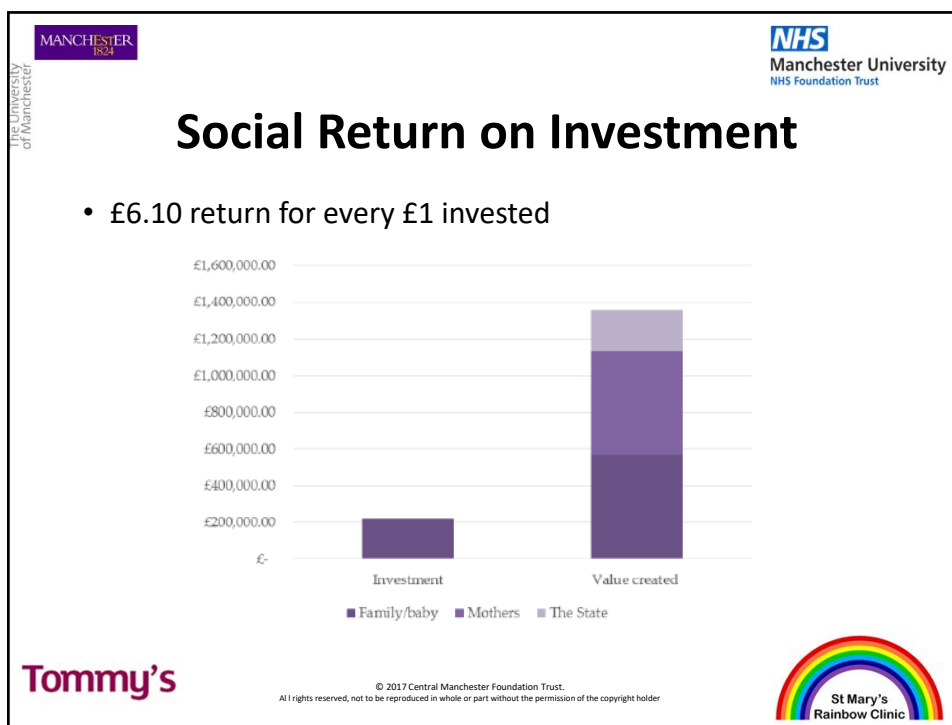
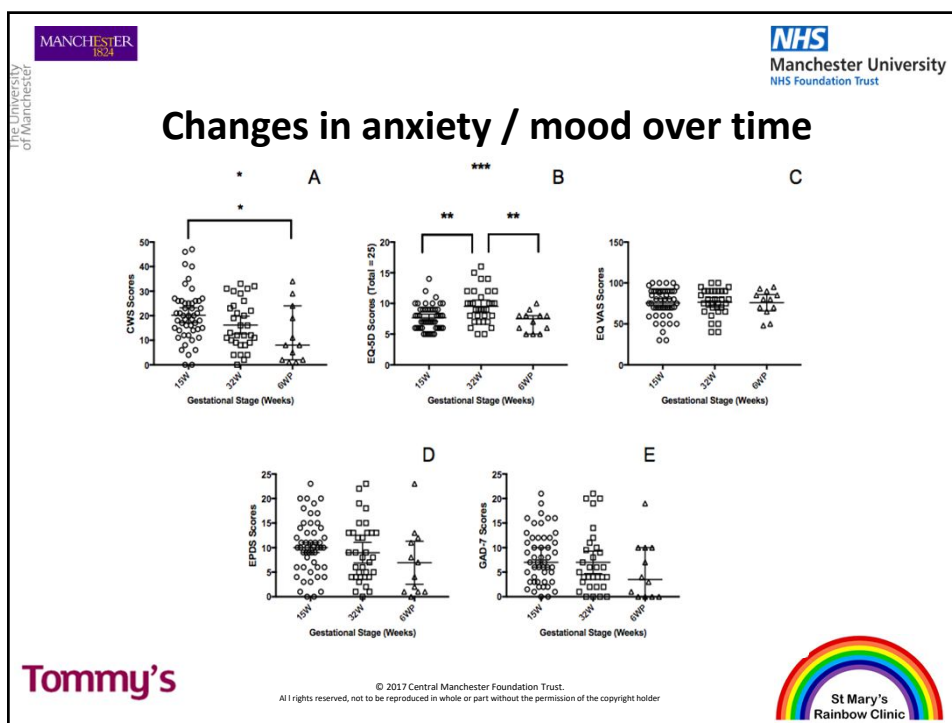
Interviews
32 weeks
6 weeks PN





