Imperial College London

University of Hertfordshire UH

The road to establishing the bank with a difference

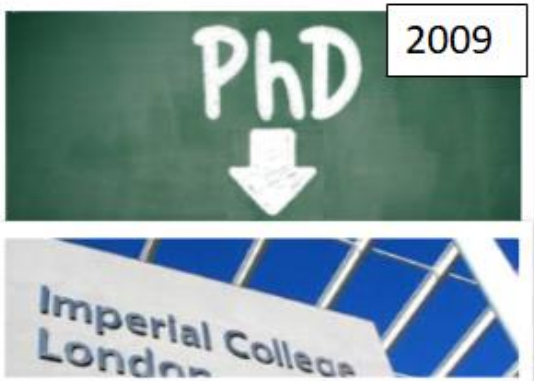
Dr Natalie Shenker

BM BCh (Oxon), MSc, PhD (Imp)

UNIVERSITY OF OXFORD

1997

2003

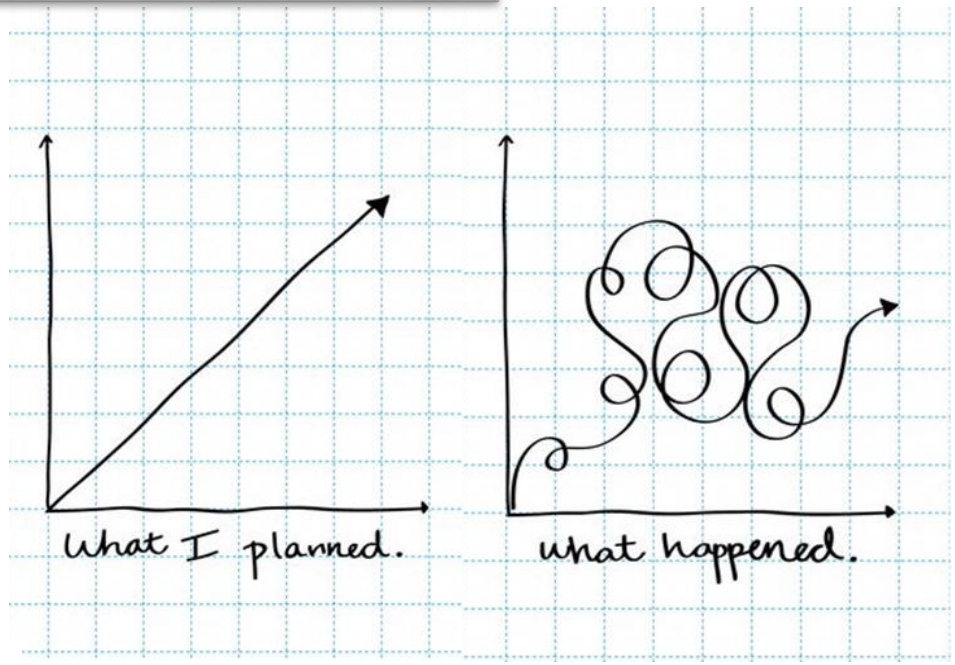


2009

Imperial College London

2012

How Natalie met Gillian



2013

1997

Every Drop Counts UKAMB

www.ukamb.org

emba EUROPEAN MILK BANK ASSOCIATION

2010

