

The reality of implementing evidence-based practice

Introducing the Nurse-Family Partnership home-visiting programme in England

Professor Jacqueline Barnes
Birkbeck, University of London





What will be covered

- Issues in implementing evidence-based programmes
- Origins of NFP (FNP)
- Evidence from the USA
- Implementation evidence in England



Evidence-based to real world

- Can experimental interventions be implemented within a system of care?
- Can they be implemented with quality?
- Can they be implemented across 'borders'?
- If they are, will the same outcomes be found?



Likely difficulties

- Tension between perceived need to tailor the programme to new setting and maintaining fidelity
- Influencing factors are:
 - Community (politics, funding)
 - Provider characteristics
 - Organisational capacity
 - Support system (training, IT)

Going to scale in another country

- Need high level support for evidence-based services
- Need highest quality of evidence
- Programme should be a pragmatic fit between the intervention, its theoretical underpinnings and the setting
- Protect deep structure (core principles)
- Surface structure can be adapted
- Could strengthen the intervention



Nurse Family Partnership evidence

- One of only 2 programmes for 0-6 year olds and families with top tier evidence (US Council for Excellence in Government, 2009)
- One of only 2 home-visiting programmes with evidence of capacity to reduce child abuse and neglect (MacMillan et al., 2009)

UK readiness

- Since 1997 central government support for programmes with an evidence base
- Concurrently a strong focus on early intervention (e.g. Sure Start) to break the cycle of disadvantage
- Guiding principle to systematically identify 'what works' (*Reaching Out: an action plan for social exclusion*, HM Government , 2006)



Social Exclusion Taskforce

- Identified NFP as having:
 - Truly outstanding outcomes
 - Long-term cost effectiveness
- Approached David Olds, Dec. 2006
- Funding to come from:
 - Department for Children, Schools and Families
 - Department of Health
- By April 2007, 57 nurses trained in 10 sites across England

Origins of the NFP programme

- David Olds, working in day care centre in 1970s, with 3 and 4 year olds
- Pregnancy a key moment of opportunity and nurses trusted professionals
- First-time mothers were key 'targets'
- Based NFP on ecological theory, attachment, and self efficacy
- Originally focus was prevention of child abuse

Nurse-Family Partnership (NFP) programme (Olds, 2006)

- Manualised Nurse home-visiting
- Starts early in pregnancy (16 weeks)
- For first-time mothers
- Continues until child is two
- Supported by three RCTs
- Licensed programme with detailed nurse training and fidelity objectives to ensure replication of the original programme and a range of data forms so that programme delivery can be monitored

Programme GOALS



Connecting with low-income vulnerable mothers to:

1. Improve pregnancy outcomes
2. Improve child health and development and future school readiness and achievement
3. Improve parents' economic self-sufficiency

Structured curriculum and specified number of visits

- 1/week first month
- Every other week through pregnancy
- 1/week first 6 weeks after delivery
- Every other week until 21 months
- Once a month until age 2

Each visit has a range of materials and activities designed to build self-efficacy, change behaviour, promote attachment, covering six content domains

The content domains

- Personal health – women's health practices and mental health
- Environmental health – adequacy of home and neighbourhood
- Life course development – women's future goals
- Maternal role – skills and knowledge to promote health and development of their child
- Family and friends – helping to deal with relationship issues and enhance social support
- Health and human services – linking to other services

The relationship between the nurse and the family is central to programme

Strong evidence base for NFP

Three Randomised trials in USA

Elmira, NY
1977



N = 400

- Low-income whites
- Semi-rural

Memphis, TN
1987



N = 1,138

- Low-income blacks
- Urban

Denver, CO
1994



N = 735

- Large portion of Hispanics
- Nurse versus paraprofessional visitors

Consistent results across all three trials

- Improvement, women's antenatal health
- Reduction in children's injuries
- Fewer subsequent pregnancies and greater intervals between births
- Increase in fathers' involvement
- Increase in maternal employment
- Reduction in welfare dependency
- Improvement in school readiness
- Biggest impact for most vulnerable (poor, unmarried, low IQ, low self efficacy, mental health problems)

Long term follow-up Elmira

Age 15

- Fewer arrests and convictions
- Fewer 'Person In Need of Supervision'

• Age 19

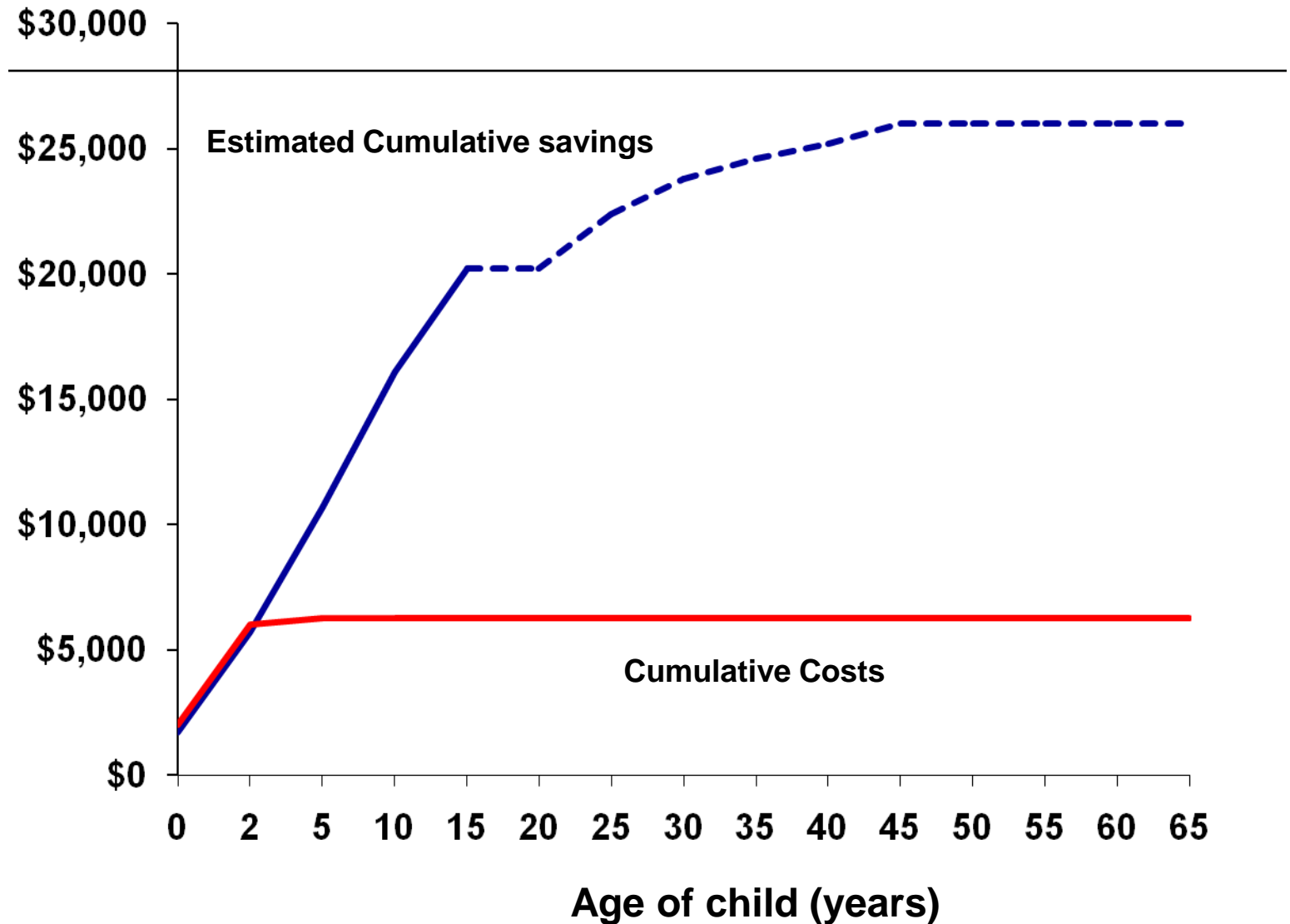
- Less likely to be arrested or convicted and fewer lifetime arrests or convictions (but only girls)
- No effects on high school graduation, economic productivity, # sexual partners, birth control use, teen pregnancy, welfare or Medicaid
- Girls of unmarried, low-income mothers had fewer children and less Medicaid use

