

health  
technology  
assessment



REPORT

*Home  
Visiting*

HEALTH TECHNOLOGY ASSESSMENT UNIT  
MEDICAL DEVELOPMENT DIVISION  
MINISTRY OF HEALTH MALAYSIA  
MOH/P/PAK/52.02(TR)

## **EXECUTIVE SUMMARY**

### **INTRODUCTION**

Home visitation or health visiting has been widely used as an intervention strategy in health care services in many countries. It has been defined as "... planned activities aimed at the promotion of health and prevention of disease. It therefore contributes substantially to individual and social well-being, by focusing attention at various times on either an individual, a social group or a community" (Cowley, 1998). Home visiting in the Family Health programme in Malaysia mainly involves various categories of public health nursing personnel namely public health nurses, staff nurses, community nurses, assistant nurses and midwives rendering services in accordance with their capacities, roles and functions.

### **OBJECTIVE**

To assess the effectiveness, efficiency and cost effectiveness of home visiting.

### **SCOPE OF ASSESSMENT**

The following was the scope of the assessment:

- i) Confined to home visiting in health care services
- ii) Home visiting only by public health nurses, and not other categories of personnel  
Home visiting specifically in the areas of child health, pregnancy and postnatal care, elderly care, nutrition and mental health are considered.

### **CONCLUSIONS**

After reviewing the literature, it was found that home visiting has positive effects in many aspects of health care. While some studies were inconclusive or did not support positive effects, there were no negative effects of home visiting reported.

#### **Antenatal and Postnatal Periods**

Home visiting is effective during both the antenatal and postnatal periods including the use of pregnancy related services. However, while there were positive effects of home visiting on the health behaviour of mothers, the evidence in relation to deliveries and medical and social outcomes were inconclusive.

#### **Child Health Care**

There was evidence to show that home visiting was beneficial in various aspects of child health care. The positive effects included reduced rate of child injury, reduced recurrence of child maltreatment, improved growth among children with failure to thrive, reduced developmental delay, improved motor and cognitive development and behaviour with fewer behavioural problems, reduced acute care visits, as well as reductions in hospitalisation and re-hospitalisation, fewer acute care and emergency hospital visit, fewer missed well baby clinic visits and missed post-partum appointments. It also was

effective in delivering preventive services, reducing the prevalence of infant health problems, increased immunisation coverage and supporting early hospital discharge.

Although home visiting was cost effective in comparison to hospitalisation, in comparison to other strategies, telephones were found to be more cost-effective.

### **Nutrition**

With respect to breast feeding the evidence on effect of home visiting on compliance to breast-feeding was inconclusive. There was limited evidence on beneficial nutritional effects with home visiting.

### **Elderly Care**

There was evidence to show that home visiting helped in the detection of unrecognisable treatable problems in the elderly. Evidence on the beneficial effects on specific groups of elderly people was limited. There was inconclusive evidence on benefits of home visiting in prevention, while there was no evidence of improvement in immunisation acceptance among the elderly.

### **Mental Health**

There was inadequate evidence on the effectiveness of home visiting for mental health.

### **Cost effectiveness**

Different aspects of cost effectiveness have been highlighted in the studies. There is evidence of lower cost of home visits compared to hospitalisation. Other evidence showed cost savings to hospitals. However, when compared with other outreach programmes, home visiting does not appear to be the most cost-effective strategy. Indirect cost savings such as reduction in acute care visits and re-hospitalisations have also been implied in a few studies.

## **RECOMMENDATIONS**

There is sufficient evidence of the effectiveness of home visiting, especially in relation to maternal and child health services and in care of the elderly. Thus, this service should be continued as part of the continuum of health care service. However, the focus should be on families or persons at high risk. The cases to be visited need to be specifically selected and prioritised based on their conditions.

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## 1. BACKGROUND

Home visitation or health visiting has been widely used as an intervention strategy in health care services in many countries. Home health visitations mainly involve public health nurses, midwives or other health care professionals, but volunteers and other support groups are known to have participated in the service. In some countries, home visiting is free, voluntary and not income-related, and embedded in the maternal and child health systems. (American Academy of Pediatrics, 1998).

The Council for Education and Training of Health Visitors, United Kingdom, defined health visiting as “planned activities aimed at the promotion of health and prevention of disease. It therefore contributes substantially to individual and social wellbeing, by focusing attention at various times on either an individual, a social group or a community.” (Cowley, 1998).

Health related home visitations had its beginnings in the nineteenth century. In the United Kingdom, health-visiting programme was nurtured in the public health movement in the mid-nineteenth century, the purpose of which was preventive, and aimed at helping the population through health teaching and counseling. Currently, prospective mothers in England are visited at least once before delivery; with six more visits occurring before the child is 5 years of age. (Kameraman, 1993).

In the U.S., the home visitation programme began in the late nineteenth century, where public health nurses and social workers provided in-home education and health care to women and children primarily in the poor environments. Home visiting involving public health nurses has since continued to be advocated, although it is more focused on families with special needs such as premature or low birth infants, children with developmental delay, teenage parents, and families at risk for child abuse and neglect. Continued efforts are being undertaken vigorously to advocate home visiting programme as an early intervention strategy to improve health outcomes and wellbeing of children (American Academy of Pediatrics, 1998).

