Factors associated with breastfeeding: an area-based analysis (FAB)
Project protocol

A. Project summary

To measure the effects of breastfeeding interventions and socio-demographic factors on area-based breastfeeding rates.

The specific objectives are to:

1. Collate area-based data on breastfeeding prevalence at 6-8 weeks, socio-demographic factors and breastfeeding interventions
2. Use these data to identify predictors of variation between areas in breastfeeding prevalence at 6-8 weeks
3. Use individual level data to measure the demand for breastfeeding services
4. Monitor changes over time in breastfeeding prevalence and interventions, and evaluate the implementation of any subsequent changes in service.

Methods

Babies who are not breastfed have poorer health in infancy and childhood. Breastfeeding is recognised as a key indicator of the success of public health policies according to the new public health outcomes framework. Area-based data on breastfeeding rates at 6-8 weeks and socio-demographic factors (e.g. maternal age, ethnicity, deprivation) are routinely available; currently these are PCT-based but it is envisaged that these will become available for local authority areas. Data on breastfeeding interventions (e.g. Baby Friendly accreditation, number of breastfeeding counsellors, weekly opening hours of clinics/cafes) will be obtained from the relevant organisations. Data on local area-based breastfeeding initiatives will be obtained from the appropriate bodies. Data on other relevant interventions will be obtained e.g. Family Nurse Partnership sites. An Advisory Group with representatives from the NHS and breastfeeding organisations will ensure that all key data on breastfeeding support are collected. Area-level data will be summarised using descriptive statistics, graphs, and if appropriate using an atlas. Predictors of variation by area will be identified using regression models. The demand for breastfeeding services will be assessed using data from the Infant Feeding Surveys (2005, 2010) and the National Maternity Survey 2010.

B. Co-investigators

The co-investigators are: Maria Quigley, Laura Oakley, Jenny Kurinczuk (NPEU, Oxford), Mary Renfrew (MIRU, York). In addition, an Advisory Group will be formed.

C. Data collection including downloading data

Much of the data required for the project is available in the public domain. However it is envisaged that some primary data collection will be necessary.

For objective (2) (to identify predictors of variation between areas in breastfeeding prevalence at 6-8 weeks), the key data items are:

- **Outcome** i.e. breastfeeding prevalence at 6-8 weeks. Our primary outcome is the prevalence of any BF at 6-8 weeks but we will also look at exclusive (total) breastfeeding at 6-8 weeks and BF initiation.
- **Exposure** i.e. breastfeeding support. There are many possible services to consider (e.g. Baby Friendly accreditation, number of breastfeeding counsellors, weekly opening hours of clinics/cafes) and we need to decide which ones to focus on and how to "measure" the service (e.g. number of FTE staff or number of hours/days a service is available). Some things to consider are:
  - Which services are likely to have the strongest effect on BF rates.
  - Is it possible to focus on a few "key" services or do we need to be as inclusive as possible.
  - Changing services over time, particularly with the new government.
  - Retrospective versus current data.
  - NHS services versus voluntary organizations.
  - How easy is it to access the data e.g. some data is available on Chi-mat.

- **Socio-demographic factors** e.g. mother's age, ethnicity, area-based deprivation measures, etc.

- **Other potential confounders** e.g. number of births (in the PCT), rates of caesarean section, LBW, etc.

- **Health outcomes** – we could look at the association between BF at 6-8 weeks and health outcomes, and the association between BF support and health outcomes.

Table 1 shows the potential data items for the project which are already available in the public domain. Note that most of these variables are available at the PCT level (n=152 PCTs); some are also available at other levels e.g. local authority. The data items in Table 1 are probably sufficient for our outcomes (breastfeeding and also the health outcomes, if we decide to include these) and our confounders (socio-demographic and other factors). However, there are only limited data items on breastfeeding support. It should be noted that for 2009, detailed data on breastfeeding support is available for the 31 London PCTs; this was collected as part of the London mapping project which Mary Renfrew led.

