Baby Buddy: embracing the power of evidence, innovation and collaboration to reduce child health inequalities

Plenary 2: Early integrated health and psychosocial services for vulnerable children: Clinical and systems approaches and evidence for quality care

ISSOP 2018, 27th-29th Sept Bonn
Early Childhood Intervention
Science, Systems and Policies Promoting
Healthy Development of Vulnerable Children



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Charity No. 1120054 Company No. 5866886

# Our Vision Is that all children have the best start in life



To inform and empower parents and professionals to improve outcomes and reduce inequalities



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## What I will share with you

- Brief scene setting
- The Best Beginnings approach
- Our Baby Buddy app
- Reach and impact in the UK
- The opportunity to collaborate



#ISSOP2018

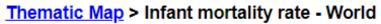
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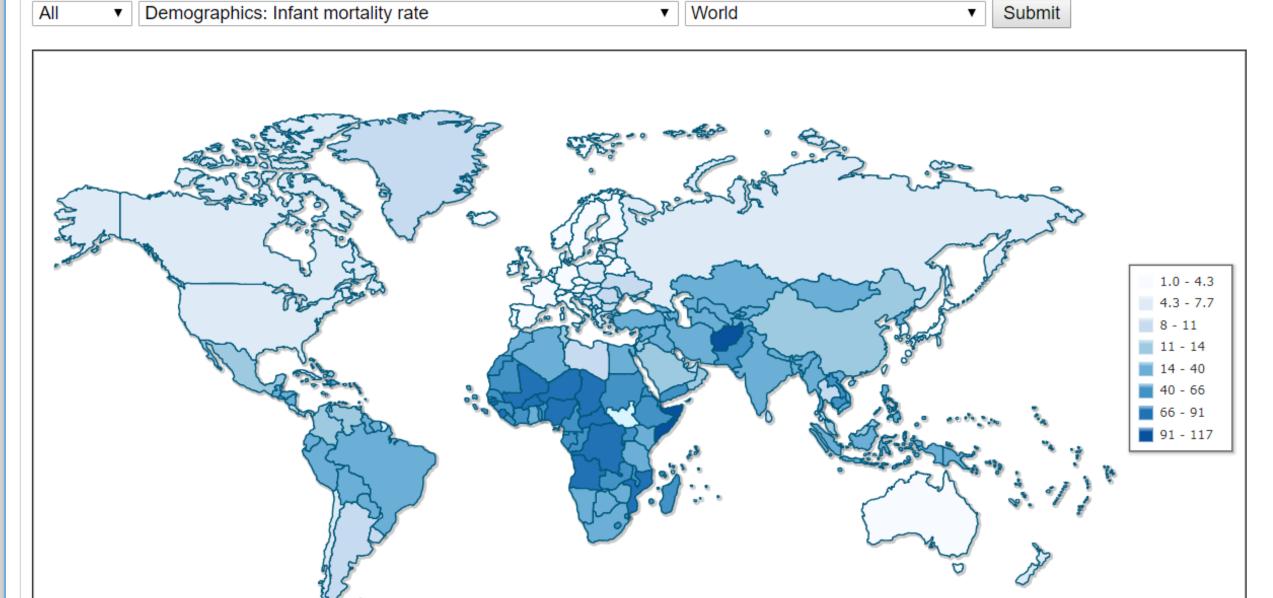
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ΑII Demographics: Infant mortality rate World



#### UNACCEPTABLE INEQUALITIES

Infant Mortality E.g. a baby born in Birmingham is 4x more likely to die in infancy than a baby born in Bath.

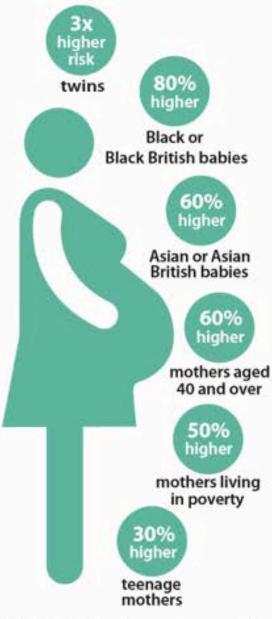
(7.2 per 1,000 births in Birmingham v 1.8 in Bath. England Ave 4.3.)

Born under 2500 grams E.g. a baby born in Newham is > 2x as likely to be born under 2500 grams than a baby born in North Somerset. (10.4% in Newham ve 4.6% in North Somerset. England Ave 7.4%.)

Breastfeeding at 6-8 weeks E.g. A six week old baby in Wandsworth is c. 4x more likely to be breastfed than a baby of the same age born in Knowsley. (77.4% in Wandsworth v 19.9% in Knowsley. England Ave 55%)

Smoking on delivery E.g. a baby born in Blackpool is > 13x more likely to be born to a mother who smokes than a baby born in Westminster (27.2% in Blackpool v 2.1% in Westminster. England Ave is 10.7)





#### Understanding babies' () MBRRACE-UK deaths in the UK: 2014





#### How do rates vary across the UK?

Local mortality rates varied across the UK even after taking into account differences in poverty, ethnicity and the age of the mother



What risks do we know about babies who die before, during or shortly after birth?

#### WINDOW OF OPPORTUNITY





#### **NURTURING CARE**

#### FOR EARLY CHILDHOOD DEVELOPMENT

A FRAMEWORK FOR HELPING CHILDREN SURVIVE AND
THRIVE TO TRANSFORM HEALTH AND HUMAN POTENTIAL











#### 01 Introduction

If we change the beginning of the story, we change the whole story.

The Global Strategy for Women's, Children's and Adolescents' Health (2016-2030)? Is at the heart of the Sustainable Development Goals.<sup>3</sup> Its vision is a world in which every woman, child and adolescent realizes their rights to health and well-being – both physical and mental. That is a world in which they have social and economic opportunities, and are able to participate fully in shaping prosperous and sustainable societies. And an essential part of this vision is that young children's human rights guarantee them the conditions they need to survive and thrive.<sup>4</sup>

We know why this is important. The period from pregnancy to age 3 is when children are most susceptible to environmental influences. That period lays the foundation for health, well-being, learning and productivity throughout a person's whole life, and has an impact on the health and well-being of the next generation. 67

We know what threatens early childhood development. The biggest threats are extreme poverty, insecurity, gender inequities, violence, environmental toxins, and poor mental health.<sup>6</sup> All of these things affect caregivers – by which we mean parents, families and other people who look after children. The threats reduce these caregivers' capacity to protect, support and promote young children's development.

We know what children need to develop to their full potential. They need nurturing care – the conditions that promote health, nutrition, security, safety, responsive caregiving and opportunities for early learning. Nurturing care is about children, their families and other caregivers, and the places where they interact.

We know what strengthens families and caregivers' capacity to support young children's development. An enabling environment is needed: policies, programmes and services that give families, parents and caregivers the knowledge and resources to provide nurturing care for young children. Community participation is a key part of this environment, which also needs to consider the diversity of children and families.