In Europe, Denmark established home visiting by law in 1937, after a pilot programme was successful in lowering infant mortality. In France, prenatal and home visits by midwives and nurses are being provided free-of-charge, to provide education about smoking, nutrition, alcohol and other drug use and other health related issues. (American Academy of Pediatrics, 1998).

Home visiting in Malaysia started with the formulation of the rural health scheme under the 5-year developmental plan after independence in 1957. Home visiting has since been primarily centered on the Maternal and Child Health (MCH) programme. Since the initial Public Health Nursing training programme in the early seventies was based on the United Kingdom’s training of Health Visitors under the Royal Society of Health, London, home visiting was also modeled after its health visitors’ programme. (Esah, 1995). With

the current expansion of scope in Primary Health Care Services, home visiting has gradually expanded to include other activities such as care of the elderly, children with special needs and community mental health.

Other personnel in the public health programme who carry out home visiting are the Public Health Inspectorate staffs who visit homes for contact tracing and other activities under the Communicable Disease Control Act, 1973. The Tuberculosis Control Programme of the Ministry also has a component of home visiting and contact tracing (Ministry of Health, Malaysia, 1998). Other home visiting services in the country are those being carried out by the general practitioners to homes of patients who require medical attention, but are unable to present themselves to the clinic/hospital due to specific problems.

Evaluating home visiting from the service providers and users perspective, Julkunmen (1994), found that public health nurses view the functions of home visiting as the provision of support and encouragement to ensure continuity of care as being most important. Clients, however felt that having professional examination of the newborn was most important.

## **2. INTRODUCTION**

Home visiting in the MCH or Family Health programme in Malaysia mainly involves various categories of public health nursing personnel, namely, public health nurses, staff nurses, community nurses, assistant nurses and midwives, rendering services in accordance with their capacities, roles and functions. Home visiting has been referred to as the backbone of public health nursing practice. It enables public health nursing personnel to gain insights into the family's socio-economic situation, health practices, physical environment as well as foster positive relationships with family members (Public Health Nursing Manual, Ministry of Health Malaysia, 1997).

However, the number of home visiting carried out by nurses has shown a slight decline in recent years (Table 1). Home visiting can be costly in terms of human resources, finance and time. Thus, there is a need to review home visiting as a delivery mode and whether it is an appropriate, effective and cost-effective in the provision of health care services.



*Number of Home Visits by Nurses under the Family Health Programme,  
Ministry of Health Malaysia*

Table 1 (a) Home visits for Maternal Health

Year	Antenatal	Deliveries	Postnatal / New-born	Family Planning
1995	774 033	97 199	1 645 344	157 703
1996	715 935	84 215	1 571 996	151 617
1997	752 511	77 423	1 652 014	166 813
1998	627 202	56 552	1 458 783	145 574

Table 1 (b) Home visits for Child Health

Year	Immunisation	LBW Babies	Nutrition	Problems with growth & development	Other referred cases
1995	642 920	8 855	99 320	99 320	15 108
1996	511 886	8 208	83 387	14 516	43 438
1997	521 495	9 043	85 645	13 259	43 787
1998	416 308	7 915	75 691	12 297	39 565

Table 1 (c) Other Home Visits

Year	Other Visits
1995	564 129
1996	575 521
1997	611 317
1998	514 771

*(Source: MCH Returns 1998, Information and Documentation Systems Unit, Ministry of Health Malaysia)*

### 3. OBJECTIVE

To assess the effectiveness, efficiency and cost-effectiveness of home visiting.

### 4. SCOPE OF ASSESSMENT

The following was the scope of the assessment:

- i) It was confined to home visiting services currently provided in public health by the Ministry of Health Malaysia i.e. pregnancy and postnatal care, child health, nutrition, elderly care, and mental health

- ii) Home visiting carried out only by public health nurses was considered. Other categories of personnel were excluded.

## **5. TECHNICAL FEATURES**

Home visiting focuses on the following:

- Promoting support systems and encouraging the use of health and other related resources.
- Promoting adequate and effective care of a family member who has a specific problem related to illness or disability.
- Encouraging normal growth and development of family members
- Educating the family on health promotion and prevention
- Strengthening family function and relatedness.
- Promoting a healthy environment.

The services currently being provided by the Home Visiting Programme under Family Health Services, Ministry of Health Malaysia are as follows:

- Follow up of mother / child / family at risk
- Post-natal mothers and newborns
- Rehabilitation of children with special needs
- Health supervision and rehabilitation of elderly persons

*(Source: Public Health Nursing Manual, Ministry of Health Malaysia, 1997)*

## **6. METHODOLOGY**

### **6.1. Literature Search**

- Literature searches were conducted from the years 1988 to 1998 using MEDLINE, Cochrane Library, and other common databases were search using the following key words: *Home Visiting, Home Health Visiting, Home Visitor, Health Visiting, Public Health Nursing, Community Health Nursing, Maternal and Child Health, Nutrition, Elderly Health Care, Community Psychiatric Nursing, Effectiveness, Efficiency, Cost-effectiveness, Cost implications, Economic Implications, Antenatal care, Paediatrics*, either singly or in combination.
- Prominent public health journals, nursing journals and relevant references available were hand-searched, going back 2 to 3 years.
- More than 1500 titles were screened through, out of which 69 articles were retrieved. A total of sixty-nine articles were judged relevant.

