Published March 2017 | Last updated April 2021

Family Nurse Partnership

Reviews: Foundations for Life, July 2016; January 2021

Family Nurse Partnership (FNP) is a home-visiting programme for young mothers expecting their first child.

The programme is delivered by highly trained and supervised nurses or midwives.

The FNP programme has three goals: 1) to improve pregnancy health and behaviours; 2) to improve child health and development by helping parents provide responsible and competent care; and 3) to improve economic self-sufficiency by helping parents plan for their own and their baby's future.

Mothers enrol in the programme early in their pregnancy and receive visits from a family nurse on a weekly basis before, and for the first six weeks after, the birth of their child. Visits then continue fortnightly until three months before the child's second birthday when visits become monthly in preparation for the programme ending. 64 visits in total are scheduled. During these visits, mothers learn about their young child's health and development, and receive support for their own well-being.

Evidence rating: **4+**

Cost rating: **5**

EIF Programme Assessment

Family Nurse Partnership has **evidence of a long-term positive impact** on child outcomes through multiple rigorous evaluations.

Evidence rating: **4+**

What does the evidence rating mean?

Level 4 indicates **evidence of effectiveness**. This means the programme can be described as evidence-based: it has evidence from at least two rigorously conducted evaluations (RCT/QED) demonstrating positive impacts across populations and environments lasting a year or longer.

What does the plus mean?

The plus rating indicates that a programme's best evidence is level 4 standard, and there is at least one other study at level 4, and at least one of the level 4 studies has been conducted independently of the programme provider.

Note: All of the trials have observed positive outcomes for children, although these outcomes have varied across the trials. Enhanced cognitive skills are seen most consistently, with both the Dutch and UK trials showing significantly improved cognitive functioning at 24 months, and the Memphis trial observing improved receptive language and school achievement at six years. In the UK trial, despite positive findings on cognitive outcomes for children, the short-term findings observed no improvements when it came to rates of maternal smoking, child birth weight, accidental child injuries and subsequent maternal pregnancies. The longer-term findings from this trial identified a consistent educational advantage for FNP children that was maintained five years after programme completion. However, the study also finds that FNP did not reduce rates of child maltreatment.

Cost rating

A rating of 5 indicates that a programme has a high cost to set up and deliver, compared with other interventions reviewed by EIF. This is equivalent to an estimated unit cost of more than £2,000.

Cost rating: **5**

Child outcomes

According to the best available evidence for this programme's impact, it can achieve the following positive outcomes for children:

Supporting children's mental health and wellbeing

Reduced internalising behaviour problems

Based on study 2

8.8-percentage point reduction in proportion of participants with internalising problems (measured using the Youth Self-Report)

Improvement index: **+11**

This means we would expect the average participant in the comparison group who did not receive the intervention (ie, someone for whom 50% of their peers have better outcomes and 50% have worse outcomes), to improve to the point where they would have better outcomes than 61% and worse outcomes than 39% of their peers, if they had received the intervention.

Long-term 10 years later

Based on study 4

14-percentage point decrease in proportion of participants with internalising behaviour (measured using the Child Behaviour Checklist - mother report)

Improvement index: **+7**

This means we would expect the average participant in the comparison group who did not receive the intervention (ie, someone for whom 50% of their peers have better outcomes and 50% have worse outcomes), to improve to the point where they would have better outcomes than 57% and worse outcomes than 43% of their peers, if they had received the intervention.

Immediately after the intervention

Improved infant responsiveness

Based on study 3

1.32-point improvement on mother-infant responsive interaction (coded observation)

Before completion of the intervention (child age 6 months)

Preventing child maltreatment

Reduced child abuse and neglect

Based on study 1

Reduction in number of substantiated reports of child abuse and neglect (administrative data)

Long-term Up to 13 years later

Based on study 4

8-percentage point decrease in proportion of participants with a child protective services report (measured using administrative data)

Improvement index: **+16**

This means we would expect the average participant in the comparison group who did not receive the intervention (ie, someone for whom 50% of their peers have better outcomes and 50% have worse outcomes), to improve to the point where they would have better outcomes than 66% and worse outcomes than 34% of their peers, if they had received the intervention.