We may want to do some preliminary analysis to help us decide how much additional primary data collection is necessary. For example, preliminary analysis of the Chi-mat data for all 152 PCTs and for the 31 London PCTs may help us identify what (if any) additional

data items need to be collected. We may also be able to add additional data easily (e.g. NCT, Baby Cafes?). If this analysis shows that (some of) the data items on BF services looks like they might be associated with BF rates then it would be worth doing primary data collection for these variables e.g. write to all PCTs.

For objective (3) (use individual level data to measure the "demand" for breastfeeding services), the Infant Feeding Surveys (2005, 2010) and the National Maternity Survey 2010 will be used e.g. IFS 2005, did anyone show you how to put baby to the breast and how useful was this or would you have liked help on this; while you were in hospital did you get enough help or advice with feeding problems.

Objective (4) (monitor changes over time and evaluate changes in service) will be planned once Objective 2 is finalised.

D. Proposed timeline (subject to decisions about preliminary analysis/primary data collection)

1. Planning and scoping phase (April – August 2011)

- Draft the study protocol
- Identify the key sources of routine data

2. Exploring existing data (September 2011 – February 2012)

- Start exploring existing data (what's there, what's missing, mapping; download relevant data):
    - DH BF rates
    - Chimat/similar
    - BFI
    - NCT and Baby cafes
    - Other sources e.g. Sure Start, FNP, Child Centres, Little Angels, BF Network
    - DH PCT data and progress reports
    - National Maternity Survey and Infant Feeding Surveys
- Identify and write to Advisory Group
- To conduct analysis using retrospective data – useful as a pilot, to check data quality, to look at effectiveness of previous interventions and trends over time)

3. Data collection (March – July 2012)

- 1st Advisory Group meeting (early 2012) – to discuss what data are available and data quality, and to agree whether further data needs to be collected and how
- Finalise list of data sources (much data will already exist and be accessible; some primary data collection is likely e.g. writing to local authorities/BF co-ordinators for localised BF initiatives)
- Download any relevant datasets

- Produce sampling frame and contact details for primary data collection
- Design simple data collection form to collect information on BF interventions
- Send out data collection forms (with reminders etc)
- Enter data collection forms

4. Data analysis (March - Dec 2012; note that some of this can be started before the data collection is complete)

- 2nd Advisory Group meeting (autumn 2012) – to describe what data has been collected e.g. completeness, quality, response rates
- Data management and cleaning - merge all relevant datasets, check and clean data.
- Descriptive data analysis – data quality, completeness, crude BF rates, crude data (and mapping) for BF interventions and confounders. Use maps and atlas as appropriate
- Regression models

5. Writing up and dissemination (end 2012 – early 2013)

- 3rd Advisory Group meeting (end 2012) – to present key findings and get relevant input on interpretation and dissemination
- Conference/other appropriate forum
- Liaise with local authorities/other relevant groups regarding appropriately targeted dissemination
- Journal article (s)

Table 1 Potential PCT-level data items available

Data item	Source of data
Breastfeeding	
% BF initiation	DH (Local delivery plan return)
% BF (exclusive or partial) at 6-8 weeks	DH (Local delivery plan return)
% "totally" BF (i.e. EBF) at 6-8 weeks	DH (Local delivery plan return)
% partially BF at 6-8 weeks	DH (Local delivery plan return)
Socio-demographic and clinical confounders	
IMD	Dept for communities & local gov
No. births	ONS
% CS	HES
% mothers aged 35+	HES
% mothers aged <20	HES
% smoking at time of delivery	Local delivery return plan
% LBW	ONS
% population BME (census-derived)	ONS
Maternal ethnicity	HES (applied for)
Health outcomes	
Infant mortality rate	ONS
Hospital adm rate for gastroenteritis, under 1 yr	HES
Hospital adm rate for RTI, under 1 yr	HES
Breastfeeding support/services	
BFI accreditation	UNICEF
No. FTE health visitors	Annual NHS workforce census
Breastfeeding support/services	
Available in 2009 for 31 London PCTs only:	
Infant Feeding lead WTE per 3000 births	
Staff dedicated to provision of BF services WTE	
No. BF services	
No. BF services in antenatal period	
No. BF services to hospital discharge	
No. BF services in community (postnatal)	
No. BF services with trained peer support	
No. services targeted to priority pop groups	
No. services planned/under evaluation	