## 6.2. Categories of Articles

- The sixty-nine articles judged to be relevant, were rated using grades of evidence of *Good to Poor* derived from the scale for grading of evidence of the Catalan Agency for Health Technology Assessment (CAHTA), Spain (refer Appendix 1).
- Of the 69 articles, 33 were graded as good, 21 fair, and 12 poor. Taking all 69 relevant articles, 15 were related to antenatal and postnatal care, 39 to child health care, 6 to nutrition, 9 were on elderly care, and 5 on mental health, as shown in the evidence table.

## 6.3 Local Survey

A cross sectional survey entitled *Survey on attitude and practice among health staff on practice of home visiting and home nursing* was conducted in October 1998. The respondents comprised health personnel (nurses, medical assistants, and health inspectors) who were randomly selected. The survey examined the practices and workload, and evaluated the attitude and opinion of health staff involved in home visiting.

## 7. RESULTS AND DISCUSSION

The findings are discussed under the following headings:

- Ante-natal and post-natal care
- Child Health Care
- Nutrition
- Elderly care
- Mental health

### 7.1. Ante-natal and Post-natal Care

#### 7.1.1 Deliveries

There were four studies related to pre-term deliveries, birth weight and birth intervals. Three studies (Blondel 1995, Villar 1996, Kitzman 1997) found slight reduction to no effects on pre-term deliveries or low birth weight babies. Olds et al in 1997 found lower rates of occurrence of subsequent pregnancies, less subsequent births and longer birth intervals among the intervention subjects.

#### 7.1.2 Effects on health behaviour

Six studies reported positive effects on outcomes related to support and encouragement and health behaviour. In a systematic review of randomised controlled trials, Blondel and Mellier (1996) found that home visiting had positive effects on women in terms of social support, health behaviour and knowledge of medical problems. Similarly, Olds et

al. in a study (Olds, 1997) with 15 years follow-up, found that prenatal and childhood visitations by nurses can reduce child abuse and neglect and criminal behaviour among low income unmarried mothers up to about 15 years (Blondel, 1996). The other evidence of positive effects on behaviour includes studies by Blondel and Olds (1995). In addition, a study done by Olds, Henderson and Tatlebaun (1994) showed the positive influence of home visiting on reducing the harmful effects of smoking in antenatal mothers.

### *7.1.3 Medical and psychological outcomes*

Both studies by Hodnett (1994) and Blondel and Br'aert (1995) found no effect of home visiting on medical outcomes but Hodnett (1994) noted a few psychological outcomes. However, a trial done by Kitzman (1997), found that fewer women visited by nurses during pregnancy had pregnancy-induced hypertension.

### *7.1.4 Use of pregnancy related services*

Home visiting appears to increase the utilisation of pregnancy related services among low income women (Bradley & Martin 1994), and enhances clients 'connectedness' with the health care system (Ghilarducci & Mc Cool, 1993) resulting in less number of missed appointments.

## **7.2. Child Health Care**

### *7.2.1 Child injury, abuse and neglect*

Five trials were related to child abuse, neglect and injury.

A meta-analysis of 33 trials by Roberts et al, (1996) found that home visiting programme reduced the rate of injury although no conclusions could be made about the effects on the rates of child abuse. Another meta-analysis by Hodnett et al, (1997) found that in six of the eight trials reviewed there was a lower incidence of injury in the visited group. With respect to the literature on child abuse and neglect, in four trials, the frequency of occurrence of abuse was lower in the visited group; while in four others the frequency of occurrence was higher in the visited group. A randomised controlled trial by Olds et al, (1994) found 40% fewer injuries and ingestion, but there was inconclusive evidence on reductions in child abuse and neglect. There was other evidence of improvement with home visiting among maltreated children of socially disadvantaged mothers, such as less serious expression of care giving dysfunction and safer and more simulating environment in the trial by Olds et. al. (1995).

A public health nurse home visiting programme was also found to be successful in preventing recurrence of child maltreatment. (MacMillan, 1993).

### *7.2.2 Growth and development*

Nine studies were related to growth and development. Five studies were of good level of evidence and four were fair. All trials reported beneficial effects of home visiting.

A randomised clinical trial involving children with failure to thrive by Black et al, (1995) reported findings on its ability to promote a nurturing home environment and reduce developmental delay. Home visiting has also been found to be a useful basis for developmental surveillance (Larsson, 1996) and for the selection of children who are at risk of subsequent development problems (Airelus, 1994). The findings of a randomised controlled trial by Wright et al, (1998) on children with failure to thrive, also showed that home visiting with limited specialist support could significantly improve growth among these children compared with conventional management. In a follow up study, Hutchenson et al, (1997) found positive effects of home intervention on the motor and cognitive development, and behaviour of these children at 4 years of age.