NICE National Institute for Health and Care Excellence

Donor milk banks: service operation

Clinical guideline [CG93] Published date: February 2010

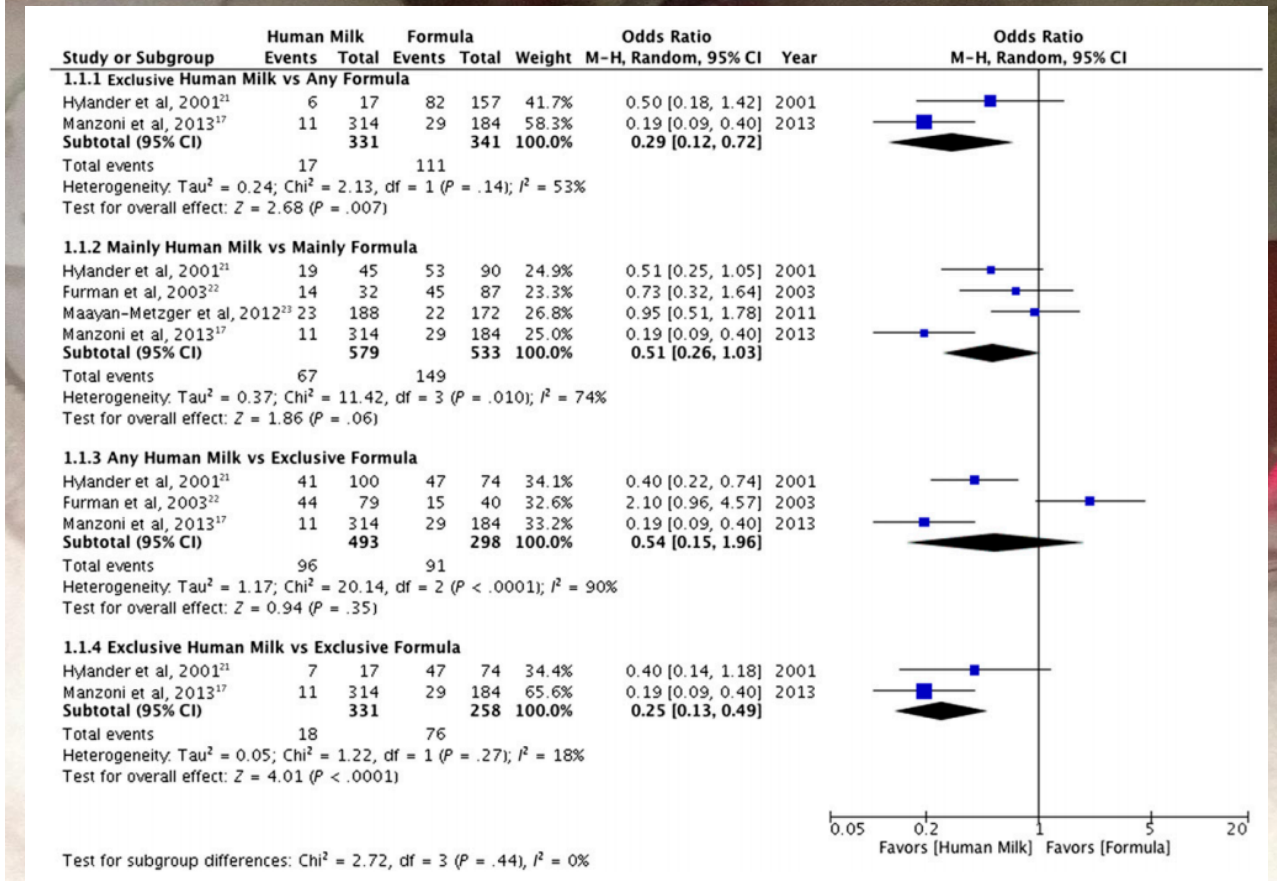
Why donor milk?

Preterm babies

- Reduces risk of NEC
  - Boyd & Quigley 2007; Ganapathy 2012, Cacho, 2017
- Reduced retinopathy of prematurity
  - Zhou et al., Pediatrics 2015
- Reduced duration of stay
- Increased maternal breastfeeding rates