Mothers (USA) gaining most from the Nurse Family Partnership programme

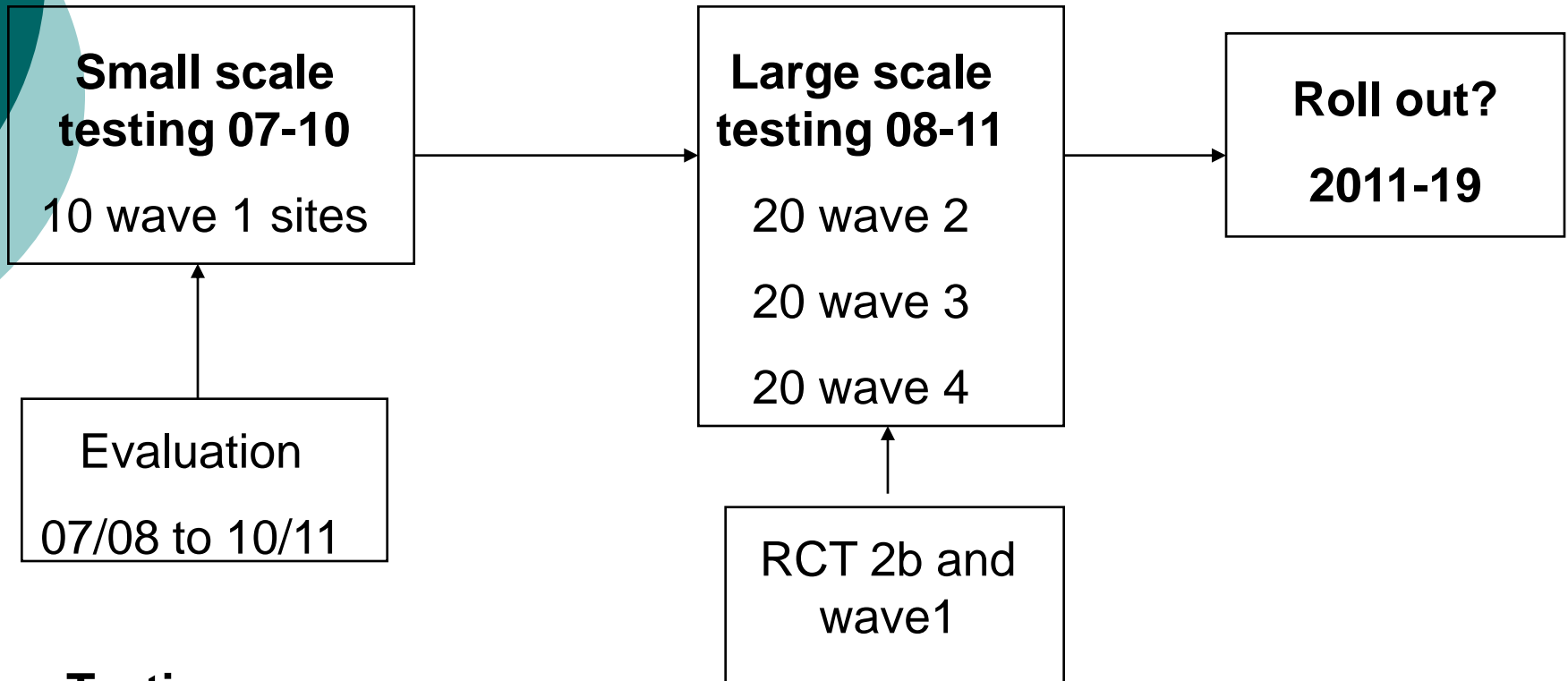
- Low income, at about the national poverty level or below
- Unmarried (or 'no partner')
- Teenage at conception
- Below average intellectual capacity
- Mental health problems in pregnancy
- Low self esteem/sense of mastery in pregnancy
- Smoker in pregnancy

Cost – Benefit : Nurse Family Partnership

Cumulative dollars per child



Testing in England (called FNP)



Testing:

Programme delivery, training, organisational and service context, workforce, commissioning, eligibility, recruitment pathways, roll out

Evaluation questions to answer

- Who should be the clients?
- Can a system be implemented to identify clients?
- Will the programme be accepted?
- Will it be delivered according to guidelines?
- Will clients remain involved for the duration?
- Will nursing staff find it acceptable?
- Can it be sustained?



Mixed Methods

- Quantitative; analysis of data collected during programme delivery (US data forms)
- Some structured questionnaires
- Qualitative; interviews with clients, partners, other family members, nurses, supervising nurses, programme managers, commissioners, midwives, other local professionals

Recruitment criteria in USA trials

○ Elmira

- Any ONE of: under 19, single parent, low SES

○ Memphis

- At least TWO of: unmarried, less than 12 years of school, unemployed

○ Denver

- In low income neighbourhood and qualify for Medicaid or no health insurance



UK recruitment strategy

- Through NHS midwifery referral
- Low-income not identifiable at booking
- Criteria based on review of risk factors identifiable in pregnancy:
 - Under 20s, expecting first child
 - 20 to 23 and
 - NEET and never employed; or
 - NEET and no qualifications; or
 - No stable relationship with baby's father

Successful take-up

- USA fidelity stretch objective, at least 75% enrolment of those eligible
 - Of 1405 referred and definitely eligible, 1217 (87%) agreed to FNP
 - Clients did not report any perception that the offer was stigmatising
- “ Why shouldn't I? I accept whatever help I can get in life.”
- “ It's nice to have someone to talk to outside the family. They put pressure on me to do things the way they say.”
- “My friend had a baby (aged 18) and she never had this kind of help and she struggles to cope now.”

Recruitment strategy identified vulnerable population

- 80% without 5 or more A*-C GCSEs
- 78% not employed
- 67% not living with partner
- 75% below poverty line
- 24% report physical abuse in past 12 months, 11% during pregnancy
- 50% BMI < or >recommended range

Indicates simple selection system, under 20 and first time mother will identify appropriate group similar to those in USA trials

Why using other criteria can be problematic

- Relevant data not available in midwifery records (e.g. income, educational qualifications, ever in care, mental health problems)
- Nurses do not want clients to feel stigmatised

BUT it has been suggested by commissioners that FNP should be more targeted.