The efficacy of home visitation is evident in another randomised clinical trial by Black et al. (1994). The findings of the trial showed positive effects on development among children of socially disadvantaged women.

There were two trials that involved a study of low birth weight (LBW) infants. In the study of early educational intervention for very low birth weight infants, the study groups were found to have higher cognitive developmental scores (McCormick, 1993). Another randomised controlled trial on early interventions showed positive effects of IQ and verbal IQ performance in heavier LBW infants at the age of five years (Brooks-Gunn, 1996). However these effects were not observed in lighter LBW premature infants.

### *7.2.3 Clinic attendance*

Two of the three studies related to clinic attendance showed positive effects of home visiting, resulting in the reduction of visits that were deemed unnecessary.

The findings of a study by Braveman et al, (1996) showed that nurse visitations resulted in less acute care visits, re-hospitalisation and missed well baby visits in low-risk newborns after early discharge from hospitals. Similarly, Ghilarducci and McCool (1993) found that home visitations enhanced clients 'connectedness' with the health care system and lessened the number of missed appointments for the six-week postpartum examinations.

However, a randomised controlled trial by Schuster et al, (1998) found that a home visitation programme is not an effective way to increase the number of well-child care visits.

### *7.2.4 Infant health*

Of the seven articles related to infant health, six reported positive effects of home visiting. Only one trial reported no significant difference between intervention and non-intervention subjects.

In a systematic review of 77 articles Cilista et al, (1998) found among others, evidence of the success of home visiting strategy for delivering preventive services to families with young children. Effects include positive outcomes across all domains and determinants of health. Similarly, the findings of a randomised controlled trial by Ransjo-Arvidson et al, (1998) showed that home visiting by a midwife reduced the prevalence of infant health problems, and enabled the mother to take action more often when infant health problems are identified. Another study carrying out an evaluation of a home visiting programme to reduce post-neonatal mortality in disadvantaged communities found that home visiting helped mothers maintain good health practices and infants' outcome showed consistent positive effects on physical health (Barnes-Boyd, 1996).

The American Academy of Paediatrics, in its policy statement on the role of home visitation programmes in improving the health outcomes for children and families, concludes that home visiting effectively improves the health and well-being of children, particularly if they are embedded in comprehensive community services to families at risk (American Academy of Paediatrics, 1998). The effects are said to include positive outcomes across all domains and determinants of health.

An early educational intervention programme that includes home visiting as part of the intervention, for low birth weight infants, reported that all children in the intervention group had slightly higher rates of less serious morbidity. In this study, home visiting was part of the strategy (McCormick, 1993). However, a comparative study on post-partum home visits to mothers and infants found no significant difference between home-visited and non-home visited participants for the majority of health outcome variables (Barkauskas, 1983).

## Child immunisation

There were three studies related to childhood immunisation. Two trials done by Wood et al, (1998) and Brugha et al, (1996) found home visiting to be effective in increasing immunisation coverage particularly in certain disadvantaged communities. A meta-analysis by Hodnett et al (1997) reported that infants of visited mothers were less likely to have incomplete well-child immunisation.

### *7.2.5 Support for early discharge*

Two studies (Brumfield, 1996; Brooten, 1986) reported positive effects of follow up health visits on early discharge of newborn infants. In both studies, the early discharge with follow up visits in the home was found to be safe. Participants in the second study were infants with very low birth weight.

### *7.2.6 Cost-effectiveness*

Of four studies, two supported the cost-effectiveness of home visits. A randomised controlled trial by Brooten et al, (1986) reported lower costs of home follow up care compared to the costs of hospitalisation, due to early discharge from hospital. In a prospective study by Brumfield et al, (1996) it was found that there were cost savings to the hospital that practiced early hospital discharge and follow-up home visits.

However, in a randomised controlled trial to test the cost-effectiveness of three outreach interventions (mail, telephones, home visits) for well-child screening, it was reported that phone calls to be the most cost-effective method (Selby-Harrington, 1995). Similarly, Wood et al, (1998) in a randomised controlled trial, noted that case management with home visiting was not cost-effective in raising immunisation levels for the intervention group.

### *7.2.7 Child behaviour*

Three studies reported effects on behaviour of the children. In a prospective study by Olds et al, (1994), fewer behavioural and parental coping problems were observed among nurse visited children. However, a randomised controlled trial of early educational intervention by McCormick, (1993), reported that there was no difference in overall behaviour, but there were significantly lowered behavioural problems scores among very low birth weight infants who had home visiting. A follow-up study at the age of five years by Brooks (1996) also showed that home visiting did not affect health or behaviour.

### *7.2.8 Hospital admission and emergency department visit*

All three studies related to hospital admissions and emergency department visits reported lower rates of such admissions and visits among the study groups.

The randomised controlled trial by Olds et al, (1994) found that nurse visited children had fewer visits to the emergency department compared to the control group. While, Braveman et al (1996) in a prospective study, reported less acute care visits, re-hospitalisations and missed well-baby visits among new-borns who received home visiting. A meta-analysis by Hodnett and Robert (1997) of four trials on hospital admissions, reported that babies of families with home visiting were less likely to require hospitalisation, and had fewer emergency department visits.

