Fit for the Future: Building capability and readiness

Baby Buddy: A case highlighting the power of evidence, innovation and collaboration to improve outcomes and reduce inequalities

Alison Baum OBE
CEO and Founder, Best Beginnings

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@BabyBuddyApp
@AlisonBaum www.bestbeginnings.org.uk
Charity No. 1120054 Company No. 5866886

In my presentation I'll cover

- Best Beginnings' approach
- Context – incl. four policy documents
- Baby Buddy – what, why & how
- Baby Buddy - reach, impact & plans
- Insights and reflections

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Our Vision

Is that all children have the best start in life

Our Aim

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

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WINDOW OF OPPORTUNITY

Pre-conception

Child's 3rd birthday

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

WHO DO WE COLLABORATE WITH?

- Parents of all backgrounds
- Other charities and community groups
- People in the public eye
- Front-line professionals
- Commissioners and other funders
- Royal Colleges, other professional bodies
- NHS Trusts & Local Authorities
- Government departments

1 **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.

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Our three stage iterative approach

MICHIE ET AL. BEHAVIOUR CHANGE WHEEL

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

Susan Michie,[1] Maartje M van Stralen,[2] and Robert West[3]

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Abstract

Go to:

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.

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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 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' deaths in the UK: 2014

MBRRACE-UK
Mothers and Babies: Reducing Risk through Audits and Confidential Enquiries across the UK

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

Out of over 780,000 births in 2014...

5,623 registered deaths of babies before, during or within the first 4 weeks of birth

4,633 deaths of babies born from 24 weeks of pregnancy

3,252 stillbirths

1,381 neonatal deaths

6 deaths for every 1,000 births

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

They ranged from **4.9** to **7.1** per 1,000 births

February 2010

Page 52

number of years spent free of disability are greater than those based simply on total years of life. In other words, people in lower socioeconomic groups not only have shorter lives but they also spend more of their later years with a disability. In Chapter 5 we consider the implications of the steep gradient in

Figure 2.8 Number of years from birth spent with disability, persons by neighbourhood income level, England, 2001

Source: Office for National Statistics[54]

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Policy Objective A
Give every child the best start in life

Priority objectives

1. Reduce inequalities in the early development of physical and emotional health, and cognitive, linguistic, and social skills.
2. Ensure high quality maternity services, parenting programmes, childcare and early years education to meet need across the social gradient.
3. Build the resilience and well-being of young children across the social gradient.

A.1 Introduction

Giving every child the best start in life is crucial to reducing health inequalities across the life course. The foundations for virtually every aspect of human development – physical, intellectual and emotional – are laid in early childhood. What happens during these early years, starting in the womb, has lifelong effects on many aspects of health and well-being – from obesity, heart disease and mental health, to educational achievement and economic status (see summary of data in Chapter 2). To have an impact on health inequalities we need to address the social gradient in children's access to positive early experiences. Later interventions, although important, are considerably less effective if they have not had good early foundations.[255]

The importance of the early years, from pre-birth to the age of 5, to later life outcomes is widely acknowledged and consequently has received considerable policy attention. Since 1997 the Government has made the reduction of child poverty a top priority and there has been significant investment in the expansion of early years education and care, extension of parental leave, increased family support through the development of Sure Start Children's Centres and fiscal measures designed to support families with children. This activity represents a revolution in early years provision and parenting

October 2014

Even people with long term conditions, who tend to be heavy users of the health service, are likely to spend less than 1% of their time in contact with health professionals. The rest of the time they, their carers and their families manage on their own. As the patients' organisation National Voices puts it: personalised care will only happen when statutory services recognise that patients' own life goals are what count; that services need to support families, carers and communities; that promoting wellbeing and independence need to be the key outcomes of care; and that patients, their families and carers are often 'experts by experience'.

As a first step towards this ambition we will improve the information to which people have access—not only clinical advice, but also information about their condition and history. The digital and technology strategies we set out in chapter four will help, and within five years, all citizens will be able to access their medical and care records (including in social care contexts) and share them with carers or others they choose.

Primary care of the future will build on the traditional strengths of 'expert generalists', proactively targeting services at registered patients with complex ongoing needs such as the frail elderly or those with chronic conditions, and working much more intensively with these patients. Future models will expand the leadership of primary care to include nurses, therapists and other community based professionals. It could also offer some care in fundamentally different ways, making fuller use of digital technologies, new skills and roles, and offering greater convenience for patients.

An expanding set of NHS accredited health apps that patients will be able to use to organise and manage their own health and care; and the development of partnerships with the voluntary sector and industry to support digital inclusion.