The issue is the topic of ongoing evaluation.

UK Fidelity – Gestation at Enrolment

- Fidelity target is 60% of clients enrolled by 16 weeks gestation and 100% enrolled by 28 weeks
- England – average gestation at enrolment 18 weeks;
 - 51% by 16 weeks
 - 47% 17 to 28 weeks
 - 2% later than 28 weeks

Clients like FNP approach

- Appreciated difference to other services (non-judgemental, informative, strength-based, paced to suit individual needs, has structure but this also allows for flexibility)
- Liked strength-based approach
- Liked involvement of partners and other family members

Nurse behaviour valued

Clients identified the nurses, the positive way they talked and responded, as the main strength of the service:

"I was expecting someone to come and treat me like I was thick, because of my age, like I didn't know nothing, but she was quite understanding about it really, you don't get a lot of people like that. She let me ask the questions."

"I thought she was going to be really nosey and look down at me because I'm a teenage mum. But no she was really, really nice. Nothing like I expected her to be. I expected it to be really bad. I get on really well with her".

Trusting, close relationship with Family Nurse develops

- *"I talk to the nurse about my Mum's drinking and how she smokes a lot of cannabis, I have been able to talk to her about that. I feel like I can trust her. I can't really talk to the midwife about my Mum and I can do this with the nurse."*
- *"I feel more honest with [FN] than I would with a health visitor, if you think you are not doing it right, if you mention it to the Health Visitor she might think, 'she can't look after her baby'."*

Can engage the 'hard to reach'

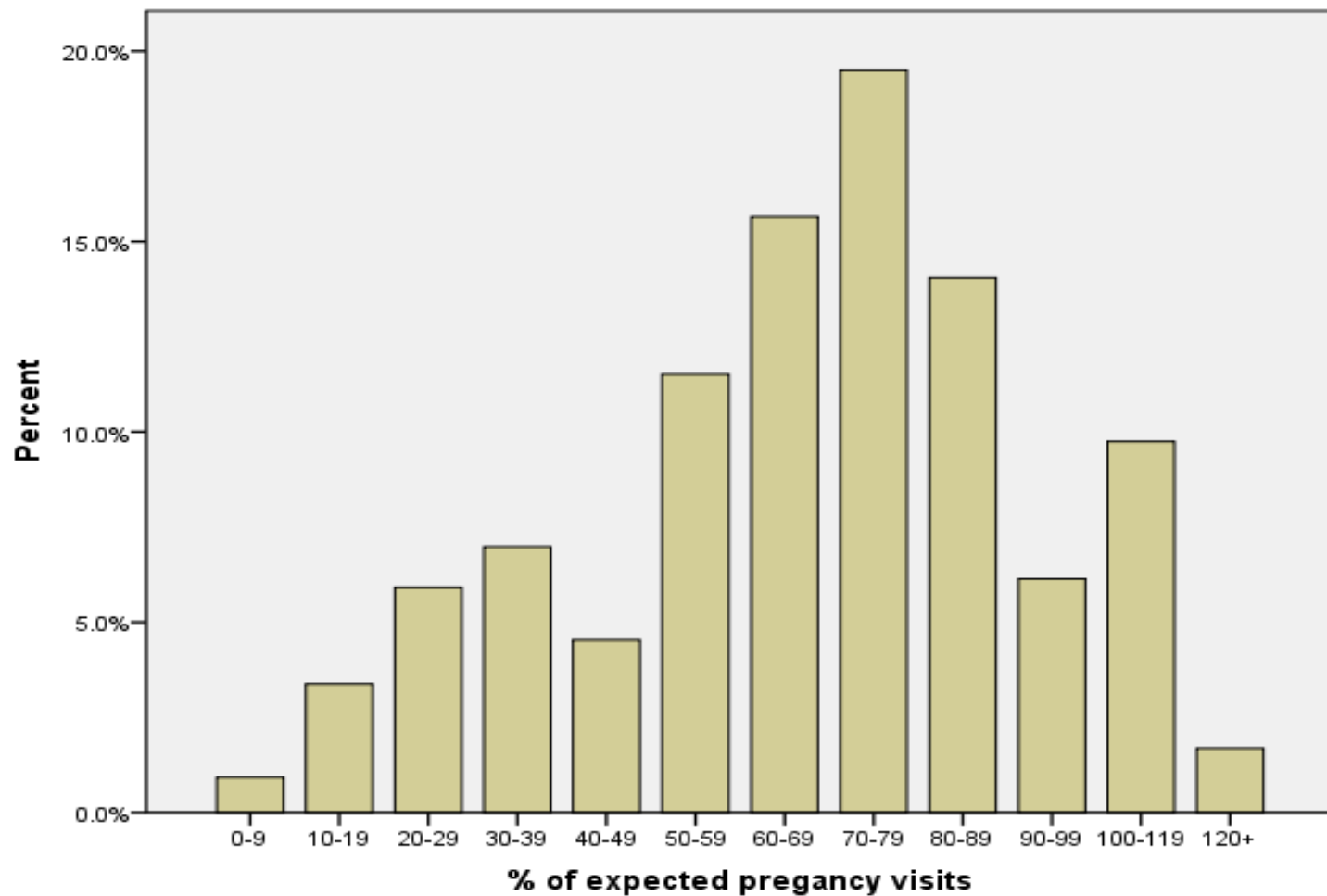
- *“When I first met the nurse I felt that people were trying to take over... I didn't want people telling me what to do... but now it is good. She was very helpful and if I needed her she was always there to ring For me the best bit of the programme is the support about my baby.*
- *“It has helped me focus on goals... If I have my heart set on something to do, do it and not leave it.....I want to go back to college to do a painting and decorating course.”*