#### A framework for nurturing care

The Nurturing Care Framework provides a roadmap for action. It builds on state-of-the-art evidence about how early childhood development unfolds and how it can be improved by policies and interventions.<sup>8</sup> It outlines:

- why efforts to improve health, well-being and human capital must begin in the earliest years, from pregnancy to age 3;
- the major threats to early childhood development;

**Nurturing care** refers to conditions created by public policies, programmes and services. These conditions enable communities and caregivers to ensure children's good health and nutrition, and protect them from threats. Nurturing care also means giving young children opportunities for early learning, through interactions that are responsive and emotionally supportive.



3 Evaluate and disseminate findings about the impact

of our resources to inform future developments.



#### IN OUR FIRST TEN YEARS WE HAVE

Created five national resources that have reached over 2 million families and that are endorsed by multiple organisations:



- Taken a "Proportionate Universalism" approach
- Been unwavering in our focus on improving outcomes with a commitment to three guiding principles:

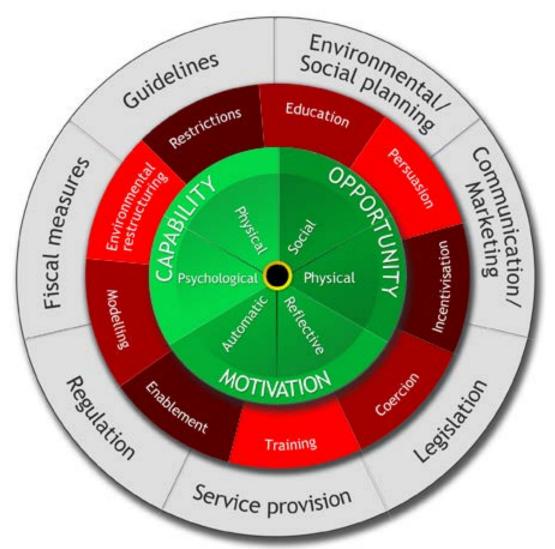
**INNOVATION** 

**COLLABORATION** 

**EVIDENCE** 



#### MICHIE ET AL. BEHAVIOUR CHANGE WHEEL



#### The behaviour change wheel: A new method for characterising and designing behaviour change interventions

Susan Michie, Maartje M van Stralen, and Robert West and Robert West

<u>Author information</u> ► <u>Article notes</u> ► <u>Copyright and License information</u> ►

This article has been cited by other articles in PMC.

Abstract Go to: 

Go

#### Background

Improving the design and implementation of evidence-based practice depends on successful behaviour change interventions. This requires an appropriate method for characterising interventions and linking them to an analysis of the targeted behaviour. There exists a plethora of frameworks of behaviour change interventions, but it is not clear how well they serve this purpose. This paper evaluates these frameworks, and develops and evaluates a new framework aimed at overcoming their limitations.



#### BABY BUDDY

A purposeful intervention in the guise of an engaging and fun app designed to empower parents and parents-to-be, support relationships, enhance conversations and help parents maximise their:

- **b** own physical and mental health
- **b** child's development





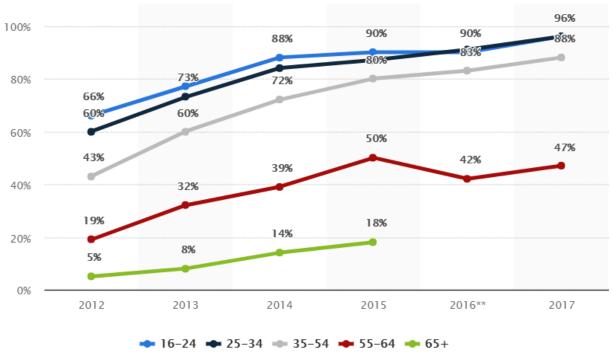
#### **BABY BUDDY**

- Directly empowering and informing parents & professionals
- Augmenting & enhancing existing interventions & support
- Taking an "as well as" not "instead of" approach
- Iterating, based on our constant development feedback loop



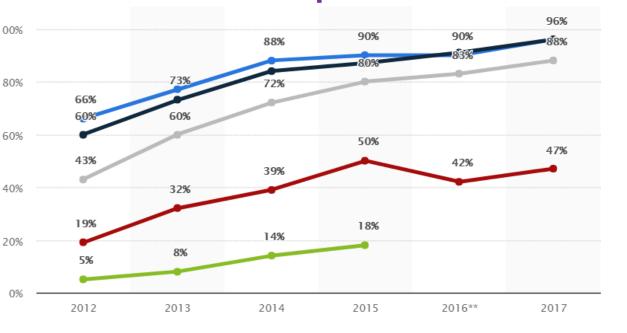


#### The rise of the smartphone



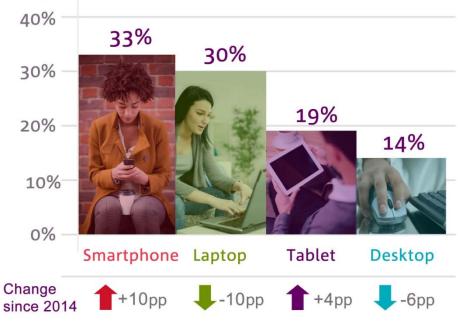
#### The rise of apps

- 5 Million apps available
- >165,000 medical and health apps
- 74% of pregnant women using pregnancy apps don't check validity of information



33% of internet users view their smartphone as the most important device for getting online