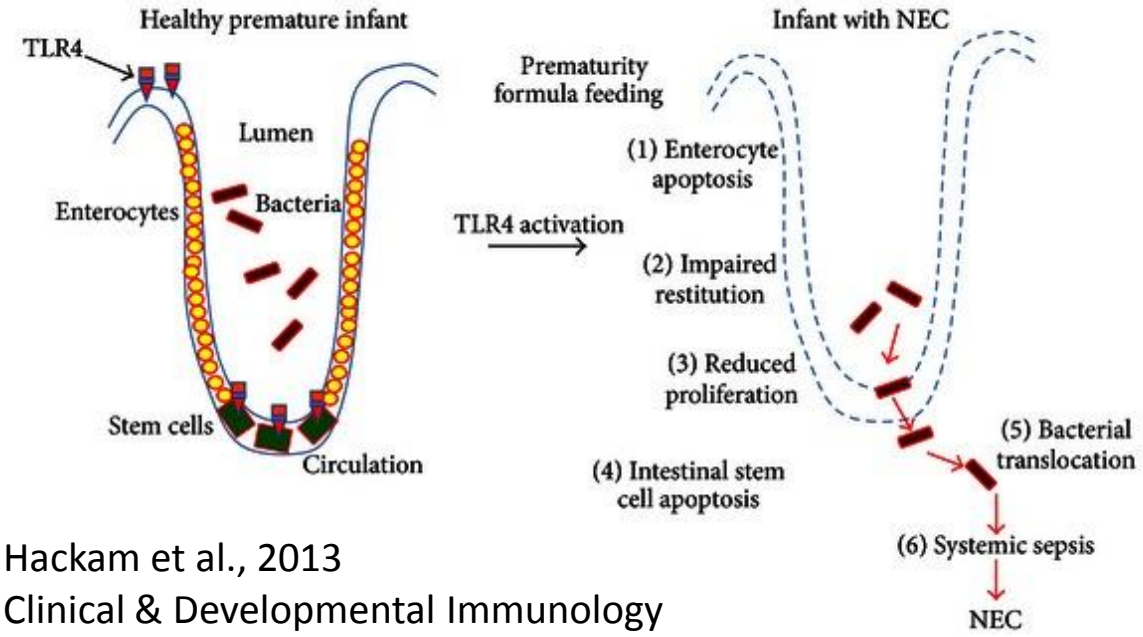
Full-term babies

- Neonatal hypoglycaemia
- Babies cardiac and abdominal surgery
- Lactational delay



Zhou et al., Pediatrics, 2015

How does it work?



Hackam et al., 2013
Clinical & Developmental Immunology

Immunoglobulins

Lactoferrin

Lysozyme

EGF

Zinc

Vitamins

Fatty acids

Oligosaccharides

Barriers to donor milk use

- Cost
- Availability
- Why not just use formula?
- For-profit human milk

BAPM Report, 2016

- A Framework for Practice
- Research areas identified:
  - Optimal use of donor milk
  - Quality issues around donor milk
  - Tracking systems
  - Education for parents
  - Health economics and organisational structure

Why the Hearts Milk Bank?

www.ukamb.org

Equitable access → Assured provision → Research → Change in perception

POLICY BRIEF

Ensuring equitable access to human milk for all infants

A comprehensive approach to essential newborn care

Global Breastfeeding Collective

unicef | World Health Organization | PATH

November, 2017

Cambridge Social Ventures

UNIVERSITY OF CAMBRIDGE
Judge Business School

MC
MASSCHALLENGE
WINNER

Thank You

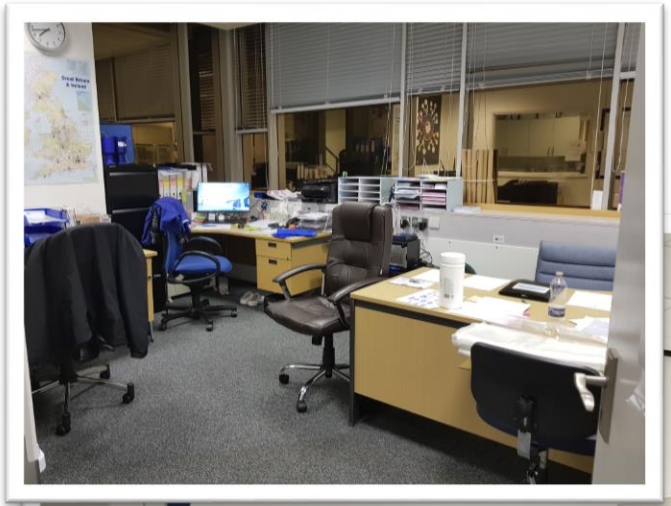
University of Hertfordshire UH

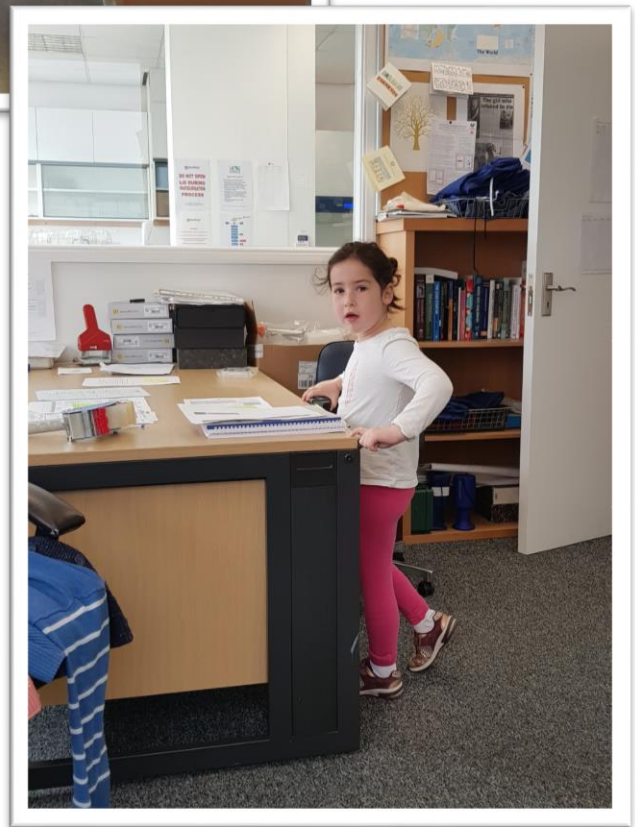
SERV
SERVICE BY EMERGENCY
RIDER VOLUNTEERS

hmb
HEARTS MILK BANK

WE'RE A
SOCIAL ENTERPRISE
BUSINESS WHERE SOCIETY PROFITS
Certified Member of Social Enterprise UK

Moving in!