Delivery according to guidelines

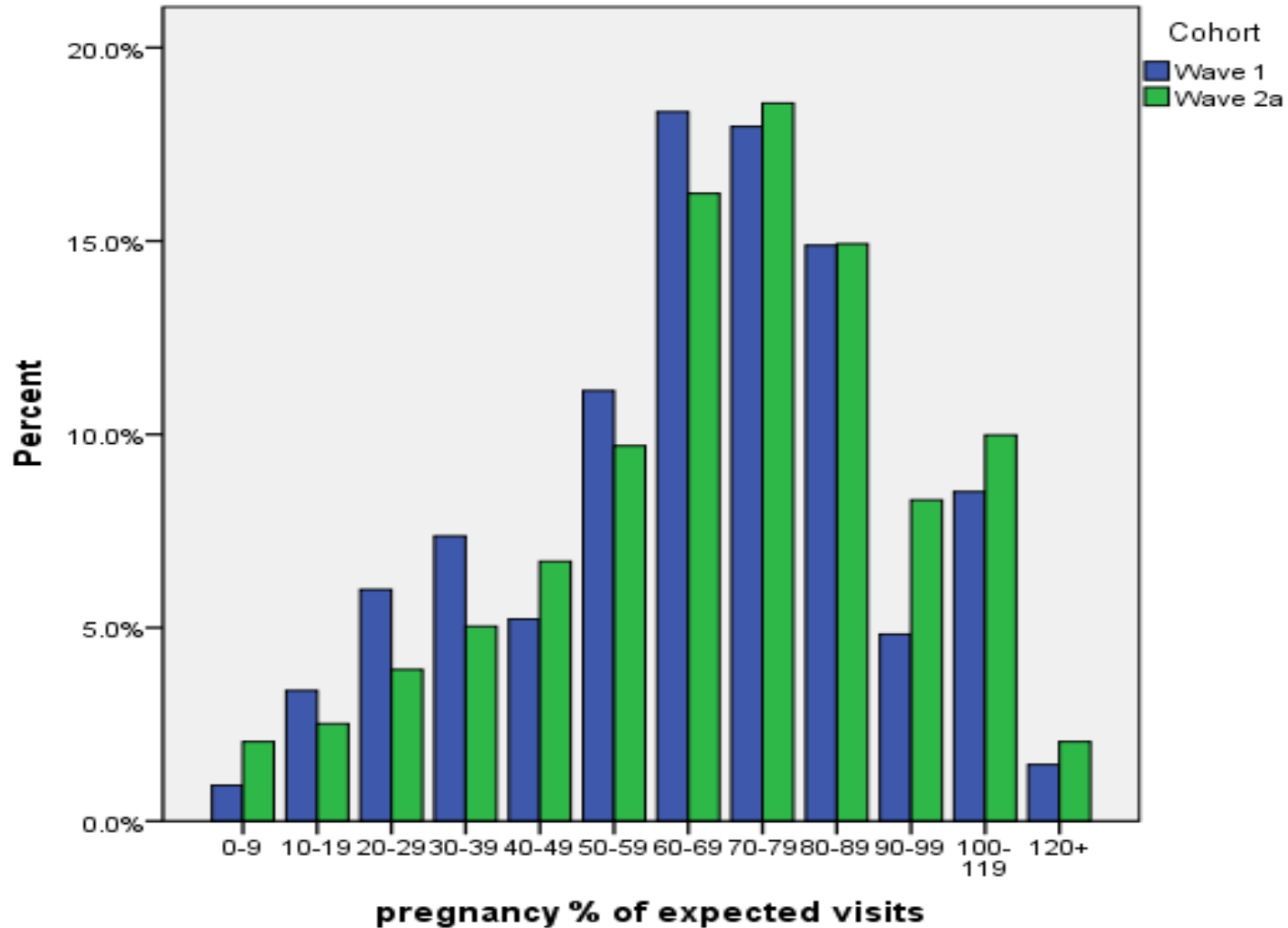
Dosage has been reasonable, most frequent level is just below the stretch objective

- Length of visit has been good (more than 60 minutes on average in all three phases)
- Content predominantly according to guidelines; some carry-over in each phase from previous phase's objectives
- Second Wave learning from pilot sites

Pregnancy dosage, Wave 1 (stretch objective 80%; reached for 30%)