# Baby Buddy is available on the NHS Apps Library and endorsed by:

















#### Baby Buddy Awards:

**FINALIST** 







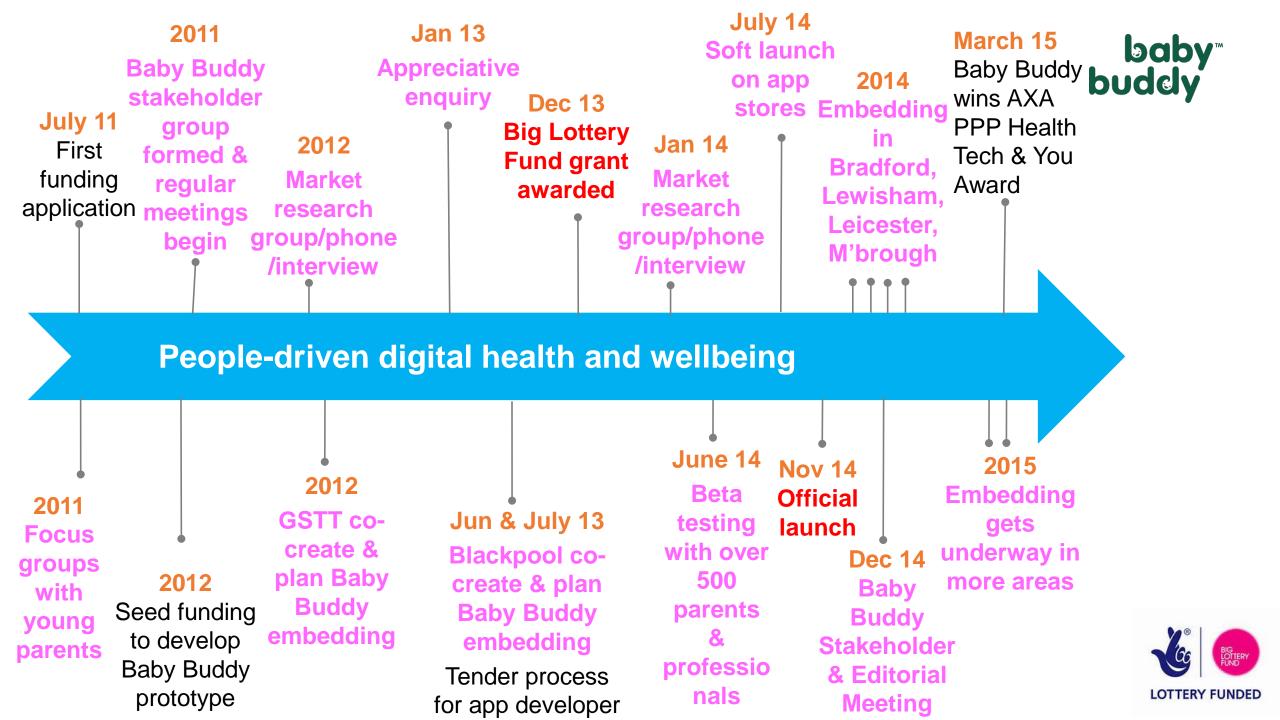














## **Baby Buddy Features**

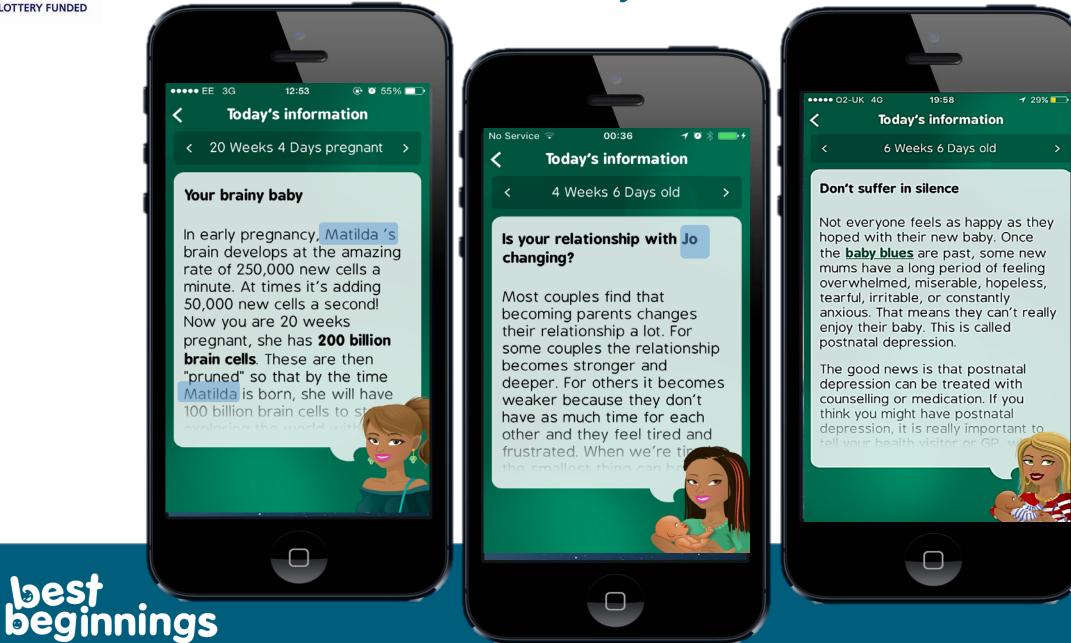








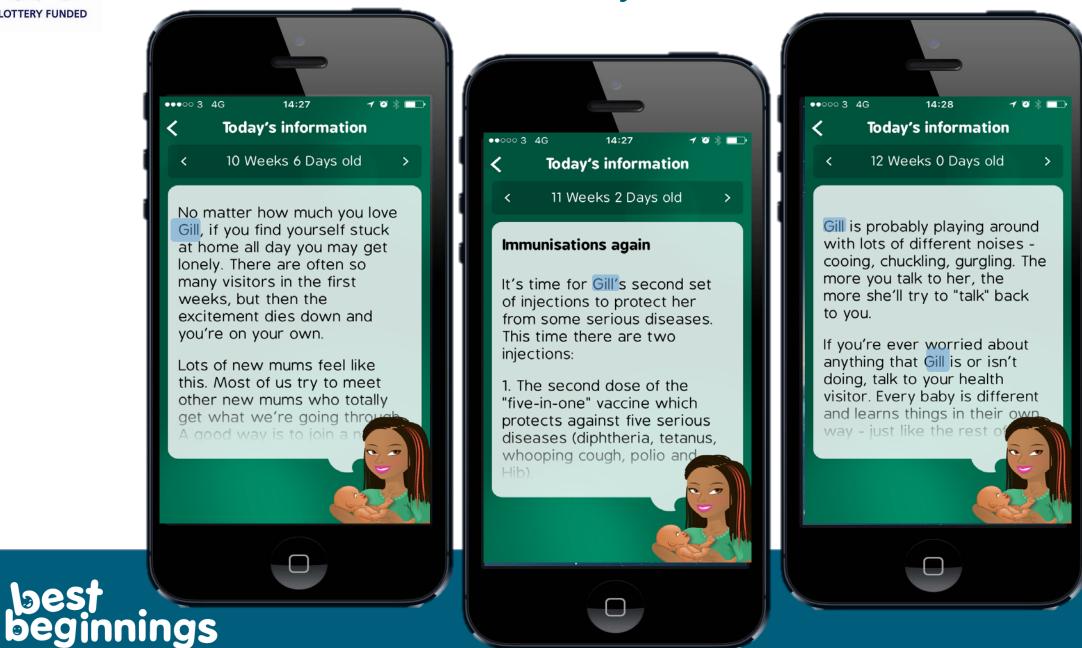
Personalised "Daily information"