Long-term Up to one year later

Enhancing school achievement & employment

Improved intellectual functioning

Based on study 2

2.1-point improvement on the Kaufman Assessment Battery for Children (mental processing composite)

Improvement index: **+7**

This means we would expect the average participant in the comparison group who did not receive the intervention (ie, someone for whom 50% of their peers have better outcomes and 50% have worse outcomes), to improve to the point where they would have better outcomes than 57% and worse outcomes than 43% of their peers, if they had received the intervention.

Long-term 4 years later

Improved child receptive language

Based on study 2

2.19-point improvement on the Peabody Picture Vocabulary Test

Improvement index: **+7**

This means we would expect the average participant in the comparison group who did not receive the intervention (ie, someone for whom 50% of their peers have better outcomes and 50% have worse outcomes), to improve to the point where they would have better outcomes than 57% and worse outcomes than 43% of their peers, if they had received the intervention.

Long-term 4 years later

Reduced developmental concerns

Based on study 5a

4.5-percentage point reduction in proportion of children with a reported developmental concern (measured using the Schedule of Growing Skills - mother report)

Improvement index: **+12**

This means we would expect the average participant in the comparison group who did not receive the intervention (ie, someone for whom 50% of their peers have better outcomes and 50% have worse outcomes), to improve to the point where they would have better outcomes than 62% and worse outcomes than 38% of their peers, if they had received the intervention.

Immediately after the intervention

Reduced rate of developmental delay in language

Based on study 5a

4.49-point improvement on Early Language Milestone Scale score

Immediately after the intervention

Improved school readiness

Based on study 5b

5.8-percentage point difference in proportion of participants achieving a good level of development (Early Years Foundation Stage Profile scores)

Improvement index: **+6**

This means we would expect the average participant in the comparison group who did not receive the intervention (ie, someone for whom 50% of their peers have better outcomes and 50% have worse outcomes), to improve to the point where they would have better outcomes than 56% and worse outcomes than 44% of their peers, if they had received the intervention.

Long-term 3 years later

Improved reading ability

Based on study 5b

Reduction in proportion of participants not reaching at least the expected standard of reading (measured using Key Stage 1 scores - reading ability)

Improvement index: **+6**

This means we would expect the average participant in the comparison group who did not receive the intervention (ie, someone for whom 50% of their peers have better outcomes and 50% have worse outcomes), to improve to the point where they would have better outcomes than 56% and worse outcomes than 44% of their peers, if they had received the intervention.

Long-term 5 years later

Preventing crime, violence and antisocial behaviour

Reduced child behavioural problems

Based on study 1

Long-term Up to 4 years later

Based on study 2

3.6-percentage point reduction in proportion of participants with behaviour problems (measured using the Child Behaviour Checklist)

Improvement index: **+25**

This means we would expect the average participant in the comparison group who did not receive the intervention (ie, someone for whom 50% of their peers have better outcomes and 50% have worse outcomes), to improve to the point where they would have better outcomes than 75% and worse outcomes than 25% of their peers, if they had received the intervention.

Long-term 4 years later

Reduced arrests in adolescence

Based on study 1

Reduction in number of arrests (adolescent report)

Long-term Up to 13 years later

Reduced convictions in adolescence

Based on study 1

Reduction in number of convictions (adolescent report)

Long-term Up to 13 years later

Preventing substance abuse

Reduced use of substances

Based on study 2

3.4-percentage point reduction in proportion of participants who have used cigarettes, alcohol, or marijuana in the past 30 days (measured using self-report interview)

Improvement index: **+26**

This means we would expect the average participant in the comparison group who did not receive the intervention (ie, someone for whom 50% of their peers have better outcomes and 50% have worse outcomes), to improve to the point where they would have better outcomes than 76% and worse outcomes than 24% of their peers, if they had received the intervention.