Better for next 10 sites;
objective of 80% for 35% vs. 30%

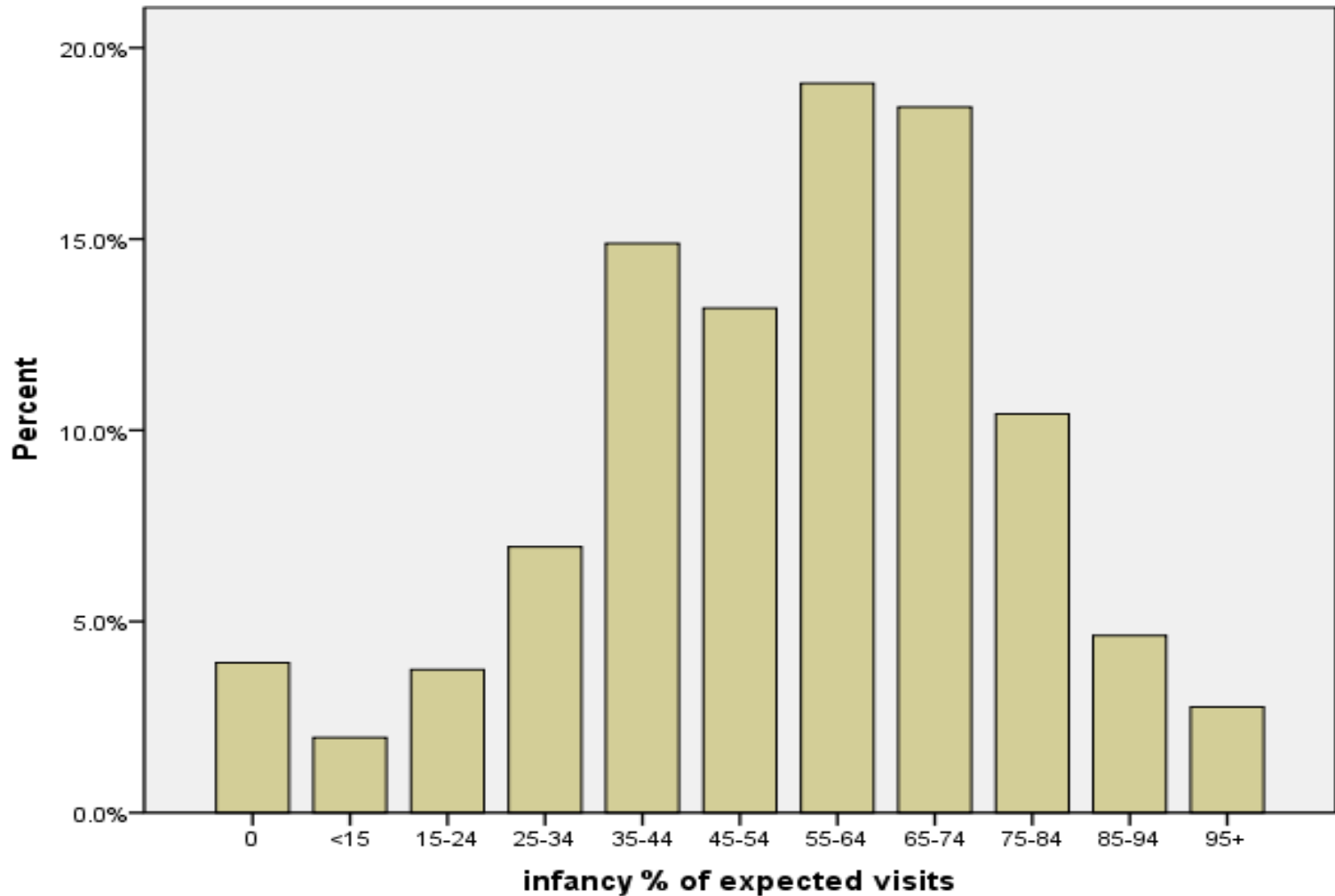


Content, pregnancy visits

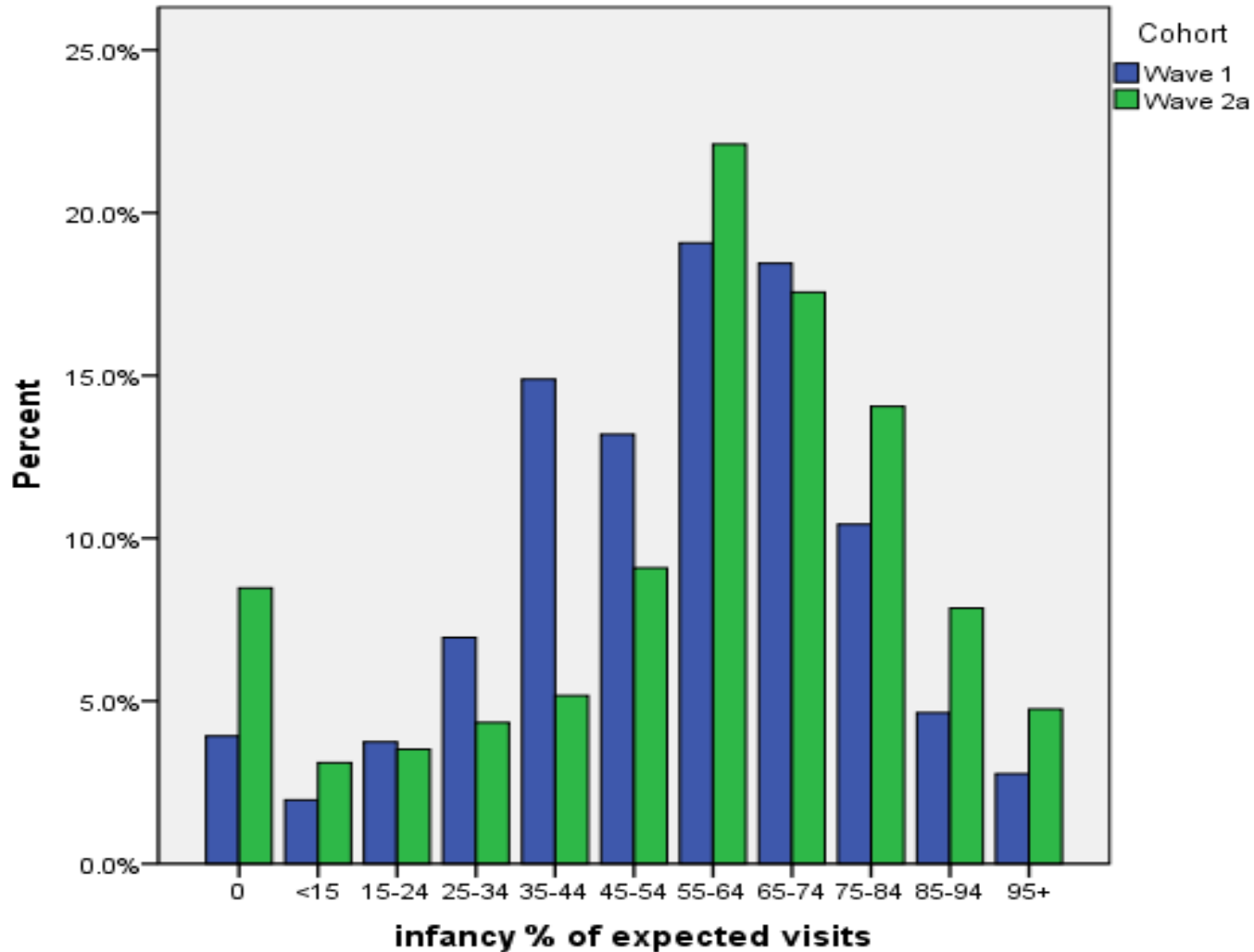
Domain	Stretch Objective	Mean %	Site range
Personal health	35-40%	35	30-41
Maternal role	23-25%	24	21-28
Life course	10-15%	11	10-13
Family & friends	10-15%	16	13-18
Environmental health	5-7%	13	10-15

Infancy dosage, Wave 1

(Stretch objective 65%; reached for 36%)



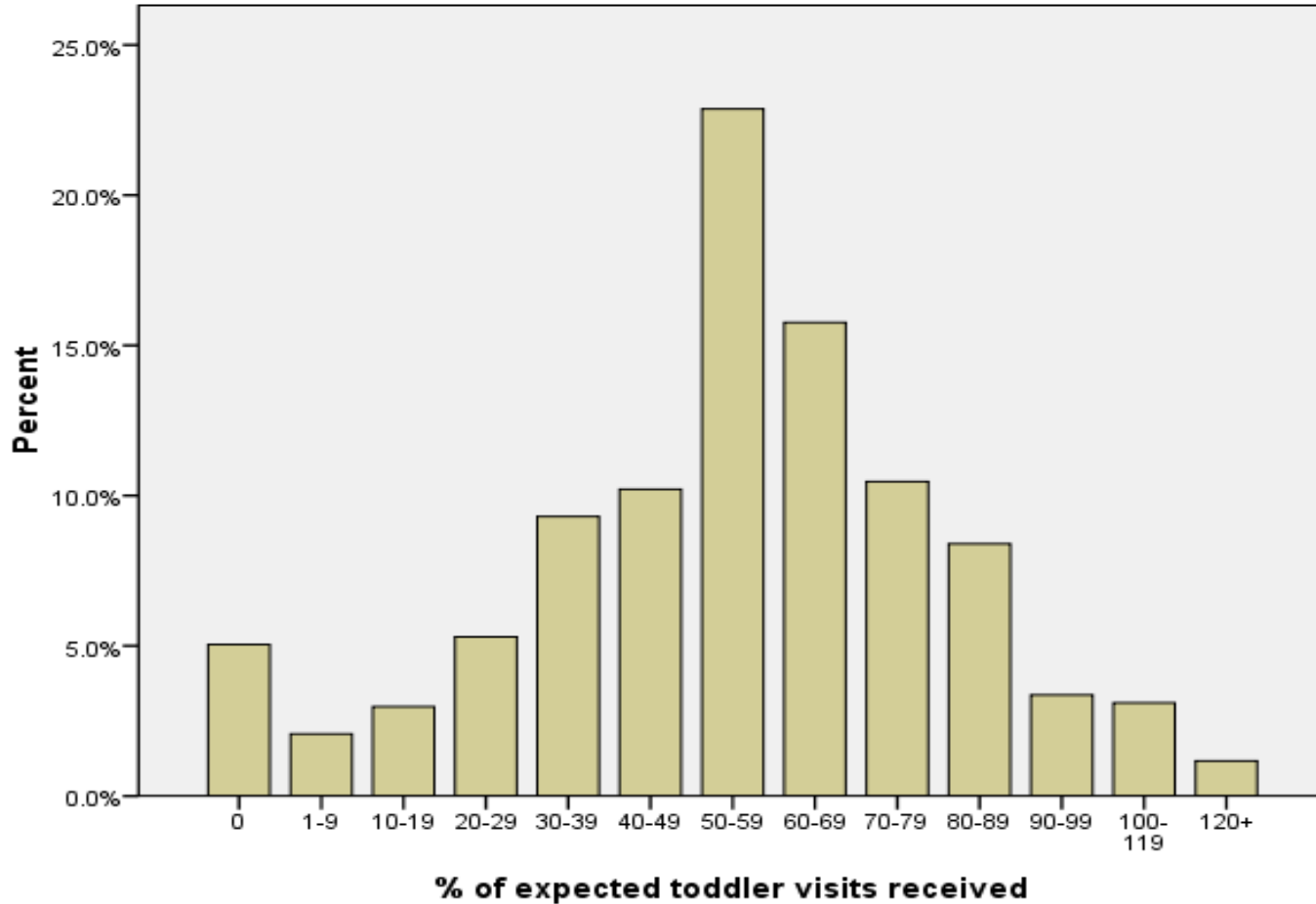
Again better for Wave 2a; objective of 65% for 44% vs. 36%