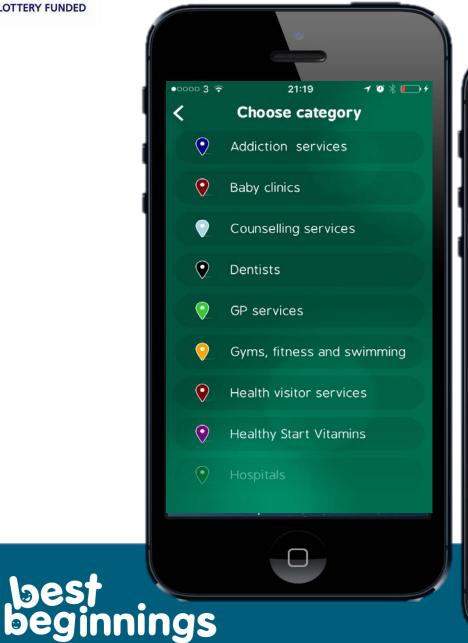
## Personalised "Daily information"



laby budely



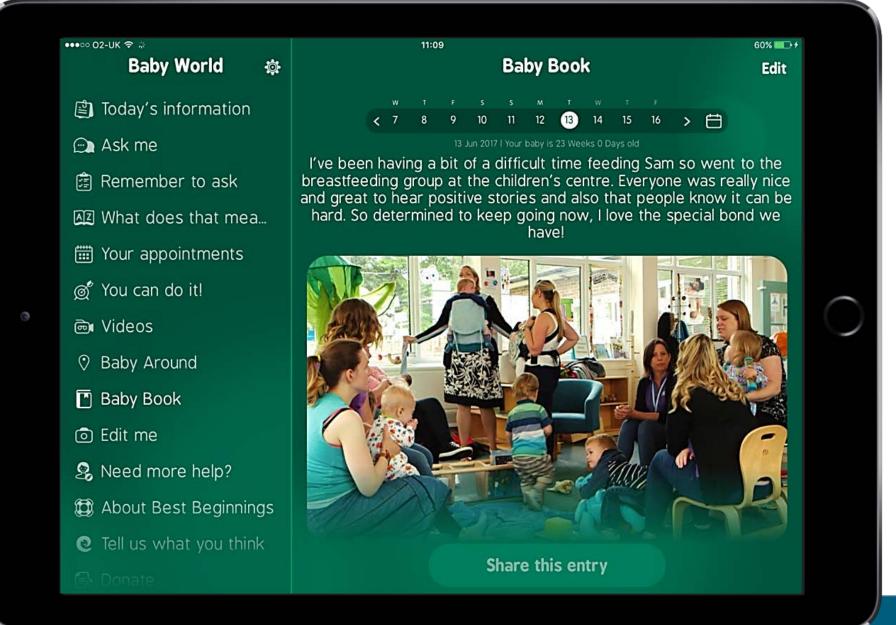
Geolocation – to help uptake of local services











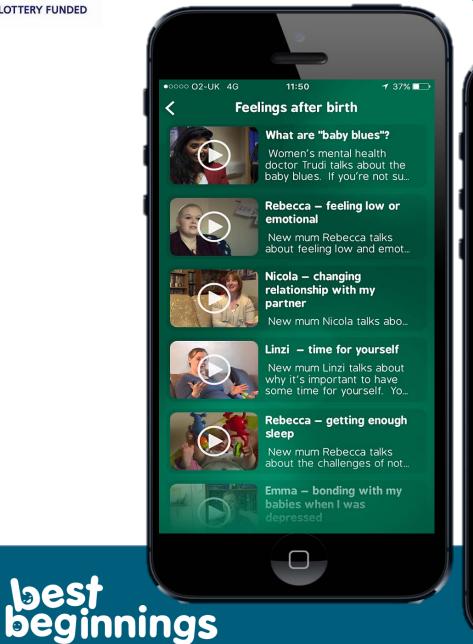


Bump Book and Baby Book

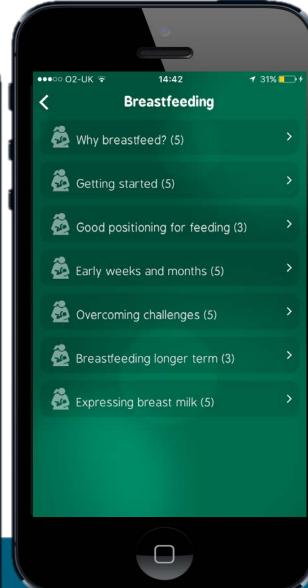




Over 300 videos











Launched in 2008 and updated in 2014, thanks to funding from the Department of Health



- From Bump to Breastfeeding is in the following languages:
  - Urdu
  - Bengali
  - Somali
  - Polish
  - Arabic







School of Health & Social Care

Centre for Midwifery, Maternal

An evaluation of the impact of the 'Bump to breastfeeding' DVD on promoting and supporting breastfeeding By Carol Wilkins , Dr Kath Ryan, Professor Josephine Green

and Professor Peter Thomas

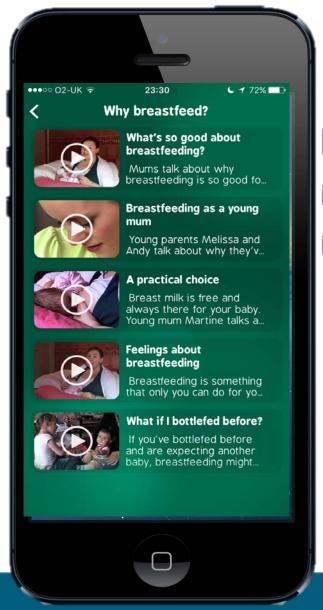
An independent academic evaluation undertaken across 14 hospitals in 2009 found the intervention was effective.

Following this, our From Bump to Breastfeeding films became incorporated into the DH/NHS England /UNICEF/Start4Life breastfeeding care-pathway.





## from bump to breastfeeding









baby" buddy



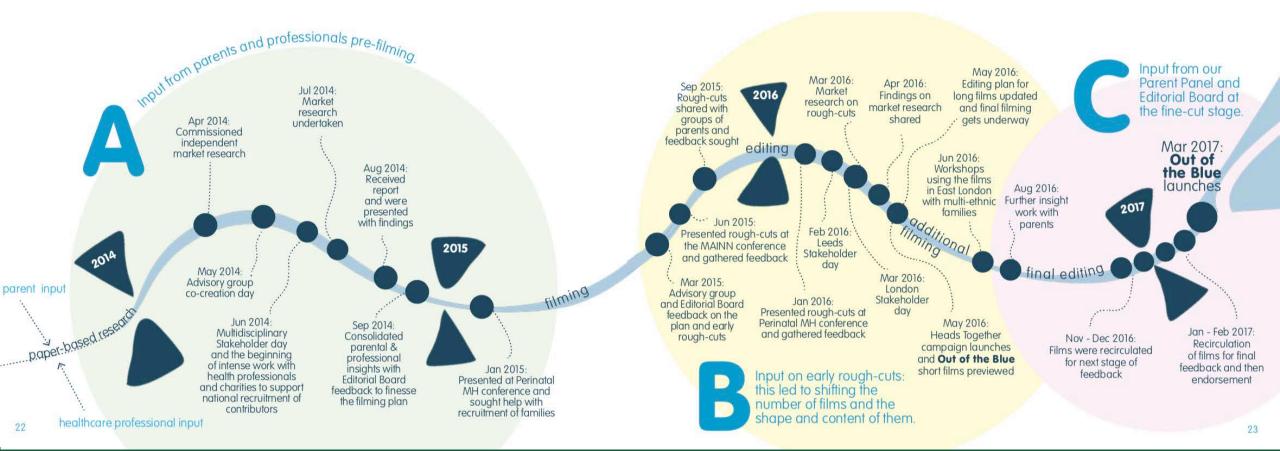
- 1. Antenatal visits what's the point?
- 2. Antenatal visits what can I do?
- 3. Diabetes in pregnancy what's my risk?
- 4. Is my baby growing?
- 5. What should I be eating?
- 6. Tips for staying active
- 7. Can I drink?
- 8. Why I cut out alcohol
- 9. Can I smoke? The facts
- 10. How I stopped smoking
- 11. Taking street drugs the facts
- 12. Immunisation protecting me and my baby
- 13. How can I avoid infection?
- 14. Is my baby moving enough?
- 15. When my baby stopped moving a mum's story
- 16. Vaginal bleeding or discharge the facts
- 17. Itching what does it mean?
- 18. Pre-eclampsia the facts
- 19. New mum? What can go wrong? The facts
- 20. What if my waters break early?
- 21. After my baby is born what's good to know
- 22. When a baby dies
- 23. My mental health matters
- 24. After my baby is born: the coming weeks and months
- 25. What is Our Chance?

