

## Background

**Bump2Baby and Me** is a multi-site, randomised controlled trial testing an innovative mHealth intervention in women at risk of developing gestational diabetes. Women were recruited at approximately 12 weeks gestation in Ireland, the UK, Spain, and Australia (n=865, Feb 2021 - Jan 2022). The intervention involves personal mHealth coaching and goal setting from early pregnancy to 1-year postpartum. This low resource approach aims to reach more women, at the right time, provide appropriate weight management support, improve outcomes for both mother and baby, and reduce the healthcare service burden.

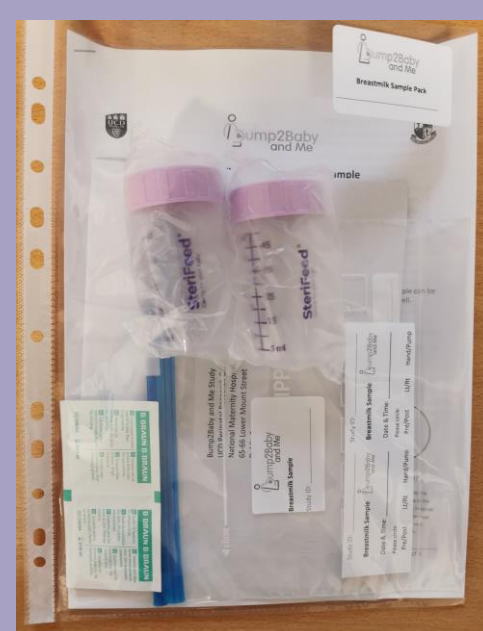
**Breastmilk Substudy:** Participants at the Irish site (**National Maternity Hospital, Dublin**) were invited to participate in a breastmilk substudy, whereby a breastmilk sample was collected at 6-8 weeks' postpartum. The substudy aims to examine the impact of maternal metabolic and hormonal health on breastmilk composition in women at increased risk of gestational diabetes.

## Methodology

Participants were invited at 35 weeks' gestation to provide the breastmilk sample at 6-8 weeks postpartum and provided with an information pack at their next routine appointment. They were re-contacted at 4 weeks' postpartum to enquire about their breastfeeding status and willingness to provide the sample. Arrangements were made for delivery/collection.

### Information Pack Contents

- Instructions for expressing, labelling, storage and transport, including graphic of 6 steps (below)
- 'Tips for making your milk flow'
- Guide to hand expressing and video links
- 2 containers, sterile wipes, labels, labelled zip-lock bag, and envelope



### Breastmilk Sample Requested



#### Providing:

1 mixed sample: 0.5mls of each  
4-9 x 1ml samples of pre-feed  
4-9 x 1ml samples of post-feed

### SIX SIMPLE STEPS

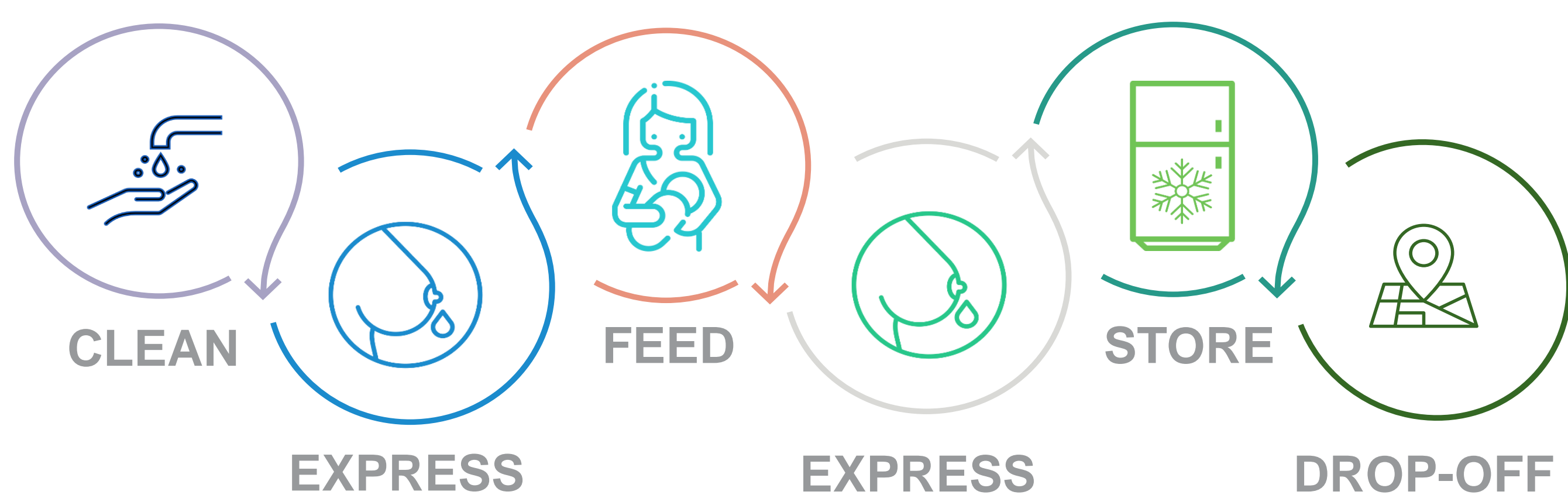


Figure 1: Breastmilk collection methods

## Results

Breastmilk samples were provided by 107 out of 183 participants (58.5%).