February 2017

NATIONAL MATERNITY REVIEW

BETTER BIRTHS

Improving outcomes of maternity services in England

A Five Year Forward View for maternity care

4.23. A number of websites and apps have already been developed by public, private and third sector organisations) to help women manage their pregnancy and childcare, such as the Baby Buddy App, by the charity Best Beginnings. This is to be encouraged.

Baby Buddy App

Baby Buddy is a free, electronically delivered health intervention produced by the charity Best Beginnings which guides women through pregnancy and for the first six months of their child's life. The app, which is endorsed by the Department of Health and many professional bodies, provides tailored information and interactive, health promoting features designed to inform and empower expectant and new mothers to encourage them to use local services and to help make "every contact count". Baby Buddy delivers pregnancy and parenting information and prompts for reflection and action, in the voice of a chatty, knowledgeable friend. This digital friend or "Buddy" is created by the user at download. Early evaluation of the application has indicated that the app is helping to increase parents' knowledge and confidence, look after

October 2018

NURTURING CARE
FOR EARLY CHILDHOOD DEVELOPMENT

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

unicef for every child

WORLD BANK GROUP

World Health Organization

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.

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BABY BUDDY

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

- own physical and mental health
- 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

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

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

Smartphone is a key & growing information source

Ofcom Communications Market Report 2015, Statistia, 2017, Lupton 2016
(with thanks to Dr Adrienne Gordon)

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LOTTERY FUNDED

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

Baby Buddy Awards:

FINALIST

FIRST PRIZE

WINNER
The NHS in the North West
Excellence in Supply Awards
2016

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LOTTERY FUNDED

Baby Buddy Features

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LOTTERY FUNDED

Personalised “Daily information”

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Personalised “Daily information”

LOTTERY FUNDED

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LOTTERY FUNDED

Geolocation – to help uptake of local services

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Bump Book and Baby Book

LOTTERY FUNDED

Over 300 videos

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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.

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from bump to breastfeeding

from bump to breastfeeding

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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

@BestBeginnings @CyUniTech @imperialcollege @UniofNewcastle @UCLan @Sydney_Uni @BabyBuddyApp

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	✓	Women, families, health professionals, colleges, health service management, NHS
Collaborators	✓	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	✓	Tested for usability and functionality pre implementation Ongoing evaluation post implementation Iterative process, sustainability, operating systems, servers
Promotion	✓	External advisory group, PR team Endorsed by key agencies, eg NHS, Royal Colleges

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

Infant feeding support

What's so good about breastfeeding?

Mums talk about why breastfeeding is so good for their babies and for themselves, and how it makes them feel even closer to their babies.

Add original question to Remember to ask

Add this question to Remember to ask

Back to Ask me

Formula companies

Understanding your baby

from bump to breastfeeding

DVD

small wonders

DVD

out of the blue

baby buddy™ films

baby buddy web and mobile app

OUR CHANCE FOR A SAFER PREGNANCY

Web

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

Out of the blue

promoting mental health for parents and their children

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Part of Heads Together

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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.

Commissioned unlockable feature for those in Norfolk

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Over 190,000 downloads to-date

c.1,200 a week

>200 collateral orders

>250,000 leaflets and posters distributed

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

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Who has registered to use Baby Buddy in the UK 01/08/14 to 31/08/2018?

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

The Top Community Languages in the UK:

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Age distribution and community languages of pregnant women and new mothers using Baby Buddy nationally compared to ONS up to 31/08/18

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BESPOKE EMBEDDING

1 **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

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Leeds pre and post embedding

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

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.

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Level of usage of Baby Buddy amongst pregnant women and new mothers from July 2017-July 2018

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Feedback from professionals about Baby Buddy

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

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

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

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

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

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)

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)

Our plans for Baby Buddy

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

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Digital innovation can empower citizens, support health professionals, save money & time, reduce inequalities & improve outcomes when:

- a clear identified need or “problem” to solve is the starting point
- meaningful and iterative co-creation with its intended audience is at the heat of its development #UserLedDesign
- we use data to inform development AND deployment
- understand that there are no magic wands and that technology doesn’t “do itself”
- We work WITH front-line professionals & families, don’t do TO

Together we can making a difference for future generations

#PowerOfCollaboration

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Baby Buddy: reducing health inequalities through digital parenting support

Chair: Dr Ann Hoskins @HoskinsAnn
Discussant: Prof. Mitch Blair @blair_mitch Imperial College London
Alison Baum OBE @AlisonBaum Best Beginnings
Dr Adrienne Gordon @AdrienneOz University of Sydney
Dr Sam Ginja, representing the BaBBLeS research team
Dr Nicola Crossland, University of Central Lancashire
Dr Nicos Middleton, Cyprus University of Technology
Panel Discussion

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

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