All the Our Chance films are integrated into the free Baby Buddy app





# Outothe Promoting mental health for parents and their children









### CHIEF EXECUTIVE OF BABY CHARITY BEST BI ALISON BAUM TELLS HOW WORKING WITH THE HEADS TOGETHER IS 'GAME-CHA

The Duchess of Cambridge (above with her husband and prince Harry at the Heads Together unveiling) and Alison launch Best Beginnings' films (top). Alison lends her support at the

The Duchess of Cambridge has shone a bright light on the importance of maternal mental health and the early years'

ny parents, including Shereece er, who suffered terribly from low m after being bullied at school hom readers may have seen with

Through the Heads Together campaign and the press coverage that followed, Her Royal Highness has shone a bright light importance of

After other VI formal p was the heard th Prince Ha and Head first of n incredible deep unde what need

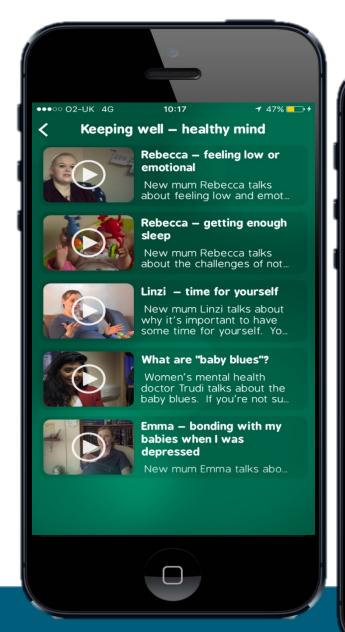
A big par was wonder with such pa in front of and the worl

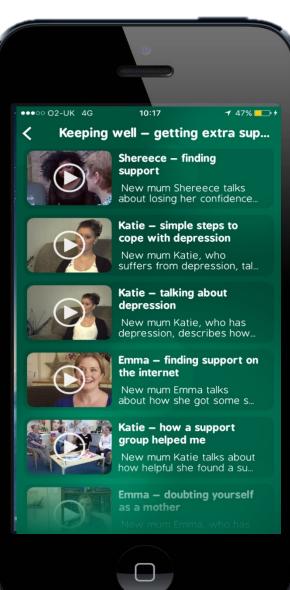
I and the then sat arou visitors and Together ar campaign is London Mara

incredible to team, each of w story to tell, and of volunteers to other 40,000 runs out loud and prot

as important as pl After the race thank the Duk Cambridge ar personally for leadership role ! Heads Together crossing the fit London Marathe







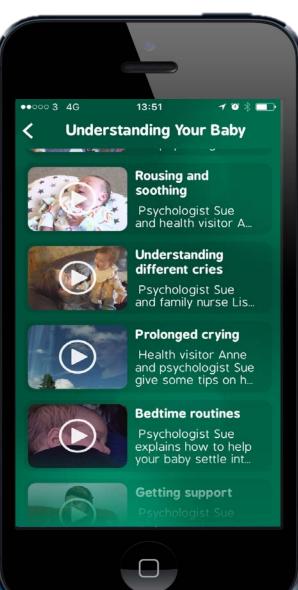




laby" buddy











laby™ budely

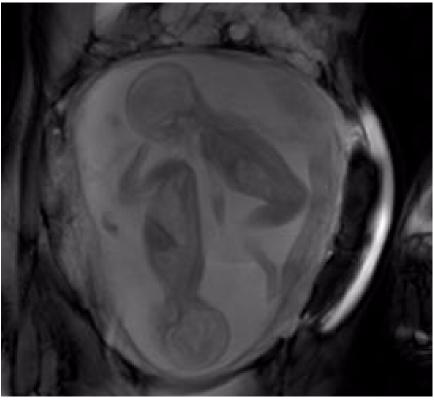






#### Weekly MRI videos to support in utero bonding & healthy behaviors







18 wks 21 wks 26 wks



©iFIND. With thanks to Dr Mary Rutherford & the iFIND project team for giving Best Beginnings permission to use these videos in Baby Buddy.







Over 190,000 downloads to-date

c.1,200 a week

>200 collateral orders

>250,000 leaflets and posters distributed





## beginnings





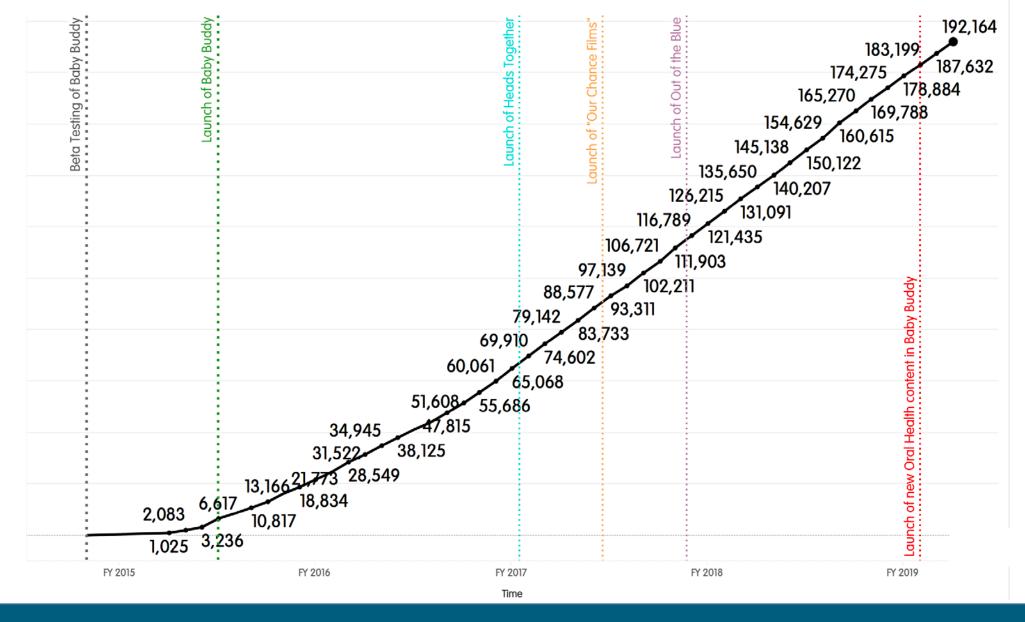
Who is using Baby Buddy and what do they think?