Table 1: Breastmilk Substudy Cohort Characteristics (n=107)

Characteristics	Variable	
Age (Years, mean, SD) <sup>a</sup>	35.93	3.83
Parity: Primiparous (n, %)	41	38.3%
BMI (kg/m <sup>2</sup> , median, IQR) <sup>a</sup>	24.71	4.70
RCT Arm: Intervention (n, %)	56	52.3%
Smoked during pregnancy (n, %)	3	2.8%
Gestational diabetes diagnosis (n, %)	10	9.3%
Polycystic ovarian syndrome diagnosis (n, %)	7	6.5%
BMI category	n	%
Healthy ( $\leq 24.9$ kg/m <sup>2</sup> )	58	54.2%
Overweight (25-29.9 kg/m <sup>2</sup> )	27	25.2
Obesity ( $\geq 30$ kg/m <sup>2</sup> )	22	20.6
Education level	n	%
Secondary school or lower	4	3.7%
Post leaving cert course	11	10.3%
University degree	38	35.5%
Graduate/postgraduate degree	52	48.6%
Ethnicity	n	%
White	79	73.8%
Black/African-American	4	3.7%
Asian/South Asian/Pacific Islander	12	11.2%
South East Asian	1	0.9%
Hispanic/Latino	11	10.3%
Feeding Intentions in early pregnancy	n	%
Breastmilk only	86	82.7
Infant formula only	0	0
Mix of breastmilk and formula	16	15.4
No plans	2	1.9

<sup>a</sup> Age and BMI measured in early pregnancy (~12 weeks' gestation) <sup>b</sup> BMI categories based on World Health Organisation criteria. BMI: Body Mass Index, IQR: Interquartile range, RCT: Randomised Control Trial, SD: Standard Deviation.