Long-term 10 years later

Preventing obesity and promoting healthy physical development

Reduced accident and emergency visits

Based on study 1

Reduction in number of A&E visits (administrative data)

Immediately after the intervention

Reduced accident and emergency visits for accidents and poisonings

Based on study 1

Reduction in number of A&E visits for accidents and poisonings (administrative data)

Immediately after the intervention

Reduced hospitalisations for injuries and ingestions

Based on study 2

Reduction in proportion of participants with hospitalisations for injuries and ingestions (administrative data)

Immediately after the intervention

Reduced number of health care encounters for injuries and ingestions

Based on study 2

Reduction in proportion of participants with health care encounters for injuries and ingestions (administrative data)

Immediately after the intervention

Reduced preventable-cause child mortality

Based on study 2

1.6-percentage point reduction in preventable-cause child mortality rate (measured using administrative data)

Improvement index: **+40**

This means we would expect the average participant in the comparison group who did not receive the intervention (ie, someone for whom 50% of their peers have better outcomes and 50% have worse outcomes), to improve to the point where they would have better outcomes than 90% and worse outcomes than 10% of their peers, if they had received the intervention.

Long-term 18 years later

This programme also has evidence of supporting positive outcomes for couples, parents or families that may be relevant to a commissioning decision. Please see the 'About the evidence' section for more detail.

Key programme characteristics

Who is it for?

The best available evidence for this programme relates to the following age-groups:

- Perinatal

How is it delivered?

The best available evidence for this programme relates to implementation through these delivery models:

- Home visiting

Where is it delivered?

The best available evidence for this programme relates to its implementation in these settings:

- Home

How is it targeted?

The best available evidence for this programme relates to its implementation as:

- Targeted selective

Where has it been implemented?

Netherlands, United Kingdom, United States

UK provision

This programme has been implemented in the UK.

UK evaluation

This programme's best evidence includes evaluation conducted in the UK.

About the programme

What happens during delivery?

How is it delivered?

- Family Nurses Partnership is delivered by a specially-trained family nurse through up to 64 home-based weekly fortnightly or monthly sessions, to first time mothers. Each session lasts 60–90 minutes.
- Teams of up to eight family nurses are led by a supervisor.

What happens during the intervention?

- A series of structured home visits are delivered using a wide range of materials and activities that build self-efficacy, change health behaviour, improve care giving and increase economic self-sufficiency.
- At the heart of the FNP model is the relationship between the client and the nurse. FNP builds on expectant mothers' (and fathers') intrinsic motivation to do the best for their child.
- A therapeutic alliance is built by specially-trained nurses, which supports families to make changes to their health behaviour and emotional development and form a positive relationship with their baby.
- Clients learn parenting skills (eg holiday baby, bathing baby) some using a doll, to demonstrate how to interact and place with the child and the nurse providing feedback as the mother interacts with the baby.

What are the implementation requirements?

Who can deliver it?

- Practitioners should be registered nurses with experience of community nursing and with babies and children eg school nursing, health visiting, midwifery, mental health with a minimum of QCF level 4/5.

What are the training requirements?

- Family nurses and supervisors are provided with a bespoke mixed-method learning programme, including both training events and individual and team-based learning materials. Once completed, this learning provides nurses and supervisors with the range of programme-specific knowledge and skills they require for their role.

How are the practitioners supervised?

- Supervision is core to the FNP model. Practitioners receive one hour per week of individual supervision and two hours per week of team-based supervision with supervisor, who must have minimum of QCF-7/8 and considerable clinical experience in relevant nursing profession.

What are the systems for maintaining fidelity?

- Regular review of programme fidelity data at multiple levels – nurse, site, national – generated from a real-time information system. National Unit regularly reviews site level fidelity data in line with license and offers quality improvement support to sites.

Is there a licensing requirement?