# laby budely



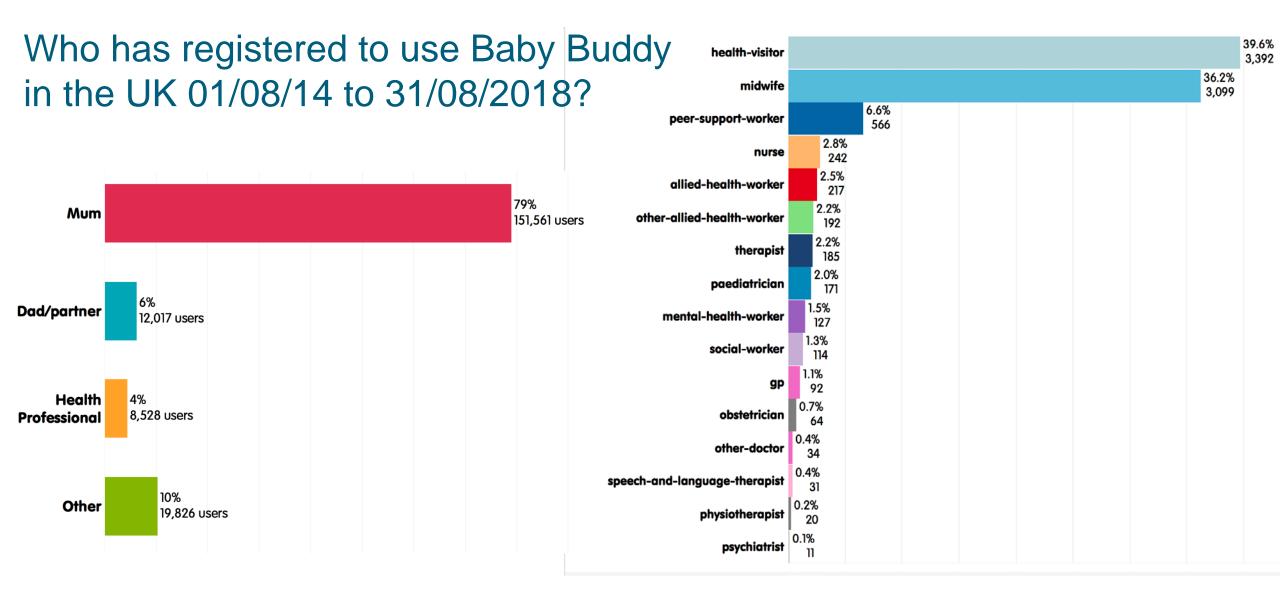






# Cumulative Baby Buddy Registrations across the UK upto 31/08/2018

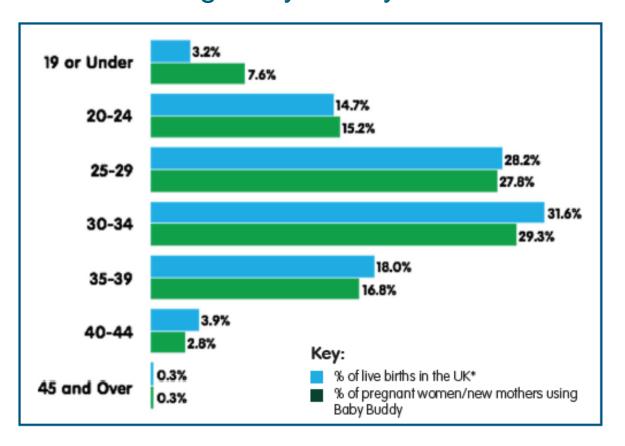








# Age distribution of pregnant women and new mothers using Baby Buddy:



The Top Community Languages in the UK:





## BESPOKE EMBEDDING



Co-creation & production of national innovative evidence-based resources

for parents & professionals that utilise human narrative & technology & augment & enhance what exists.

2 Co-creation & delivery of local/regional plans

to make our resources 'business as usual' within local care-pathways (embedding).

3 Evaluate and disseminate findings about the impact

of our resources to inform future developments.



## BESPOKE EMBEDDING



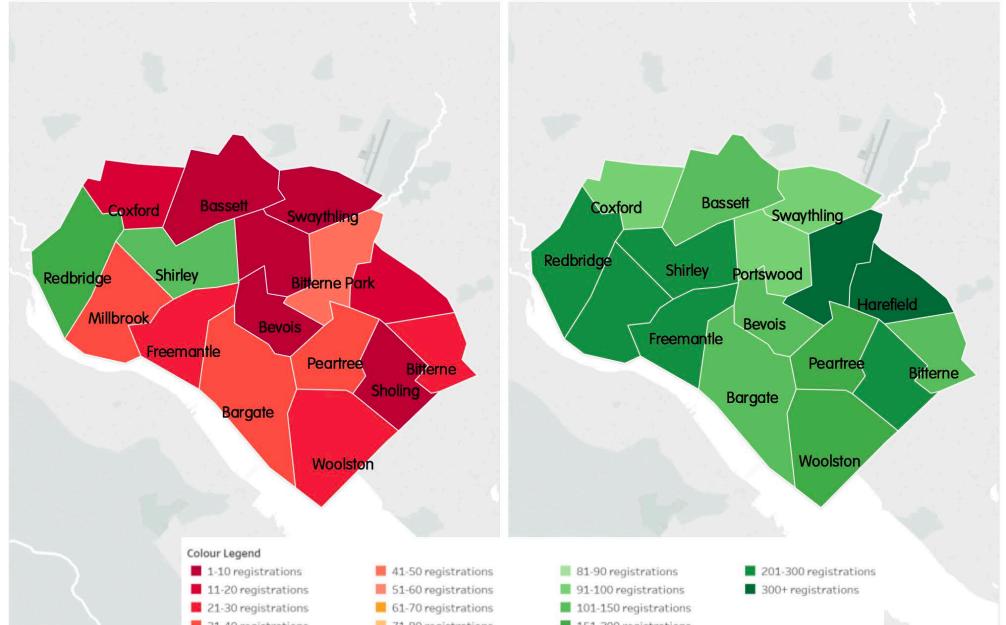
2

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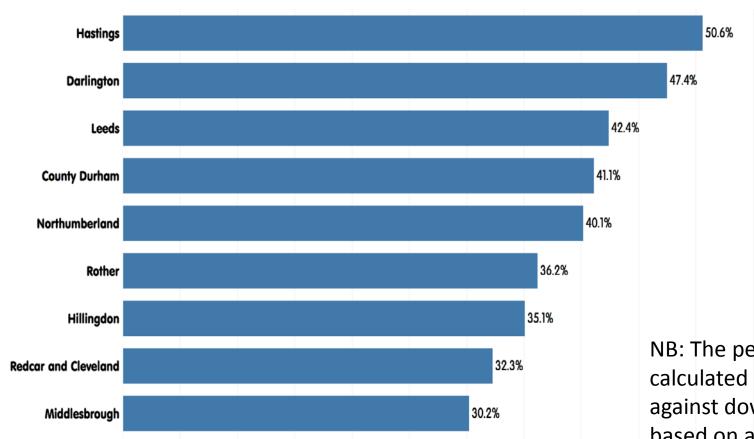
# Heat Map of Nottingham before (2/4/2017) and after (31/08/2018) the SMT kick off meeting