Content, infancy visits

Domain	Stretch Objective	Mean %	Site range
Personal health	14-20%	22	20-25
Maternal role	45-50%	42	36-47
Life course	10-15%	11	9-12
Family & friends	10-15%	14	12-17
Environmental health	7-10%	12	9-15

Toddlerhood dosage, Wave 1 (stretch objective 60%, reached for 42%)



Content, toddlerhood visits

Domain	Stretch Objective	Mean %	Site range
Personal health	10-15%	18	15-21
Maternal role	40-45%	42	26-46
Life course	18-20%	13	11-17
Family & friends	10-15%	14	12-18
Environmental health	7-10%	13	11-18

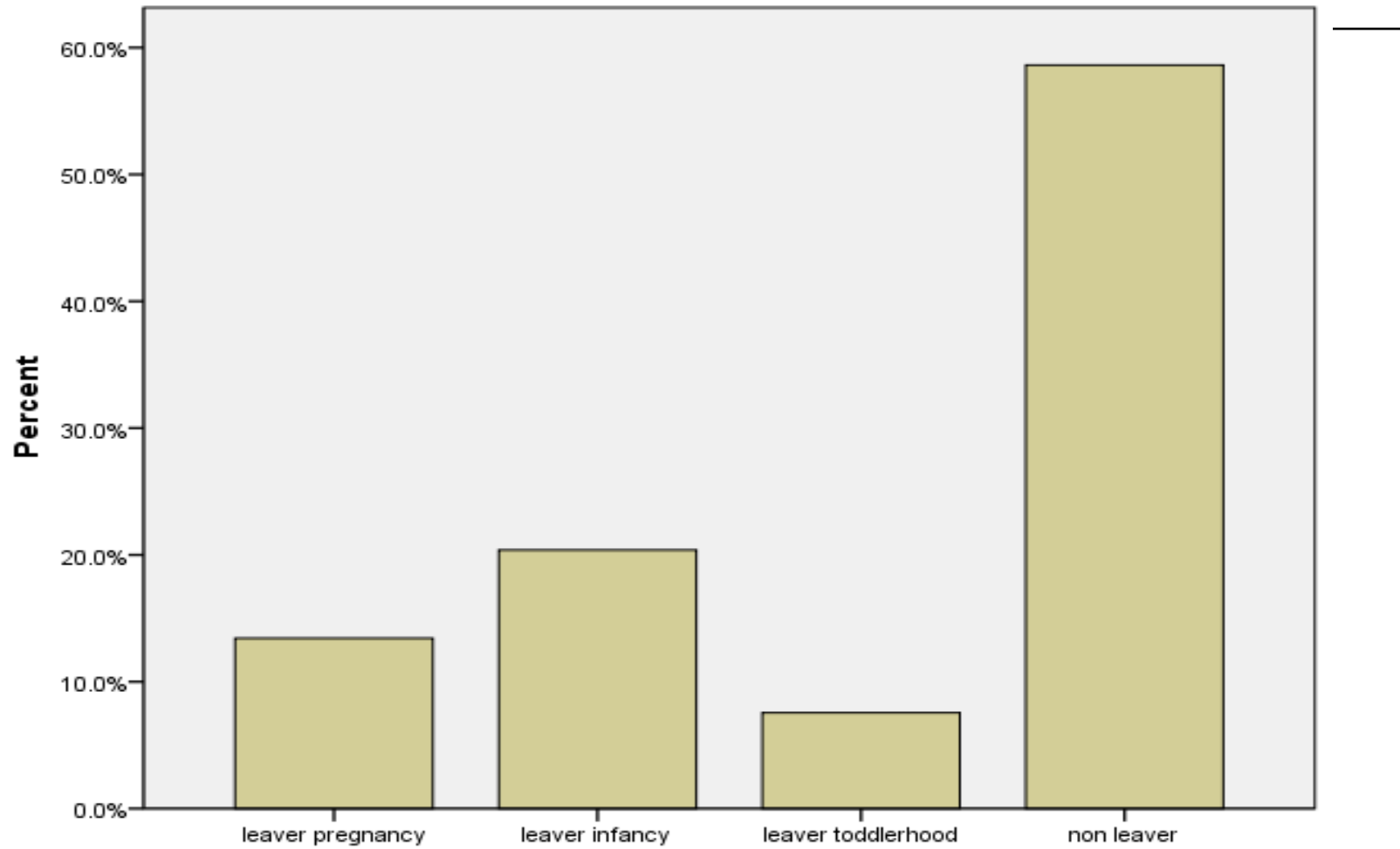
Delivery of FNP and intake vulnerabilities

	None	1 or 2	3 or 4	5 to 7
% pregnancy visits *	74	68	68	75
% infancy visits (*)	59	56	56	63
% toddlerhood visits	58	54	60	54
80% + pregnancy *	44	29	31	45
65%+ infancy *	53	34	38	42
60%+ toddlerhood	46	42	46	36