### 7.3. Nutrition

Six studies were related to nutrition. Three were of good level of evidence while three were fair evidence.

#### 7.3.1 *Breast feeding*

Four studies had outcomes related to breast-feeding. Two studies by Chen (1993) and Quinn (1997) reported that there were no effects of home visiting on compliance to breast-feeding. A randomised controlled trial by Haider et al, (1996) showed positive effects on mothers to start exclusive breast-feeding during hospitalisation, and to continue the practice at home, with counseling at the hospital as well as at home. Another randomised controlled trial by Ransjö-Arvidson et al (1998) found a higher prevalence of infant health problems and breast feeding problems among infants who were visited only once, compared to other babies visited four times by the midwife after delivery.

#### 7.3.2 *Growth and development*

Home visits when combined with other nutritional interventions were found to have beneficial effects on severely malnourished children (Tellier, 1996). A 14-year follow-up study by Grantham-McGregor et al (1994) showed significantly higher IQ scores among intervention groups who received home visiting compared to the non-intervention group.

### 7.4. *Elderly Care*

Nine articles were reviewed under elderly care. Out of the nine, five had good level of evidence, three was fair and one was poor.

#### 7.4.1 *Detection of unrecognisable treatable problems/ elderly abuse*

Three studies had outcomes related to detection of unrecognisable treatable problems and elderly abuse.

The ability of home visiting to detect unrecognisable, treatable problems among the elderly, as well as elderly abuse is evident in two studies. Stalenhoef (1996) found that



with home visiting, nurses were able to obtain substantial information about health problems.

Similarly, home geriatric screening involving nurses or physicians' assistants, was also found to be effective in detecting unrecognisable treatable problems (Fabacher, 1994). Another study on diagnostic home visits by Nikolaus in 1995 supported these findings.

#### *7.4.2 Beneficial effects for specific case*

Three studies were related to home visits for elderly with specific conditions.

A survey on the *perceptions of doctors* on the nature of illnesses in the elderly that require home visiting in Saudi Arabia (al Shammari, 1997), gave priority to bed-ridden patients rather than mobile chronically ill patients. A randomised controlled trial by Runciman et al, (1996), involving 222 elderly patients, *discharged from Accident and Emergency departments*, found health visitor assessment and arrangement of relevant community services to be feasible and helpful, resulting in improved confidence and morale in patients.

Another trial by Hansen (1995), found that regular follow-up home visits by a geriatric team to selected frail elderly patients discharged from a geriatric ward, can reduce the risks of re-admissions.

#### *7.4.3 Preventive home visits*

A study by Jensen (1997) found preventive home visits to have beneficial effects on elderly people specifically when health care personnel undertake visits, and, when such visits were on going. However, the findings of the randomised controlled trial by van Rossum et al, (1993) showed that preventive home visits to elderly people living at home, had no effect on the health of the general population, but were effective when restricted to subjects with poor health.

#### *7.4.4 Acceptance of influenza vaccine by the elderly*

Only one study is related to effects on acceptance of vaccine. It found no statistically significant difference in the influenza immunisation rates between the intervention and control groups in a population aged 65 years or more (Black, 1993).

### **7.5. Mental Health**

Five articles were related to mental health.

In general, home visits to patients with schizophrenia by public health nurses provided assistance to create new relationships with others and enhanced empowerment of patients. Registered nurses carried out compensatory care for patients with permanent ability deficits (Kayama, 1998).

### *7.5.1 Effectiveness*

A trial by Paykel et al, (1982) showed home visits to be effective in terms of greater client satisfaction and reduction in out patients contact with the psychiatrists. In another study on the mental well being of patients with coronary artery by-pass, (Buls, 1995), home visits were found to reduce the anxiety level of clients and their spouses, as well as prevent costly hospitalisation. Study findings by Black et al, (1994) cautioned the optimism regarding the efficacy of early home intervention promoting positive behaviour among drug-abusing women, finding only marginal benefits. However, since the intervention sample was rather small (sample size of 31), it was suggested that further studies with larger samples were needed.

### *7.5.2 Quality of home visits*

In a survey involving Public Health Nurses at health centres it was found that the nurses' attitude towards counselling, and their participation in group work services and case conferences, contribute towards increasing their productivity, which in turn influences the quality of the home visitations (Kuroda, 1991),.

## **7.6. Local Survey**

The results of a local survey indicated, among other things, that home visiting under the Family Health Programme in the Ministry of Health Malaysia is carried out mostly for high-risk pregnancies, as well as for the provision of post-natal services. The major problem highlighted by respondents was the lack of manpower to cope with the existing workload, and it was felt that some aspects of home visiting could be carried out by others, like members of non-governmental organisations.

## **8. CONCLUSIONS**

After reviewing all articles, it was found that home visiting has positive effects in many aspects of health care. While some studies were inconclusive or did not support positive effects, there were no negative effects of home visiting reported.

### **8.1. Antenatal and Postnatal Periods**

Home visiting is effective during both the antenatal and postnatal periods including the use of pregnancy related services. However, while there were positive effects of home visiting on the health behaviour of mothers, the evidence in relation to deliveries and medical and social outcomes were inconclusive.