## best beginnings



# Baby Buddy Mum users as a percentage to local birth cohort from Sunday, April 1, 2018 to Saturday, June 30, 2018



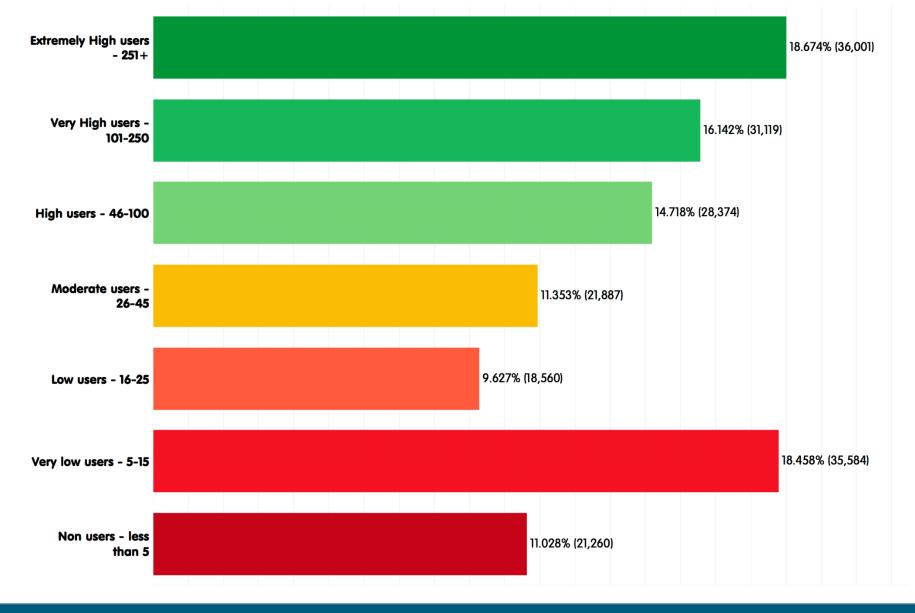
18.1%

NB: The percentage of mothers using Baby Buddy is calculated based on the birth cohort for a time period against downloads for that same time period. It fluctuates based on activity in different area. This slide shows the data from the last complete quarter.



Lewes







Level of usage of Baby Buddy amongst users nationally from August 2014 - 20 September 2018



I was very anxious when getting discharged as I wouldn't have a professional around to answer all the questions I would think of daily (I guess most first time mums have lots of question before and once baby is here) I'm not a fan of searching the Internet for answers as you never know how true/ accurate the information is, so I was glad to know the app is approved by professional. (First time pregnant 27)

I love the weekly update on how my baby is developing and what to expect - I find the information very reassuring when I'm worrying about what's normal and what isn't. This part of the app has also helped me with planning for my baby and knowing what I need to arrange in advance. (First time pregnant, 18)



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# Feedback from professionals about Baby Buddy

**b** 98% professionals feel more confident knowing it has been extensively vetted by a range of experts and is endorsed by a number of organisations

**b** 95% professionals agree that Baby Buddy contains evidence-based/best-practice based information

**b** 100% would recommend Baby Buddy to parents-to-be or new parents





# Pregnant women & new mums completing pop-up inapp surveys to 12/10/17 report the following about Baby Buddy:

- **b** Easy to use (n=10,266): >99%
- **b** Easy to understand (n=10,214): >99%
- **b** Helps me look after my mental health (n=2,507): 87%
- **b** Helps me look after my physical health (n=2,535): 90%
- **b** Helps me feel closer to my baby (n=3,092): 90%
- **b** Helps me feel more confident caring for my baby (n=2,881): 98%
- **b** Helps me get more out of my appointments (n=5,830): 86%





# Next steps

- **b** To embed Baby Buddy in more areas across the UK
- **b** To create BabyBuddy2020 which will include content and functionality:
  - **b** from pre-conception to the third birthday
  - **b** for fathers and partners
  - **b** to support relationships
  - **b** to track and support mental health
  - **b** that interoperates with NHS systems
- **b** To work with other countries to create bespoke versions of Baby Buddy that deliver to their population needs and supports implementation of the Nurturing Care framework





### **NURTURING CARE**

#### FOR EARLY CHILDHOOD DEVELOPMENT

A FRAMEWORK FOR HELPING CHILDREN SURVIVE AND
THRIVE TO TRANSFORM HEALTH AND HUMAN POTENTIAL











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#### A framework for nurturing care

The Nurturing Care Framework provides a roadmap for action. It builds on state-of-the-art evidence about how early childhood development unfolds and how it can be improved by policies and interventions.<sup>8</sup> It outlines:

- why efforts to improve health, well-being and human capital must begin in the earliest years, from pregnancy to age 3;
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# Together we can making a difference for future generations



#PowerOfCollaboration

Alison@bestbeginnings.org.uk

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The following slides are an extract from a recent Behaviour Change Conference where there was a Symposium on Baby Buddy



















# Baby Buddy: reducing health inequalities through digital parenting support

CBC Conference 2018 - Behaviour Change for Health: Digital and Beyond Parallel Session 6, 11.45am-12.40pm Symposium

















# Applying the Behaviour Change Wheel: insights into the development of the Breastfeeding Component of the Baby Buddy App

Dr Adrienne Gordon, Loretta Musgrave, Prof Caroline Homer
The University of Sydney

@AdrienneOz

Baby Buddy Symposium: reducing health inequalities through digital parenting support CBC Conference 2018 - Behaviour Change for Health: Digital and Beyond

DBCI Item	Addressed	Detail
Goals		To inform and empower women of all socioeconomic backgrounds to breastfeed for the first 6 months.
Opportunities		Bump to Breastfeeding Resources, Key need secondary to UK data, Smartphone use, Filmmaking, Big Lottery funding
Constraints		Money, Time Skills in tech – partnership with app developers Staff – partnership with academic institutions for evaluation
Stakeholders	<b>√</b>	Women, families, health professionals, colleges, health service management, NHS
Collaborators	<b>√</b>	Universities, app developers, other charities and pregnancy support organisations
Risks		Projected cost analysis, sustainability plan, staffing support

DCBI Item	Addressed	Detail
Concept		Literature review, qualitative and quantitive needs assessment Barriers and enablers
Knowledge		Market research, Literature and policy review, review of existing interventions, computer science of user engagement
Development		Person based approach' for look, feel and functionality Extensive qualitative research, co-creation and stakeholder input
Testing		Focus groups, interviews, surveys, observation of use, in-app data, pre/post embedding