Yes, there is a licence required to run this programme.

How does it work? (Theory of Change)

How does it work?

- The FNP model draws from three scientific theories of human development: self-efficacy theory, ecological theory and attachment theory.
- Self-efficacy theory assumes that people are more likely to engage in activities in which they perceive themselves as successful. FNP therefore helps young mothers set realistic goals and break them down into small, achievable steps. Mothers then gain a sense of accomplishment as they see themselves achieving each goal. This sense of efficacy, in turn, increases mothers' motivation to pursue further goals, including positive lifestyle goals and higher education.
- Ecological theory assumes that the quality of support mothers give their children is influenced by the quality of support they receive from their family and community. FNP therefore helps young parents develop positive links with other family members and community resources.
- Attachment theory assumes that children are more likely to form positive expectations about themselves and others if they are raised in a warm and sensitive family environment. FNP therefore helps first-time mothers respond sensitively to their child and create a warm and predictable environment.
- In the short term, young mothers are more likely to provide their infant with nurturing and sensitive care and make positive health and educational choices for themselves.
- In the longer term, children will be more likely to do well in school, complete their education and be less likely to engage in antisocial behaviour.

Intended outcomes

Supporting children's mental health and wellbeing Preventing child maltreatment Preventing crime, violence and antisocial behaviour Preventing substance abuse Preventing risky sexual behaviour & teen pregnancy

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About the evidence

FNP has evidence from five rigorously conducted RCTs taking place since the 1980s.

Study 1

Citation: Elmira trial | **Design:** RCT

Country: United States

Sample: 400 highly disadvantaged first-time teen mothers (up to 19 years) living in Elmira, New York

Child outcomes:

Reduced accident and emergency visits

Reduced accident and emergency visits for accidents and poisonings

Reduced child behavioural problems

Reduced arrests in adolescence

Reduced convictions in adolescence

Reduced child abuse and neglect

Other outcomes:

Reduced smoking (at childbirth)

Increased social support during pregnancy and delivery (at childbirth)

Increased access to community services (at childbirth)

Improved diet (at childbirth)

Reduced kidney infections (at childbirth)

Improved maternal involvement (child age 2-6)

Reduced use of punishment (child age 2-6)

Olds, D. L., Henderson, C. R., Tatelbaum, R., & Chamberlin, R. (1986a). Improving the delivery of prenatal care and outcomes of pregnancy: A randomized trial of nurse home visitation. *Pediatrics, 77*, 16-28.

Olds, D. L., Henderson, C. R., Chamberlin, R., & Tatelbaum, R. (1986b). Preventing child abuse and neglect: A randomized trial of nurse home visitation. *Pediatrics, 78*, 65-78.

Olds, D., Henderson Jr, C. R., Cole, R., Eckenrode, J., Kitzman, H., Luckey, D., Pettitt, L., Sidora, K., Morris, P., & Powers, J. (1998). Long-term effects of nurse home visitation on children's criminal and antisocial behaviour: 15-year follow-up of a randomized controlled trial. *Journal of the American Medical Association*, 280, 1238-1244.

Olds, D. L., Eckenrode, J., Henderson, C. R., Kitzman, H., Powers, J., Cole, R., Sidora, K., Morris, P., Pettitt, L.M., & Luckey, D. (1997). Long-term effects of home visitation on maternal life course and child abuse and neglect: Fifteen-year follow-up of a randomized trial. *Journal of the American Medical Association* 278, 637-643.

Eckenrode, J., Campa, M., Luckey, D. W., Henderson, C. R., Cole, R., Kitzman, H., Anson, E., Sidora-Arcoleo, Powe, J., & Olds, D. (2010). Long-term effects of prenatal and infancy nurse home visitation on the life course of youths: 19-year follow-up of a randomized trial. *Archives of Pediatrics & Adolescent Medicine,* 164, 9-15.