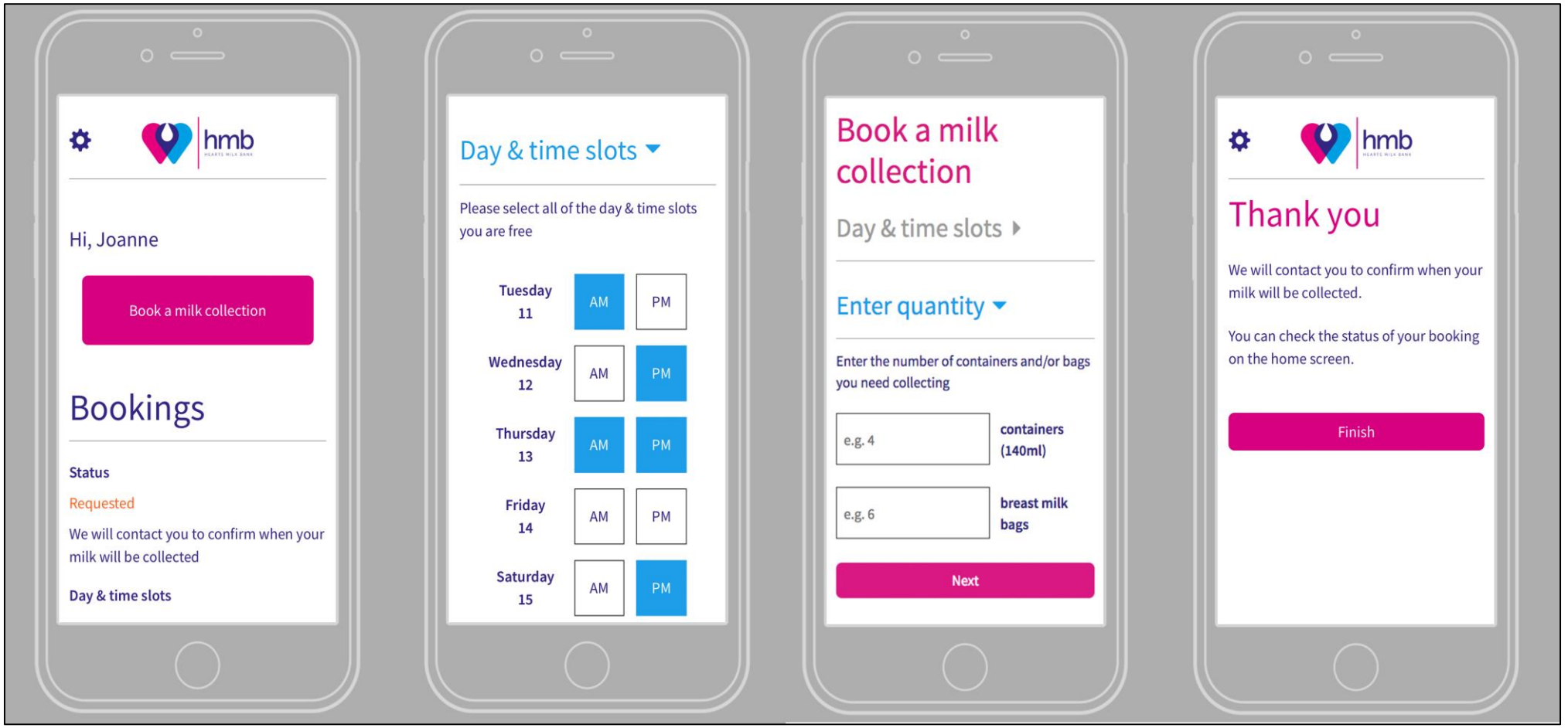


Improving donor experiences

ShareLab Fund by nesta

SERV Service by Emergency Rider Volunteers

white october



savant

Li-LAC
Labelling, control and tracking

Tracking system pilot

Nutritional analysis/ donor recruitment

Imperial College London

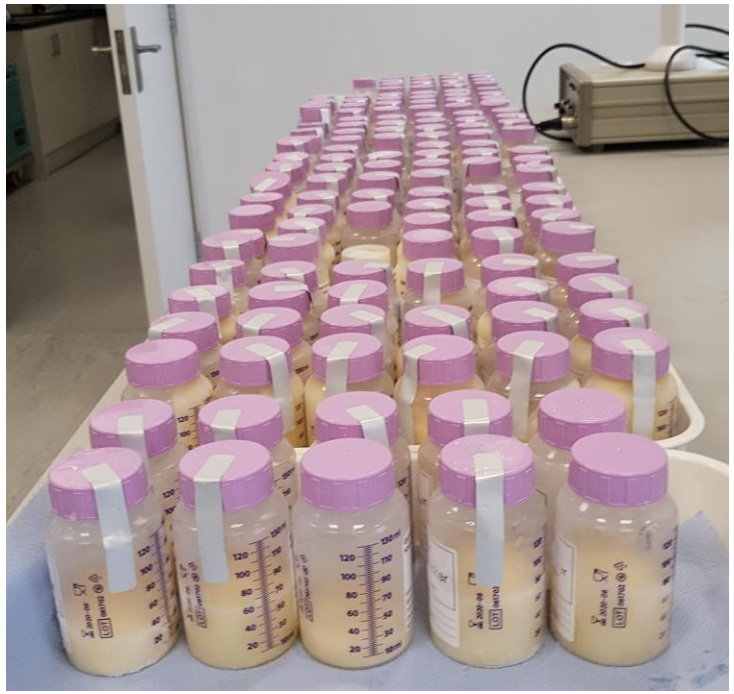
- Variability
- Composition beyond the 1st yr
- 700 participants