### **8.2. Child Health Care**

There was evidence to show that home visiting was beneficial in various aspects of child health care. The positive effects included reduced rate of child injury, reduced recurrence of child maltreatment, improved growth among children with failure to thrive, reduced developmental delay, improved motor and cognitive development and behaviour with fewer behavioural problems and reduced acute care visits. Also found was reduction in hospitalisation and re-hospitalisation, fewer acute care and emergency hospital visits, missed well baby clinic visits and missed postpartum appointments. It too, was effective in delivering preventive services, reducing the prevalence of infant health problems, increased immunisation coverage and supporting early hospital discharge.

Home visiting was cost effective in comparison to hospitalisation, in well-child screening. However, in comparison to other strategies, telephones were found to be more cost-effective.

### **8.3. Nutrition**

With respect to breast feeding the evidence on effect of home visiting on compliance to breast-feeding was inconclusive. There was inadequate evidence on beneficial nutritional effects with home visiting.

### **8.4. Elderly Care**

There was evidence to show that home visiting helped in the detection of unrecognisable treatable problems in the elderly. Evidence on the beneficial effects on specific groups of elderly people was limited. There was inconclusive evidence on benefits of home visiting in prevention, while there was inadequate evidence of improvement in immunisation acceptance among the elderly.

### **8.5. Mental Health**

There was inadequate evidence on the effectiveness of home visiting for mental health.

### **8.6. Cost Effectiveness**

Different aspects of cost effectiveness have been highlighted in the studies. There is evidence of lower cost of home visits compared to hospitalisation. Other evidence showed cost savings to hospitals. However, in well-child screening, when compared with other outreach programs, home visiting does not appear to be the most cost-effective strategy. Indirect cost savings such as reduction in acute care visits and re-hospitalisation have also been implied in a few studies.

## **9. RECOMMENDATIONS**

There is sufficient evidence of the effectiveness, efficiency and cost-effectiveness of home visiting, especially in relation to antenatal and post-natal services, child health services and in the care of the elderly. Thus, this service should be continued as part of the continuum of health care service. However, the focus should be on families or persons at high risk and the cases to be visited need to be specifically selected and prioritised.

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**EVIDENCE TABLE  
NUTRITION**

No.	Title, Author, Journal, Year	Type of Study, Sample Size, Follow up	Characteristic and Outcome	Comments Grade of Evidence
<b><i>Breast Feeding Compliance</i></b>				
1.	Chen CH Effect of home visits and telephone contacts on breast feeding compliance in Taiwan  Maternal Child Nurs Journal 1993 July-Sept; 21(3):82-90	Quasi-experimental study (Clinical trial) 180 mothers assigned to 3 groups: - Home visit - Telephone contact - Control	No significant difference found between groups Multi para showed a significant longer duration of breast-feeding and a more positive experience of breast-feeding than primipara breast-feeds.	Fair
2.	Quinn AO; Koepsell D; Haller S Breastfeeding incidence after early discharge and factors influencing breastfeeding cessation  J Obstet Gynecol Neonatal Nurs, 1997 May-Jun; 26(3): 289-94	Non-randomised controlled prospective trial  101 breast feeding mothers	No difference was found in the incidence of breast feeding at 6 to 8 weeks postpartum for mothers who had a 48- hour length of stay versus mothers who had a 24-hour length of stay with a home visit.	Fair
<b><i>Exclusive Breast Feeding</i></b>				
1.	Haider R; Islam A; Hamadani J; Amin NJ; Kabir I; Malek MA; Mahalanabis D; Habte D Breast-feeding counseling in a diarrhoea disease hospital  Bull World Health Organ, 1996; 74(2): 173-9	Randomised controlled trial  250 Infants up to 12 weeks of age. - Mothers in the intervention group were individually advised by the counselors and were follow up at home - Mothers in the control group received only routine group health education and no follow up counseled at home	60% of mothers in the intervention group were breast-feeding exclusively at discharge compared with 6% in control group. After 2 weeks, breastfeeding rates rose to 75% and 8% in the intervention and control groups, respectively. However, 49% of mothers in the control group reverted to bottle-feeding compared with 12% in the intervention group. Individual counseling had a positive impact on mother to start exclusive breast-feeding during	Good



No.	Title, Author, Journal, Year	Type of Study, Sample Size, Follow up	Characteristic and Outcome	Comments Grade of Evidence
			hospitalization and to continue the practice at home.	