Study 2

Citation: Memphis trial | **Design:** RCT

Country: United States

Sample: 1,139 first-time teen mothers living in African-American communities in Memphis, Tennessee

Child outcomes:

Reduced hospitalisations for injuries and ingestions

Reduced number of health care encounters for injuries and ingestions

Improved intellectual functioning

Improved child receptive language

Reduced child behavioural problems

Reduced use of substances

Reduced internalising behaviour problems

Reduced preventable-cause child mortality

Other outcomes:

Increased access to community services (at childbirth)

Increased attempted breastfeeding (between childbirth and child age two)

Improved home environment (child age two)

Improved beliefs about abuse and neglect (child age two)

Improved self-efficacy (child age two)

Kitzman, H., Olds, D. L., Henderson, C. R., Hanks, C., Cole, R. Tatelbaum, R., McConnochie, K. M., Sidora, K., Luckey, D. W., Shaver, D., Englehardt, K., James, D., & Barnard, K. (1997). Effect of prenatal and infancy home visitation by nurses on pregnancy outcomes, childhood injuries, and repeated childbearing. *Journal of the American Medical Association*, *278(8),* 644-652.

Olds, D. L., Kitzman, H., Cole, R., Robinson, J., Sidora, K., Luckey, D. W, Henderson, C. R., Hanks, C., Bondy, J., & Holmberg, J. (2004). Effects of nurse home-visiting on maternal life course and child development: Age-6 follow-up results of a randomized trial. *Pediatrics*, 114(6), 1550-1559.

Olds, D. L., Kitzman, H., Hanks, C., Cole, R., Anson, E., Sidora-Arcoleo, K. Luckey, D. W., Henderson, C. R., Holmberg, J., Tutt, R.A., Stevenson, A.J., & Bondy, J. (2007). Effects of nurse home visiting on maternal and child functioning: age-9 follow-up of a randomized trial. *Pediatrics*, 120 832-845.

Kitzman, H., J., Olds, D, L., Cole, R.E., Hanks, C.A., Anson, E.A., Arcoleo, K.J., Luckey, D.W., Knudtson, M.D., Henderson, C.R., & Holmberg, J.R. (2010). Enduring effects of prenatal and infancy home visiting by nurses on children: follow-up of a randomized trial among children at age 12 years. *Archives of Pediatrics & Adolescent Medicine*, 164(5), 412-418.

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Olds, D. L., Kitzman, H., Knudtson, M. D., Anson, E., Smith, J. A., & Cole, R. (2014). Effect of home visiting by nurses on maternal and child mortality: Results of a 2-decade follow-up of a randomized clinical trial. *JAMA paediatrics*, 168(9), 800-806.

Study 3

Citation: Denver trial | **Design:** RCT

Country: United States

Sample: 735 single, first-time teenage mothers living in disadvantaged communities in Denver, Colorado

Child outcomes:

Improved infant responsiveness

Other outcomes:

Reduced smoking (at childbirth)

Reduced domestic violence (child age 2-6)

Olds, D. L., Robinson, J,, O'Brien, R., Luckey, D. W., Pettitt, L. M., Henderson, C. R., Ng, R. K., Sheff, K. L., Korfmacher, J., Hiatt, S., & Talmi, A. (2002). Home visiting by paraprofessionals and by nurses: A randomized, controlled trial. *Pediatrics, 110,* 486-496.

Olds, D. L., Robinson, J., Pettitt, L., Luckey, D. W., Holmberg, J., Ng, R. K., Isacks, K., Sheff, K., & Henderson, C. R. (2004). Effects of home visits by paraprofessionals and by nurses: age-4 follow-up results of a randomized trial. *Pediatrics, 114*, 1560-1568.

Olds, D. L., Holmberg, J. R., Donelan-McCall, N., Luckey, D. W., Knudtson, M. D., & Robinson, J. (2014). Effects of home visits by paraprofessionals and by nurses on children: follow-up of a randomized trial at ages 6 and 9 years. *JAMA pediatrics, 168*, 114-121.