PARENTING SCIENCE GANG

Parenting Science Gang

@parentingsciencegang

wellcome trust



- Lactation needs of the bereaved mother
- Role of the milk bank

University of Hertfordshire UH

Lactation After Perinatal Loss: Supporting Women's Choice

Judith Kennedy, Student Midwife; Anna Matthews, Student Midwife

University of Hertfordshire UH

hmb HEARTS MILK BANK

National benchmarking study planned

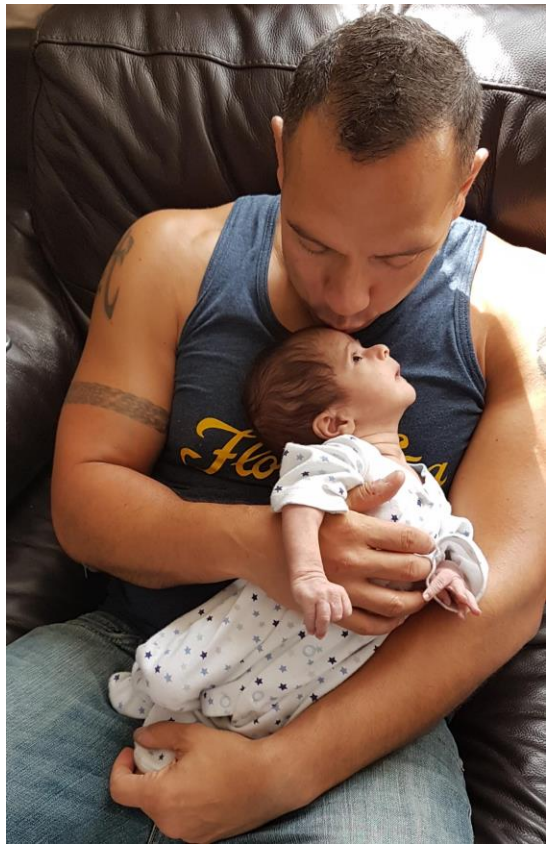
Duties of care of a milk bank

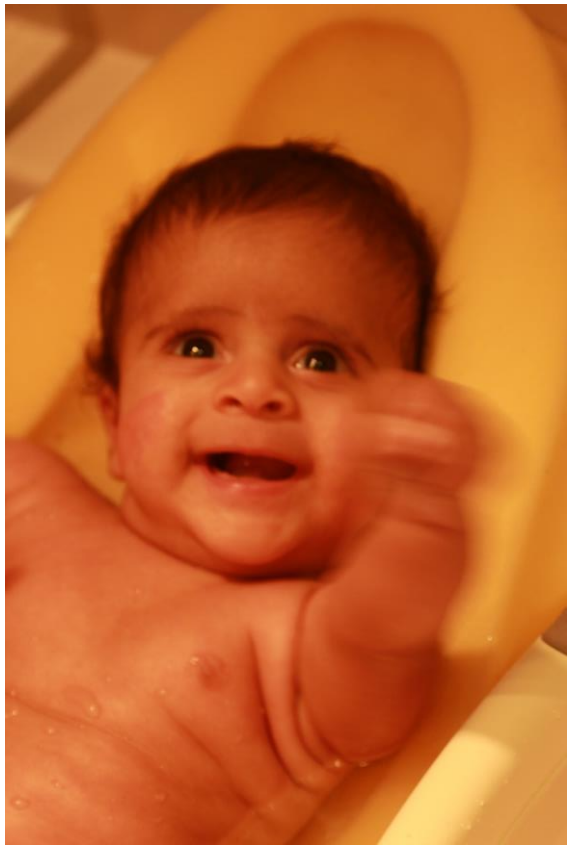
- ON, 27 yr old
- Hyperlactation
  - 4 L per day
  - Disabling
- Donated 85 litres
- With intensive support, her supply was managed down to baby only

News ▸ World news ▸ Breastfeeding

'Miracle mum' donates 5,000 pints of breast milk to help premature babies and gay dads feed newborns

Elisabeth Anderson-Sierra, 29, spends an incredible 10 hours a day pumping around 1.75 gallons of milk - ten times the average woman