**Implementation** 

**Promotion** 

Tested for usability and functionality pre implementation

Endorsed by key agencies, eg NHS, Royal Colleges

Iterative process, sustainability, operating systems, servers

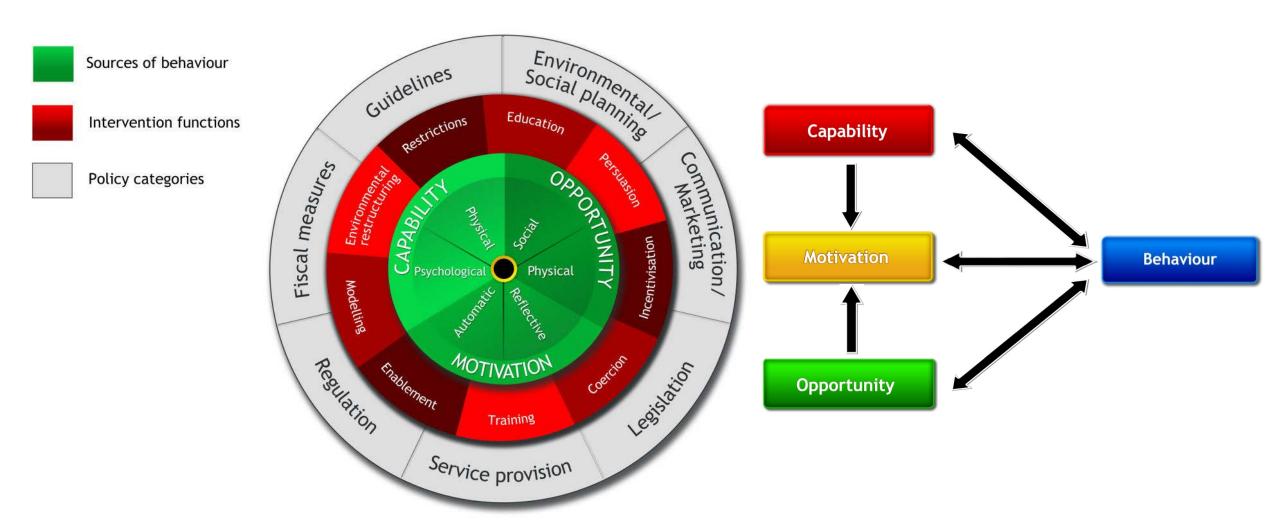
Ongoing evaluation post implementation

External advisory group, PR team

# **APPEASE Criteria**

Acceptability	Users, Implementers, Funders
Practicability	High reach, scalable, not limited by geography
Effectiveness	Academic Evaluations positive
Affordability	Free for end-user
Safety	Evidence-based, best practice,
	health literacy level age 11
Equity	Proportionate universalism

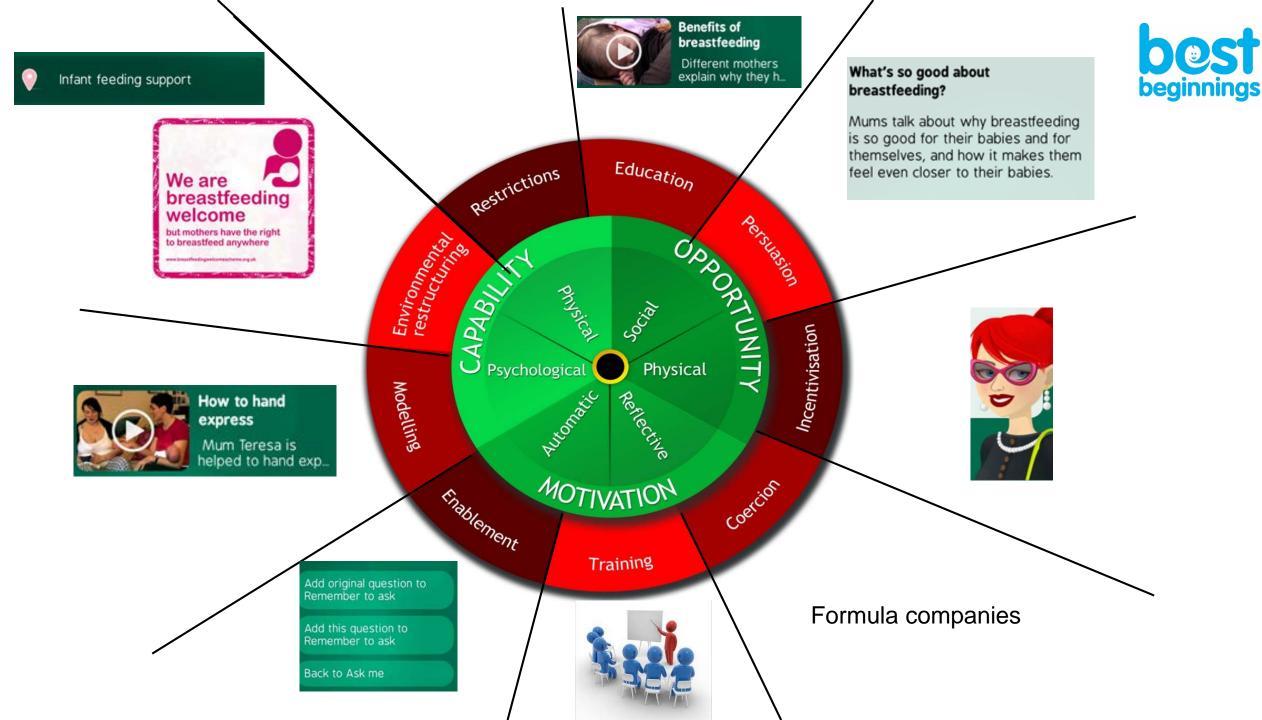
## **Behaviour Change Wheel**



Michie et al (2011) The Behaviour Change Wheel: a new method for characterising and designing behaviour change interventions, *Implementation Science* 

# Breastfeeding – understanding behaviour

Capability	Physical capability	<ol> <li>Knowledge of how to attach and position the baby</li> <li>Physical capability and skills to attach and position the baby</li> </ol>
	Psychological capacity	<ol> <li>A lack of knowledge about the benefits of breastfeeding</li> <li>Belief in ability to produce required amount of breast milk</li> <li>Beliefs about the consequences of not breastfeeding</li> </ol>
Motivation	Reflective motivation	<ol> <li>Needing help with breastfeeding means there is a problem</li> <li>Disappointment with self if unable to breastfeed</li> <li>I don't need help - unrealistic optimism</li> </ol>
	Automatic motivation	<ol> <li>Fear of failing at breastfeeds means offer bottle instead</li> <li>Fear of being a bad mother</li> </ol>
Opportunity	Physical opportunity	1. Perception that breastfeeding is difficult due to the unpredicatable nature of demand feeding
	Social opportunity	2. Provision of breastfeeding friendly social spaces



## The Australian Academics Concluded:

Development of the breastfeeding component of Baby Buddy follows the principles on development of a DBCI and maps well to the BCW

Using the structured process highlights areas for future developments

Evaluation of health outcomes will continue to inform Baby Buddy

Ongoing input from stakeholders, key to relevance and sustainability

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