No.	Title, Author, Year	Type of Study, Sample Size, Follow up	Characteristic and Outcome	Comments Grade of Evidence
<b><i>Breast Feeding Problems</i></b>				
1.	Ransj o –Arvidson AB; Chintu K; Ng'andu N; Eriksson B; Susu B; Christensson K; Diwan VK Maternal and infant health problems after normal childbirth: a randomised controlled study in Zambia  J Epidemiol Community Health, 52(6): 385-91 1998 Jun	Randomised controlled trial  408 mothers - Group A consisted of 208 mother/infant who were visited by midwife in their homes at days 3,7, 28 and 42 after delivery. - Group B consisted of 200 mother/infants who were only visited at day 42.	At days 42, the prevalence of infant health problems in Group B was significant higher. There were more mothers in Group B perceiving insufficient milk production and giving supplementary feeding.	Good
<b><i>Child Health and Mothers Behaviour</i></b>				
1.	Tellier V; Luboya N; De Graeve G; Beghin I; Sante Ambulatory management of moderately and severely malnourished children in the rural health district of Kapolowe in Shaba (Zaire)  1996	Cohort study	Anthropometrical results are less important than the global and subjective improvement in the child's general health status observed at the end of the contract. None of the children reached the target weight after 13 weeks but important changes were observed in their behavior, in the resistance to infection and in the attitude of their parents.	Fair
2.	Ransj o –Arvidson AB; Chintu K; Ng'andu N; Eriksson B; Susu B; Christensson K; Diwan VK	Randomised controlled trial 408 mothers	At days 42, the prevalence of infant health problems in Group B was significant higher. Mothers in Group A took more actions than	Good

No.	Title, Author, Year	Type of Study, Sample Size, Follow up	Characteristic and Outcome	Comments Grade of Evidence
	Maternal and infant health problems after normal childbirth: a randomised controlled study in Zambia  J Epidemiol Community Health 1998 Jun, 52(6): 385-91		mothers in group B to solve infant health problems The study shows that a midwife home visit and individual health education to mothers, reduce the prevalence of infant health problems, and enables the mother to more often take action when an infant health problem is identified.	

No.	Title, Author, Year	Type of Study, Sample Size, Follow up	Characteristic and outcome	Comments Grade of Evidence
<b><i>Growth and Development for Malnourished Children</i></b>				
1.	Grantham-McGregor S; Powell C; Walker S; Chang S; Fletcher P The long-term follow-up of severely malnourished children who participated in an intervention program.  Child Dev 1994	14 years Follow –up study 35 severely malnourished children	At 14 - year follow-up, the IM group's scores were significantly higher than of the NIM group in WISC verbal and performance scale, and the difference approached significance in the Wide Range Achievement Test. Psychosocial intervention should be an integral part of treatment for severely malnourished children.	Fair

## ***MENTAL HEALTH***

No.	Title, Author, Year	Type of Study, Sample Size, Follow up	Characteristic and outcome	Comments Grade of Evidence
<b><i>Effectiveness and Cost Effectiveness</i></b>				
1.	<p>Alberto B et al A pilot study of assertive community treatment for patients with chronic psychotic disorders</p> <p>Am J Psychiatry 1993</p>	<p>Cross sectional study</p> <p>51 pts with chronic psychosis</p>	<p>Time hospitalized was reduced by 94%. 82% of the patients previously living in hospitals or group homes attained independent living status. Findings suggest that this form of clinical management may reduce institutional care and cost to mental health care system.</p>	Fair
2.	<p>Paykel Es et al <i>Community Psychiatric Nursing For Neurotic Patients: A Controlled Trial</i> British .J. Psychiat 1982 Jun 140:573-81</p>	<p>Randomised Controlled Trial</p> <p>71 Neurotic Patients.</p>	<p>No difference found on symptoms, social adjustment, or family burden. Patients seeing community psychiatric nurses, reported greater satisfaction with treatment. Community psychiatric nursing resulted in marked reduction in outpatient contact with psychiatrists and other staff, small increases in GP contact for prescribing. Community psychiatric nursing a valuable mode of deployment within the psychiatric team.</p>	Good
3.	<p>Buls P The effects of home visit on anxiety levels of clients with coronary artery bypass and of the family.</p> <p>Home Health Nurse 1995 Jan-Feb; 13(1): 22-9</p>	<p>Controlled clinical trial</p> <p>60 clients</p>	<p>Clients and families who received home visits had significantly lower anxiety levels. Home visits to the clients with coronary artery bypass graft as a method of decreasing anxiety and prevent costly re-hospitalization.</p>	Fair

No.	Title, Author, Year	Type of Study, Sample Size, Follow up	Characteristic and outcome	Comments Grade of Evidence
<b><i>Factors Influencing Quality of Home Visiting</i></b>				
1.	<p>Kuroda-M et al An evaluation of the attitude and productivity of public health nurses in mental health service programs for the elderly.</p> <p>Nippon-Koshu-Eisei-Zasshi.1991</p>	<p>Survey of PHNs at 31 health centers, reviewing services provided to 382 clients with dementia who were visited during a one-year period.</p>	<p>Clients who had been visited by PHNs accompanying a psychiatrist or a social worker were significantly higher at 13 HC where PHN attach importance to counseling programs for the elderly. Also higher at 8 HC which provide group work and the 13 HC which hold case conferences more than 6 times a year then other HC. At HC where PHN actively participated on mental health program PHNs' attitude towards mental health care were more enthusiastic. Results indicate that increased productivity of PHN employed in mental health programs and promotion of multidisciplinary approach in client services are correlated with other, and that both factors contribute to improving the quality of home visit by PHN.</p>	Poor
<b><i>Other Benefits to Mental Health</i></b>				
1.	<p>Mani Kayama Nursing functions among home visits for patients with schizophrenia</p> <p>Japan Academy of Nursing Science 1998</p>	<p>Qualitative, Grounded Theory Approach</p> <p>Subjects: 18 RN 12 PHN</p>	<p>RNs carry out compensatory care for patients' permanent ability deficit. PHNs provide support and assistance to patients to create new relationship with others. PHNs use protective techniques enhancing empowerment of patients.</p>	Poor