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Qualitative feedback

“I can’t put financial value to what Rainbow Clinic provides. It is an emotional value”

“My best night’s sleep is on a clinic night”

“Because of Rainbow Clinic, I have the courage to try for another baby”

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Measuring Hair Cortisol

- Measure of long-term stress

Hair Cortisol in Pregnancy after Stillbirth
(n=13)

Trimester	Cortisol (pg/mg)
1 st Trimester	~100
2 nd Trimester	~65
3 rd Trimester	~50*


a

Control data from Smy et al.
BMC Pregnancy and Childbirth (2016) 16:176


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Rainbow Clinic Study - Summary

- Application of various scales to pregnancy after loss demonstrates changes in maternal mental state over time, usually with least symptoms in postpartum period
- Uncertainty over which scales / assessment tools are best to use in this context
- Findings suggest that a dedicated service contributes to a reduction in anxiety and improved experience




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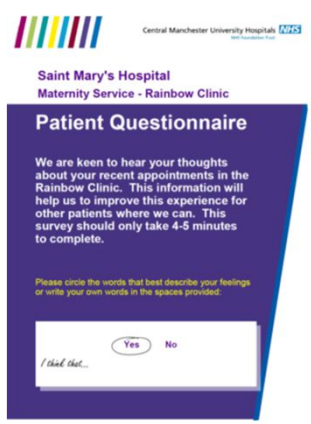


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Patient Experience Questionnaire



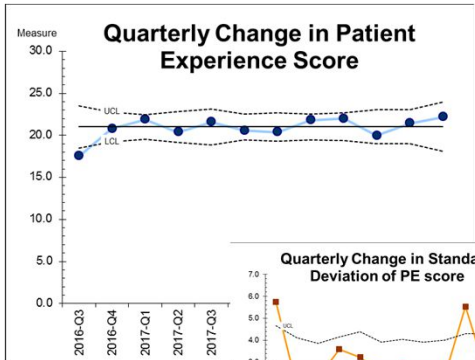
Saint Mary's Hospital
Maternity Service - Rainbow Clinic

Patient Questionnaire

We are keen to hear your thoughts about your recent appointments in the Rainbow Clinic. This information will help us to improve this experience for other patients where we can. This survey should only take 4-5 minutes to complete.

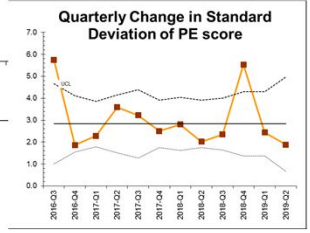
Please circle the words that best describe your feelings or write your own words in the spaces provided.

I feel that... Yes No




Quarterly Change in Patient Experience Score

Quarter	Score
2016-Q3	18.0
2016-Q4	20.0
2017-Q1	21.0
2017-Q2	20.0
2017-Q3	21.0
2017-Q4	22.0
2018-Q1	20.0
2018-Q2	21.0
2018-Q3	22.0
2018-Q4	21.0
2019-Q1	22.0
2019-Q2	21.0