Shurron and Koan

£?

"Greatest possible intervention is human milk."

Lancet Series, 2016

2016 WISE AWARDS

SME HERTFORDSHIRE Business Awards 2017 WINNER

SME NATIONAL Business Awards 2017 FINALIST

The Rt. Hon Grant Shapps MP

HOUSE OF COMMONS
LONDON SW1A 0AA
Telephone: 020 7219 8497
grant@shapps.com

Natalie Shenker and Gillian Weaver
Hearts Milk Bank
Biopark
Broadwater Road
Welwyn Garden City
AL7 3AX

15th November 2017

Dear Natalie and Gillian,

I am writing to congratulate you both and all at Hearts Milk Bank (HMB) for being shortlisted for Best Not-for-Profit organization by the SME Awards and also for your recent Gold Award.

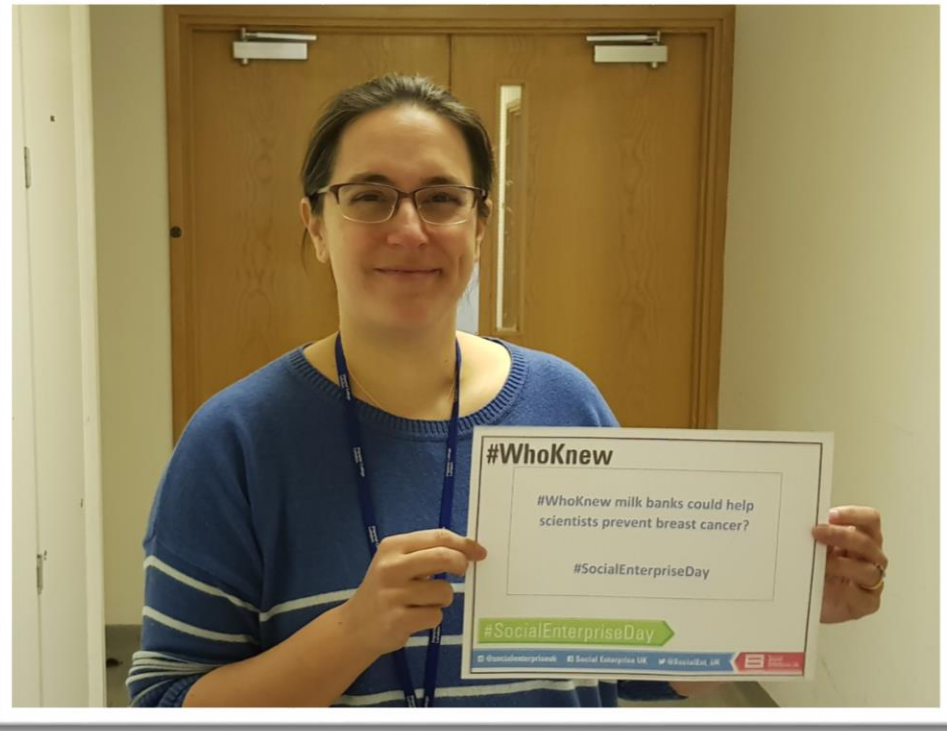
I was very interested to read about the work of HMB and the fantastic work you do in often providing breastmilk and giving babies the best chance of survival and long term health.