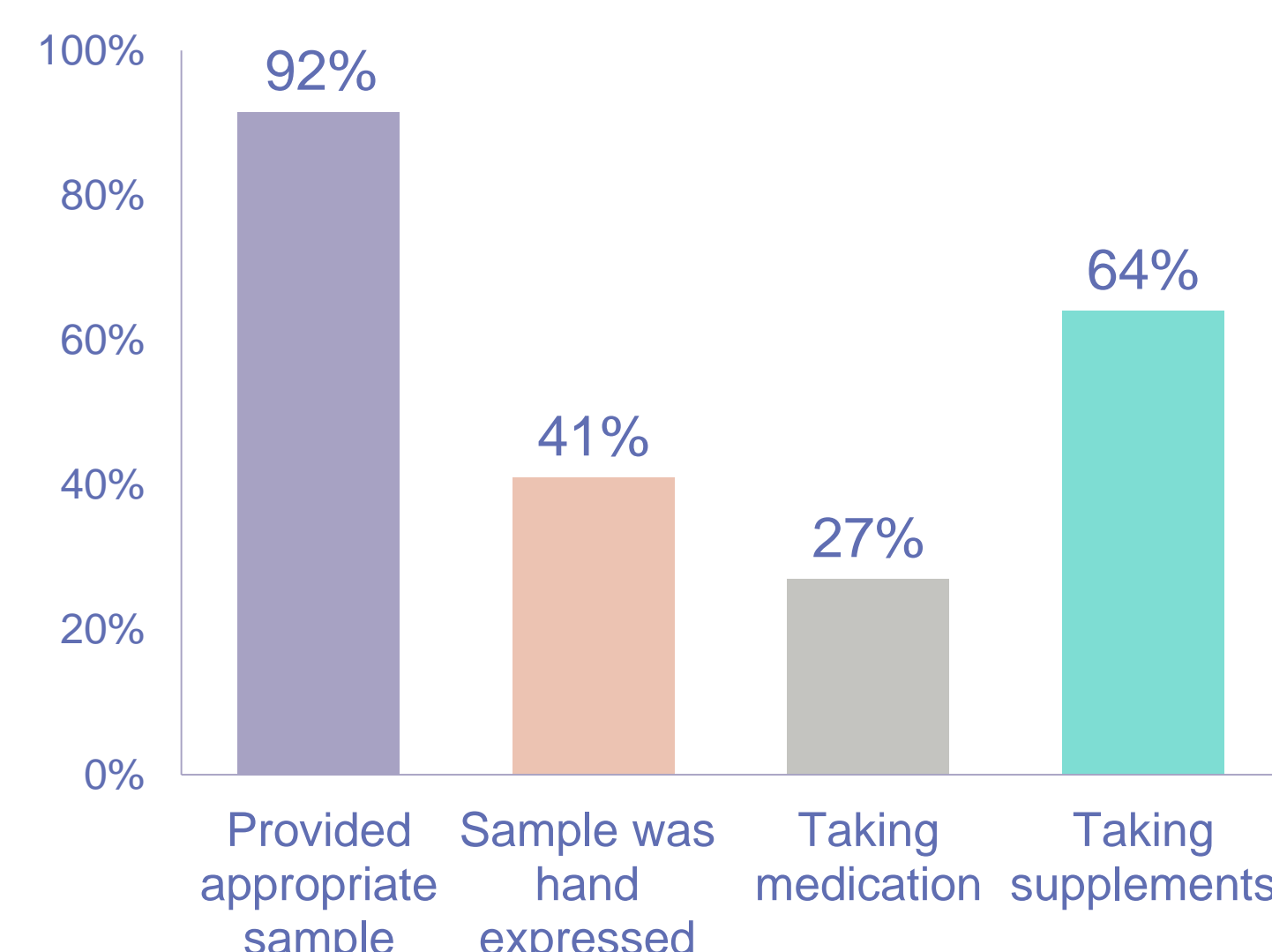


Figure 2: Sample collection information (n=107)

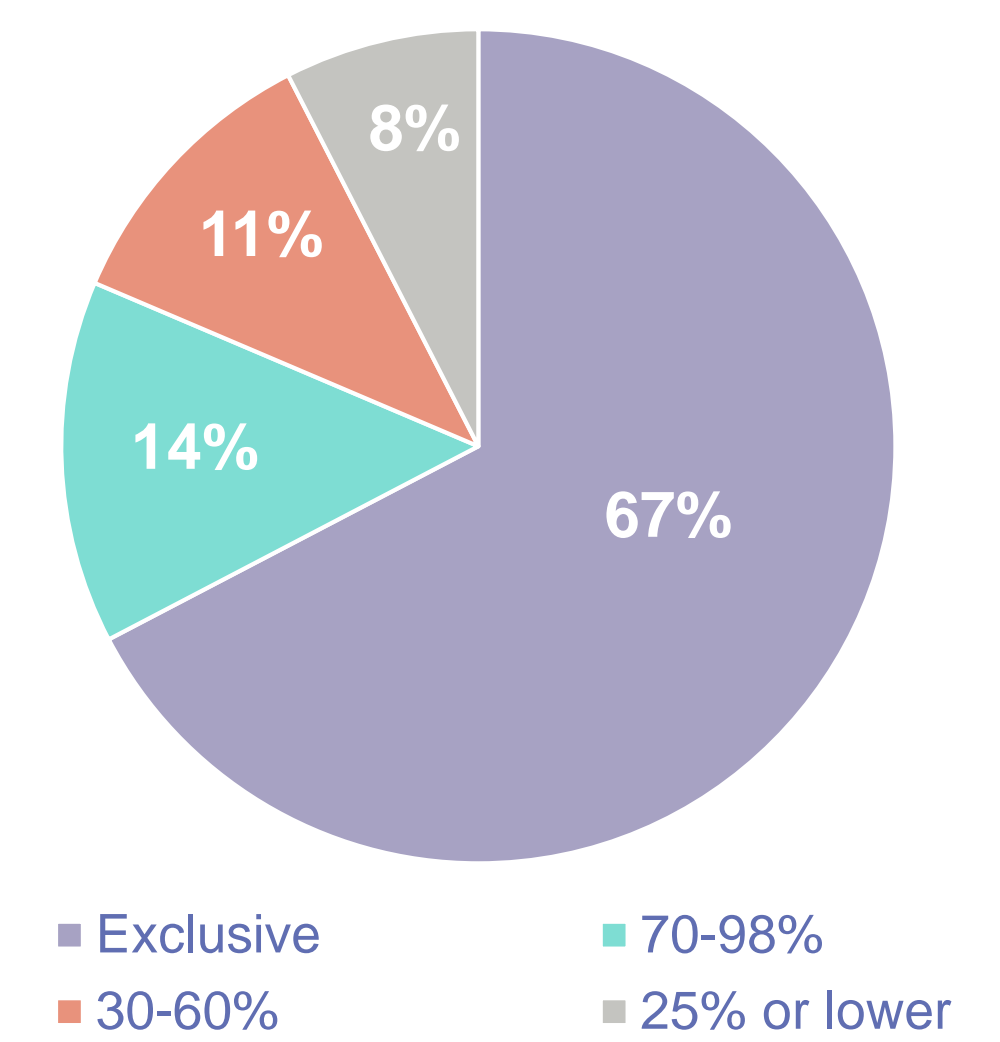


Figure 3: Breastfeeding exclusivity (n=107)

## Conclusion

Women participating in the substudy had a high exclusive breastfeeding intention rate early in pregnancy (82.7%), which was sustained at 6-8 weeks with 67.3% exclusively breastfeeding. This is higher than the national average of 36.7% exclusively breastfeeding at hospital discharge (range 20.1-48.5%)<sup>1</sup>.

**Acknowledgements:** Thanks to the mothers and their babies who are participating in our research and shared their breastmilk with us.

**References:** <sup>1</sup>Health Service Executive, Irish Maternity Indicator System National Report 2020