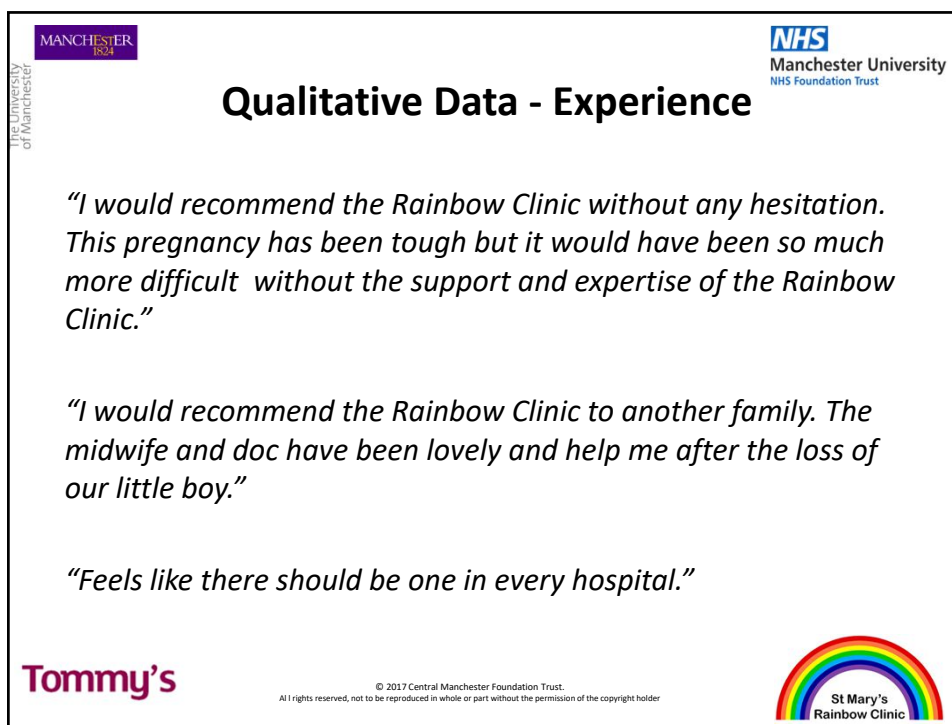
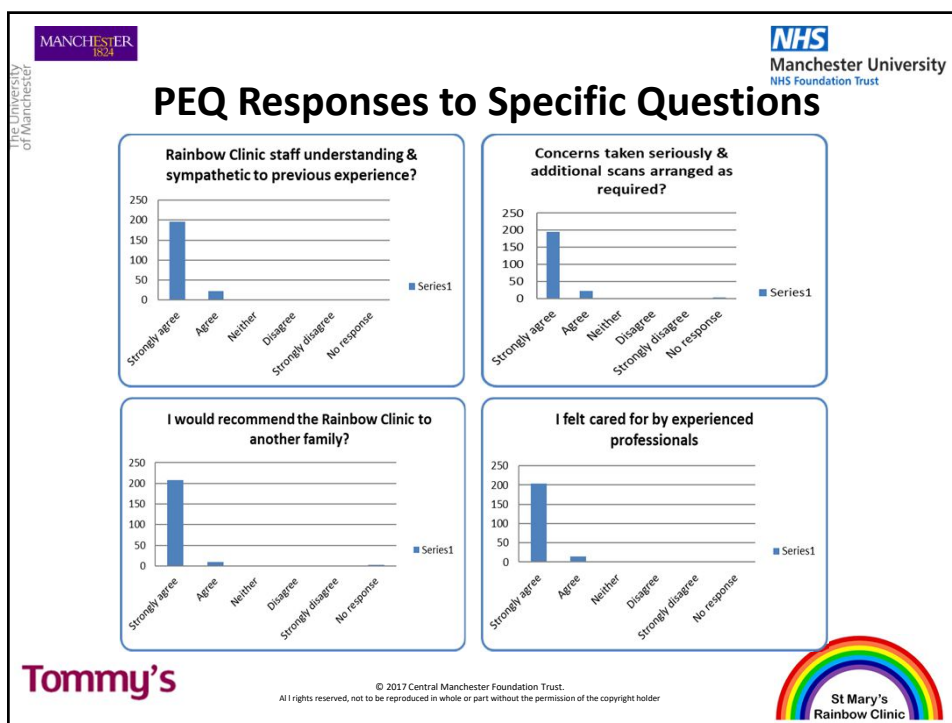
Quarterly Change in Standard Deviation of PE score

Quarter	Score
2016-Q3	6.0
2016-Q4	2.0
2017-Q1	3.0
2017-Q2	3.0
2017-Q3	2.0
2017-Q4	2.0
2018-Q1	2.0
2018-Q2	2.0
2018-Q3	2.0
2018-Q4	5.0
2019-Q1	2.0
2019-Q2	2.0



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Conclusions

- Prior stillbirth is a risk factor for a second stillbirth and other adverse outcomes
- Rainbow Clinic Model addresses parents' needs in a feasible and economically viable way
- Further studies are needed
 - Interpret information from PM + placental exam
 - Inform clinical practice / change management
 - Specific conditions

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Rainbow Clinic Website

<http://www.mahsc.ac.uk/projects/rainbowclinic/>

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The Rainbow Clinic – a specialist antenatal service

Home

Pages

Rainbow Clinic is a specialist antenatal service for women and their families who have experienced the death of a baby in a previous pregnancy.

What does Rainbow Clinic do?

Manchester Children's Hospital exists to ensure that the parents of children in hospital get the best care for their baby by providing them with the best possible care. Those with a child who is in hospital are supported by individual members of staff.

There is a team of about 200 staff in the hospital.

Why does Rainbow Clinic exist?

Women who have had a stillbirth or a baby who has died shortly after being born.

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