Good luck in the SME Awards and please do let me know if there's anything I can ever do to help.

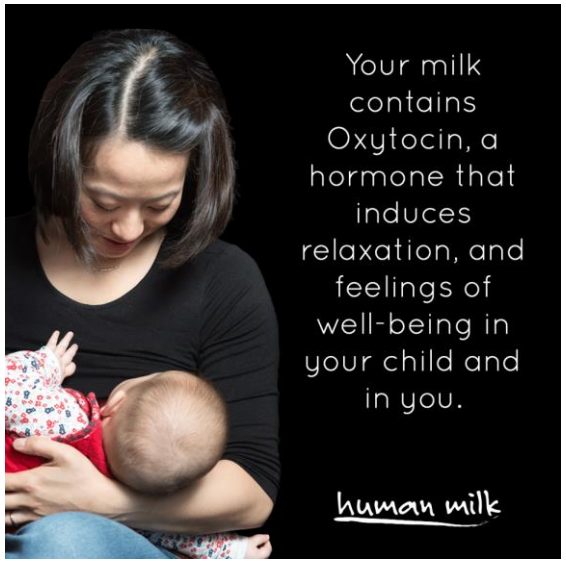
Well done once again!

Yours sincerely,

The Rt Hon Grant Shapps MP

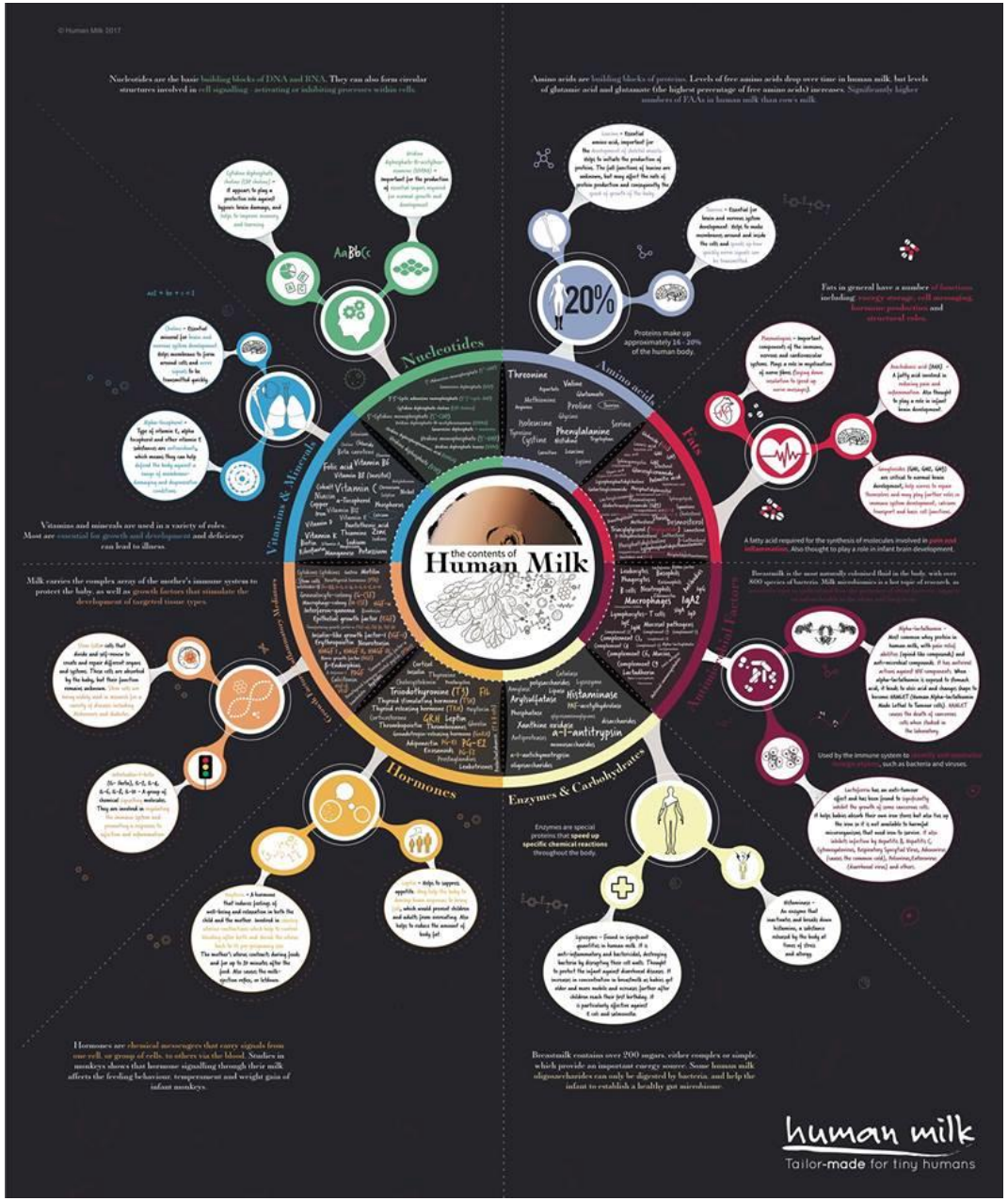


Education



Claire Czajkowska

Dr Amy Brown



www.human-milk.com
www.zazzle.com

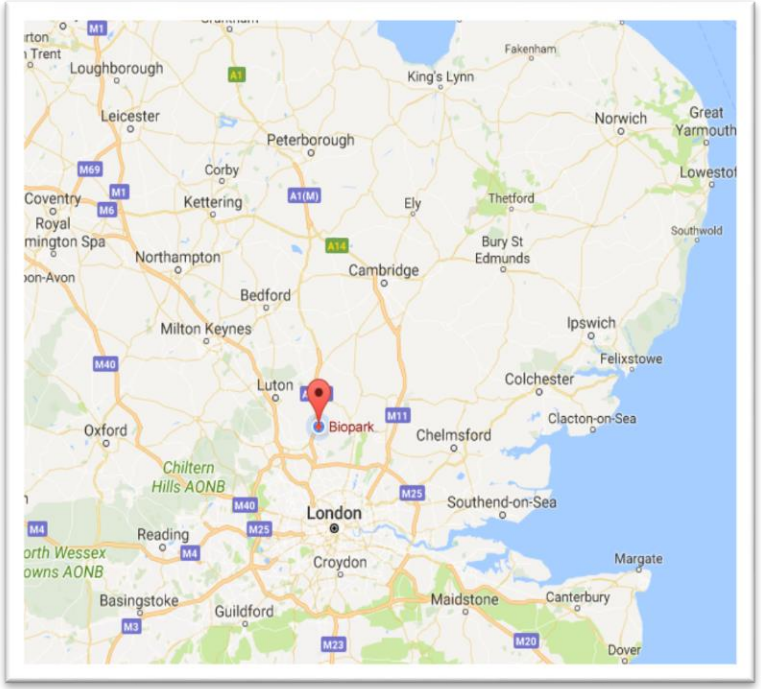
Where next?

- To enable collaborative research
- To engage the public
- To facilitate evidence and strategy towards a national service
- To enable donor milk to be the first line supplementation for all babies who could benefit

hmf
HUMAN MILK FOUNDATION

Launching Spring 2018

Thank you!



Please visit us:
Biopark
Broadwater Road
Welwyn Garden City

Imperial College London

- Breastfeeding reduces risk of breast cancer
  - 20% reduction in triple-negative breast cancers
- Mechanism unknown
- High risk genetic mutations (e.g., BRCA1)
  - ~80% lifetime risk of breast cancer