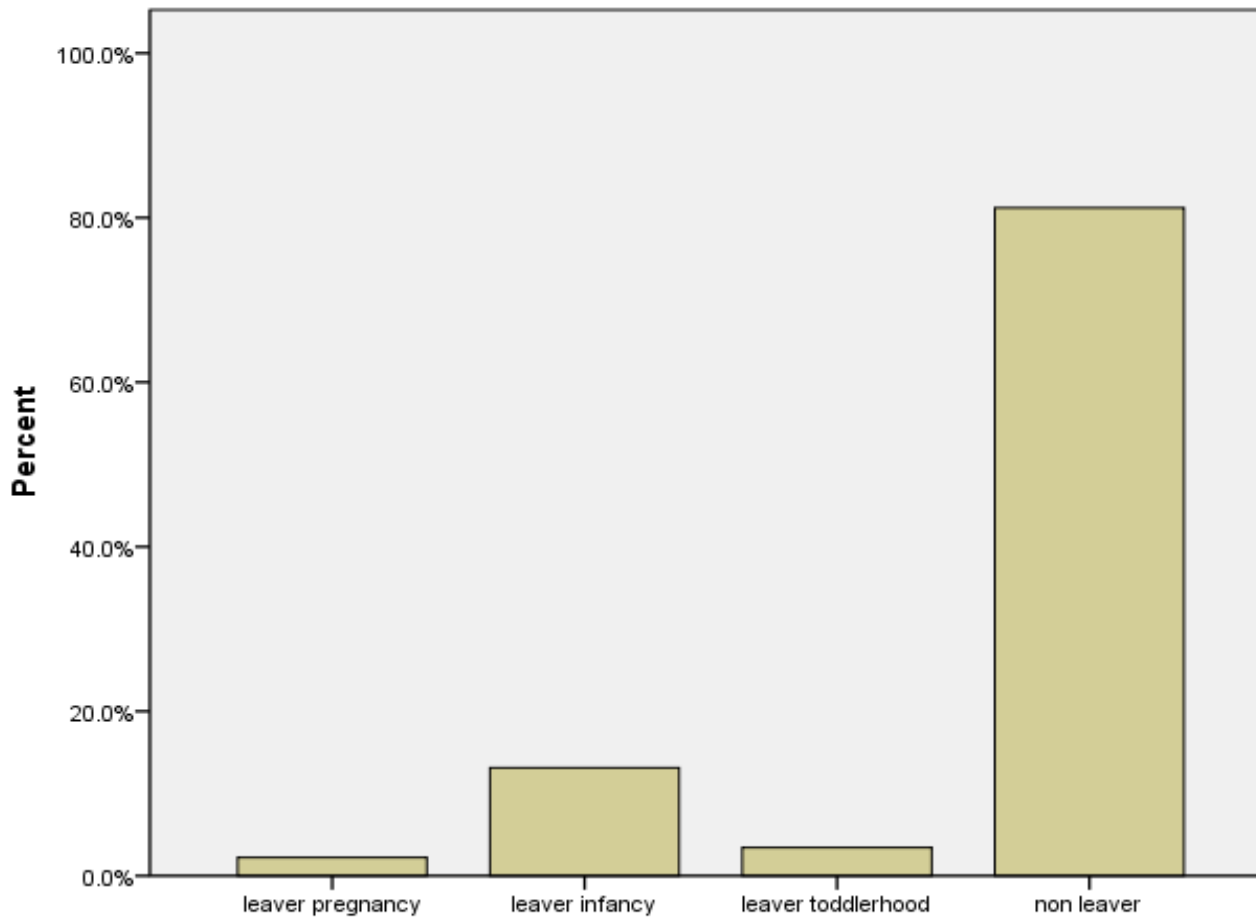
Attrition

- Overall attrition is 41%, only just over the stretch objective of 40%
- Lower than the 10% objective in toddlerhood (8%, site range 4 to 14)
- Main reasons for leaving are decline further participation (43% of leavers), moved out of area (20%) and excessive missed appointments (16%)
- Most decliners say needs satisfied or sufficient knowledge, few unhappy with programme

Attrition (Stretch objectives 10%, 20%, 10%)



Attrition Wave 2a, all completed infancy



Who leaves?

- The majority of client demographic characteristics are unrelated to attrition
- A small effect of ethnic group, least likely to leave overall are black clients and Asian clients the most likely to leave in toddlerhood
- Clients with no intake vulnerabilities are least likely to leave overall (24%)
- In pregnancy those with most vulnerabilities also less likely to leave



Father involvement initially good

- Young fathers show great interest in FNP, and many want to be present for visits or complete the activities
- Present for 22% of all pregnancy visits
- Present for 24% of all infancy visits
- 51% of clients, father present for at least one pregnancy visit
- 57% of clients, father present for at least one infancy visit

Involvement of fathers maintained

Present for 19% of all toddlerhood visits

At least one visit included the father/partner for 56% (453/810) of clients visited in toddlerhood

- Average father/partner involvement and understanding during visits was rated by FNs to be the same as that seen in infancy
- Reporting on individual cases, FNs considered that involved fathers often became more so during toddlerhood
- The presence of a new partner could present a challenge for the FN

Comments from fathers

“First off I thought ‘this is going to be boring’ and I did think I knew everything [had child already with another mother] but when she [FN] did come there is so much more that I have found out and so much more that I can still find out from her.”

“I did not expect to be involved I thought it would be more for my girlfriend’s benefit but when I turned up she said she would help me as well. I’ve learned about being a parent and that’s helped a lot. I don’t mind doing the worksheets; I find them really useful.”

Nurses find it acceptable

- FNs enjoy the new work and the challenge of working in a new way
- Enthusiastic about the potential of FNP to help clients and families
- Value the training and the materials
- Value having more time with vulnerable families and the extended contact period
- But report strain in terms of achieving dosage, working to targets and being monitored

Can FNP make a difference?

- Many clients reported changes in their understanding of pregnancy, labour, delivery and their infant
 - Clients had strong recall of the nutritional advice in pregnancy
 - 17% relative reduction in smoking (41% to 34%) during pregnancy
 - Breast feeding initiation rate higher than national rate for same age group (UK under 20s=53%, FNP = 69%)
- But remember research trial evidence is needed...***

Use of birth control remains steady

- Using birth control
 - 6 months 84%
 - 12 months 78%
 - 18 months 74%
 - 24 months 75%
- If used, frequency of contraceptive use 'every time'
 - 6 months 73%
 - 12 months 71%
 - 18 months 74%
 - 24 months 76%



Pregnancies and births by 24 months

- 35% at least one pregnancy
 - Once 30%; twice 4%; 3 times 0.5%, 4+ times 0.8%
- Mean time to second pregnancy 10 months, one third (9% clients) within the first 6 months
- 13% a second birth
- Mean time between births 17 months

Employment status over time

	With data N	Employed	%
Lifetime ever	1175	653	55
Intake currently	1175	249	21
6 months	822	94	11
12 months	679	143	21
18 months	536	126	24
24 months	509	153	30

Language development MacArthur CDI at 21 months

	Active 21 months N	With data N	Mean	Range	25th percentile or lower ≥15	10th percentile or lower ≥10
Girls	330	254 (77)	23.7	1-50	66 (26)	36 (14)
Boys	371	288 (78)	18.7	1-50	98 (34)	26 (9)

Other potential for positive outcomes

- FNs see clients as empowered and confident, making good life choices
- Graduates rate themselves as having significantly more mastery at completion than at intake (Pearlin-Schooler)
- Graduates describe themselves as predominantly warm in their parenting style, not using harsh discipline (PACR)
- Level of parenting stress similar to normative sample (PSI-PD)

Conclusions - provision

- Programme can be introduced into an NHS system of care for pregnant women and their children
- Clients welcomed the additional support
- More gradual recruitment and better administrative infrastructure have led to markedly lower attrition – some in wave 1 probably recruited in haste to fill quota

Conclusions -delivery

FNP has been implemented with fidelity in all three phases, though 'dosage' not optimal

- On the whole delivery is not affected by specific client characteristics but clients with no initial vulnerabilities receive most visits and least likely to leave
- Start but can't finish, nurses maintain some clients as active well after their child reaches 24 months

Roll-out - Who should be offered FNP?