Study 4

Citation: Dutch trial | **Design:** RCT

Country: Netherlands

Sample: 460 young (up to 25 years), first-time Dutch mothers with low educational attainment and at least one other risk factor

Child outcomes:

Reduced internalising behaviour problems

Reduced child abuse and neglect

Other outcomes:

Reduced domestic violence (at childbirth)

Reduced smoking (at childbirth)

Increased attempted breastfeeding (between childbirth and child age two)

Increased breastfeeding duration (between childbirth and child age two)

Improved home environment (child age two)

Mejdoubi, J., van den Heijkant, S., van Leerdam, F. J. M., Crone, M., Crijnen, A., & HiraSing, R. A. (2014). Effects of nurse home visitation on cigarette smoking, pregnancy outcomes and breastfeeding: A randomized controlled trial. *Midwifery, 30*, 688 – 695.

Mejdoubi, J., van den Heijkant, S. C. C. M., van Leerdam, F. K. M., Heymans, M. W., Hirasing, R. A., & Crijnen, A. A. M. (2013). Effect of nurse home visits vs. usual care on reducing intimate partner violence in young high-risk pregnant women: A randomized controlled trial. *PLOS One*, DOI: 10.1371/journal.pone.007818.

Mejdoubi, J., van den Heijkant, S. C. C. M., van Leerdam, F. J.M.,Heymans, M. W., Crijnen, A., & Hirasing, R.A. (2015).The effect of VoorZorg, the Dutch Nurse-family Partnership, on child maltreatment and development: A randomized controlled trial. *Plos One*, DOI:10, 1371/journal.pone.0120182.

Study 5

Citation: UK trial | **Design:** RCT

Country: United Kingdom

Sample: 1,645 first-time teen mothers (up to 19 years) living in disadvantaged communities throughout England

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Other outcomes:

Improved self-efficacy (child aged two)

Robling, M., Bekkers, M., Bell, K., Butler, C. Cannings-John, R., Channon, S., Corbacho Martin, B., Gregory, J., Hood, K., Kemp, A., Kenkre, J., Montgomery, A.A., Moody, G., Owen-Jones, E., Prof Pickett, K., Richardson, G., Roberts, Z.E.S., Ronaldson, S., Sanders, J., Stamuli, E., & Torgerson, D. (2015). Effectiveness of a nurse-led intensive home-visitation programme for first-time teenage mothers (Building Blocks): A pragmatic randomised controlled trial. *The Lancet*, http://dx.doi.org/10.1016/S0140-6736(15)00392-X.

Guidebook

The EIF Guidebook provides information about early intervention programmes that have at least preliminary evidence of achieving positive outcomes for children. It provides information based on EIF's assessment of the strength of evidence for a programme's effectiveness, and on detail about programmes shared with us by those who design, run and deliver them.

The Guidebook serves an important starting point for commissioners to find out more about effective early interventions, and for programme providers to find out more about what good evidence of impact looks like and how it can be captured. As just one of our key resources for commissioners and practitioners, the Guidebook is an essential part of EIF's work to support the development of and investment in effective early intervention programmes.

Our assessment of the evidence for a programme's effectiveness can inform and support certain parts of a commissioning decision, but it is not a substitute for professional judgment. Evidence about what has worked in the past offers no guarantee that an approach will work in all circumstances. Crucially, the Guidebook is not a market comparison website: ratings and other information should not be interpreted as a specific recommendation, kite mark or endorsement for any programme.

How to read the Guidebook

EIF evidence standards

About the EIF Guidebook

EIF

The Early Intervention Foundation (EIF) is an independent charity and a member of the What Works network. We support the use of effective early intervention for children, young people and their families: identifying signals of risk, and responding with effective interventions to improve outcomes, reduce hardship and save the public money in the long term.

We work by generating evidence and knowledge of what works in our field, putting this information in the hands of commissioners, practitioners and policymakers, and supporting the adoption of the evidence in local areas and relevant sectors.

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