  - Majority = triple-negative breast cancers
  - 1 yr breastfeeding → risk reduction 35-40%
  - 2 yr breastfeeding → risk reduction 55-60%

Lynch et al., 2012 *Breast Cancer Res*
Jernstrom et al., *JNCI*
Lubinski et al., 2014 *Int J Canc*
Pan et al., 2014 *Cancer Epidemiol*.

Breastmilk

Epigenetics Cohort Study

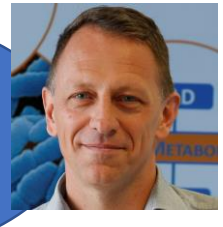
- BECS study
- 20,000 women
- Milk, blood and demographic data
- Three coordinating milk bank recruitment hubs
- Potential for UK-wide and European-wide involvement
- International repository?

Imperial College London

Breastmilk Epigenetics Cohort Study

Epigenetic risk markers (Imperial)

Microbiome analysis (Imperial)

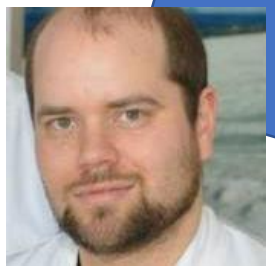


Environmental toxicology (Imperial/ InFLAME)

RESEARCH BIOBANK

Nationwide ethics approval granted to recruit >20,000 individuals

Simon Cameron (REIMS)



Oestrogen mimicry (Brunel)

Evolutionary biology (York University)