- Designed for low-income vulnerable population
- In UK particularly want to target the 20% most deprived to reduce social exclusion
- Income not collected by midwifery when expectant mothers book in
- Mothers come to hospitals from a wide area, so deprivation cannot be identified as easily as in US

Most important factors

UK Rank	Factor	USA Rank
1	Low Socioeconomic status/poverty	1
Proxy for 1	Deprived neighbourhood	
2	Maternal school failure, no qualifications	
3	Mother teenage (USA) and under 16 (UK)	3
4	Mother has been in care, looked after	-
5	Single parent, no relationship with father	2
6	Partner criminality	-
(see #2)	Maternal low intelligence	4
-	Maternal mental health problems	5
-	Maternal low self efficacy and mastery	6
7	Smoke in pregnancy	7

Maternity records reviewed in one test area

- Maternity Booking Form (paper)
- Personal Maternity Record (client)
- Short booking form (MSB, paper)
- Antenatal Risk Assessment (RA, paper)
- PROTOS (P, electronic)
- PROTOS short booking summary (electronic)

All sources, one test site

Factor		
Low SES/poverty		Possibly RA
Deprived neighbourhood		Yes, Postcode P & RA
No qualifications		No
Mother teenage		Yes P & RA
In care, looked after		Possibly RA
Single parent		Yes RA (P & MSB)
Partner criminality		No
Maternal low intelligence		Possibly RA
Maternal mental health problems		Possibly MSB & RA
Maternal low self efficacy, mastery		No
Smoker in pregnancy	7	Yes P & MSB



Conclusions, eligibility

- Low socioeconomic status or poverty would be the most crucial inclusion criterion but the closest that either the midwifery service or the FNP team is neighbourhood deprivation from the postcode
- Midwives and nurses are often reluctant to ask about mental health status until they get to know a woman and, unless it is required, they would not automatically ask about GCSE results.
- FNP nurses may be particularly resistant to asking about (lack of) qualifications at recruitment since the strength-based curriculum encourages clients to focus on what they can achieve in the future, not what they have failed to achieve in the past.



Conclusions, ongoing roll-out

- More detailed local discussion prior to introduction may be useful to clarify target client group, to understand that there may be some for whom it is not the best option even if they are the most vulnerable
- Each area may need to tailor its own target group, and all areas probably need to strengthen midwifery systems so that more of the relevant information is available.

English not client's first language

- Can FNP be delivered effectively using interpreters?
- Are changes to the programme needed to maximise benefits to clients?
- Does this vary across cultures or languages?

Methods

- Quantitative analysis of data for 1304 Wave 1 clients
- 30 Qualitative interviews with:
 - 8 Clients
 - 12 Family Nurses
 - 5 Supervisors
 - 2 Interpreters
 - 3 Interpreter managers

Patterns of use

- Most of visits 17 (40%)
- Mixed pattern 15 (35%)
- Start then stop 4 (9%)
- None, then start 3 (7%)
- Random few 4 (9%)

Languages

- Bengali 13 Sylheti 7
- Urdu 3 Polish 3
- Albanian 2 Kurdish 2
- Punjabi 2
- Chinese, Creole, Persian, Portuguese, Somali, Spanish, Sign language 1
- NB 2 other languages represented in qualitative interviews – Amharic, Lingala

Nature of clients

- Those ever using an interpreter differed significantly:
 - Older (37% 20 plus vs. 8%; none 13 to 15)
 - Married (78% vs. 6%)
 - Live with partner and often others but not own mother (78% vs. 24%)
 - Do not live with own mother (2% vs. 52%)
 - Never employed (83% vs. 43%)
 - Not smoker (93% vs. 60%)

Quantitative Delivery

- The % of expected visits in pregnancy and infancy was no different
- Mean visit length did not differ
- In pregnancy and infancy, less of planned content covered for interpreter clients
- No significant difference in attrition in pregnancy or infancy

Small variations in content

- Pregnancy, more time on personal health, less on environmental health
- Infancy less time on environmental health, trends for more time on personal health, less on family and friends
- Per site: infancy, one site less on maternal role; other site (mainly Asian) more on maternal role and less on family and friends

Referral to other agencies

- Clients ever needing an interpreter had fewer referrals on average
- None for social care (domestic violence, child protection)
- None for client education
- None for client mental health
- None for child care
- Fewer for housing
- More for refugee/asylum advice

Perceptions of delivery

- Contrary to the quantitative findings, FNs thought these visits were longer “because of all the checking and re-checking”; “you have to re-direct and stop and think.”
- More time was thought to be spent arranging the visits, and re-arranging. FNs need to take into account both client cancellation and interpreter sickness or unavailability, which was common
- In line with findings FNs thought less material was covered

Just what is being delivered?

- She'd have a 20 minute conversation and then would say to me "I've just explained about immunisation"
- On realising that interpreter was telling the family to use bought baby foods rather than weaning onto family food " I asked her immediately afterwards not to express her own opinion. She was accepting but she might do it again and I would not know."

Adapting materials?

- Some interpreters could not write the language spoken, so more reliance on visual materials
- Some clients disliked all paper/written materials
- PIPE could work well, leaving out the explanations and using more demonstration
- Helps if the interpreter willing to be animated, to model as the FN does
- Often work with extended family and some older family members indicated that 'play-like' activities were not useful, limiting the FN.

Making it work, FN interpreter relationship

- Helpful when interpreter spends time with FN to discuss the visit
- Useful when the interpreter was available between visits on the telephone
- Dependability is the most valued aspect
- Trust is essential to good teamwork, and the capacity for the interpreter to mimic the FN's approach (e.g. enthusiasm)
- Boundaries are important; "My mistake was to let [] have intellectual input, I should have been clearer and imposed tighter boundaries"

Conclusions, interpreters

- Use of interpreters is variable, not a simple yes/no situation for many
- Delivery with fidelity to stretch objectives is attained as closely as for those not using an interpreter
- Small variations in content likely to be related to demographic differences
- Need for interpreting may lead to less awareness of complex issues related to referral to other agencies

Conclusions, interpreters

- Clients are developing strong relationships with FNs through the interpreters, often noted as the most important aspect of good delivery
- Numbers were small for non-Asian clients so it was not possible to say if there were cultural differences
- A close and trusting FN-Interpreter relationship facilitated delivery, but was not usually easy to develop due to interpreter changes
- Interpreters should have some preparation, so that can understand FNP

Issues for sustainability

- Family Nurse career structure, FNs spend a substantial amount of time on non-FNP activities to maintain NHS requirements
- Central Government support for evidence-based practice has been important but ...now commissioners in some areas demand local evidence of local 'impact' in order to continue
- Linked with this, FNs not making full use of data collection within the programme to document maternal progress and child development, like programme but not the monitoring element – seen as central in US for roll-out

Central government support may be problematic

- This evidence-based programme can be provided within a system of care
- Has been expanded fast, now 50 sites
- But, impacts are being oversold prior to the UK RCT results
- “the programme is efficient and effective ... And having an impact, such as reducing smoking in pregnancy and increasing breastfeeding” (DCSF, 2009)

More information

- <http://www.iscfsi.bbk.ac.uk/projects/nurse-family-partnership-implementation-evaluation>

Pregnancy, Infancy and Toddlerhood reports available to download

Barnes (2010) From evidence-base to practice. *Journal of Children's Services*, 5(4), 4-17

Barnes et al., (in press) FNP through interpreters. *Health & Social Care in the Community*