***LOCAL STUDY***

No.	Title, Author, Year	Type of study, Sample size, Follow Up	Characteristics and Outcomes	Comments, Grade of Evidence
1.	<p>Survey on attitude and practice among nursing staff on practice of home visiting and home nursing.</p> <p>Family Health Div. Mins of Health, Malaysia 1998</p>	<p>Cross Sectional Survey</p> <p>Subjects: Health Care Providers 218</p> <ul style="list-style-type: none"> <li>-Health Inspectors</li> <li>-Public Health Nurses(PHN)</li> <li>-Staff Nurse(SN)</li> <li>-Public Health Assistant</li> <li>-Assistant Nurse</li> <li>-Comm. Nurse (CN)/Midwives</li> <li>-Medical Assistant</li> </ul>	<p>PHNs in rural and urban areas mostly visit mothers with high-risk pregnancy, followed by postnatal mothers.</p> <p>SNs in rural areas visit mostly mothers with high pregnancy followed by normal pregnancy compared with urban SNs who visit more postnatal mothers followed by high-risk pregnancy.</p> <p>Assist Nurses in urban area mainly do defaulter tracing followed by children &lt; 5 years but A/N in rural areas visit more postnatal mothers.</p> <p>CN mainly visit maternal cases whereas CN in rural areas cover a broader scope that include children &lt; 5 years.</p> <ul style="list-style-type: none"> <li>- H/V not only to be done by nurses.</li> <li>- MA can assist in HV of some cases.</li> <li>- TBAs can visit pregnant and postnatal mothers.</li> <li>- NGOs to play a role in helping children with special needs.</li> </ul> <p>Home visiting should be continued but prioritizing needed.</p>	<p>Poor</p>

### CHILD HEALTH CARE – INFANT HEALTH

No	Title, Author, Year	Type of study, Sample size, Follow up	Characteristics and outcomes	Comments Grade of evidence
1.	<p>Fugimoto G <i>Visiting new moms: Home visiting promotes babies health development by supporting their mothers</i></p> <p>Children's Advocate 1997, July-Aug</p>	Expert Committee	Home visiting brings benefit to children and mothers: pregnancy spacing, establishment of therapeutic relationship with mothers, less hospital visits for injuries and accidents for children, positively effects children's school achievement	Poor
2.	<p>Edwards JR Single Parents need home visiting by health visitors</p> <p>BMJ 1998; 317: 1390. 14 Nov</p>	Survey of baby clinics run by Health visitors	Children of single parents less likely to attend clinics than other parents. Maintenance of home visits is essential, particularly to reach the vulnerable group of single parents and their children.	Poor
3.	<p>Univ of Colorado Health Sciences Center Home visits during pregnancy and infancy outcomes have enduring effects.</p> <p>Aug 26 1997 Http:// www. Uchsc/edu/ News/homevisits.html</p>	Expert Committee	<p>Enduring Effects of home visiting-</p> <ul style="list-style-type: none"> <li>-Use of welfare, fewer childhood injuries, fewer instances of child abuse and neglect.</li> <li>-Pregnancy spacing</li> <li>- Nurses work with mothers on nutrition, health, smoking, drug abuse, parenting, life planning skills, child development etc.</li> </ul>	Poor

## ELDERLY CARE

No.	Title, Author, Year	Type of Study, Sample Size, Follow up	Characteristic and outcome	Comments Grade of Evidence
<b><i>Detection of Unrecognisable Treatable Problems / Elderly Abuse</i></b>				
1.	Fabacher-D et al An in home presentation assessment program for independent older adult – a randomised controlled trial  J-Am- Geriatr-Soc.1994	Randomised controlled trial with 1-yr follow up  154 community living veterans 70 yrs and older. (131 interv; 123 controls)	Geriatric screening (In home) assessment can detect unrecognizable treatable problems. (Result supports the concept that preventive gerontological approaches can help maintain important aspect of health and function.)	Good
2.	Jogerst GJ; Ely JW <i>Home visiting program for teaching elderly abuse.</i>  Family Med, 1997 Oct 29(9): 634-9	Surveys  Subjects: 201 patients	Ability to diagnose elderly abuse significantly higher. Ability to assess the patients home environment. Home visiting program gave residents exposure to a population of elderly who were abused, demented and living at home. The program provided clinical substance to build on effective teaching experience and furnish the authorities with information.	Poor
3.	Nikolaus T et al <i>Diagnostic house call within the scope of inpatient geriatric assessment</i>  Z Gerontol Geriatr, 28 (1): 14-8 1995 Jan-Feb	Prospective Study  141 Subjects, admitted from home to geriatric hospital.  Interv: Comprehensive geriatric assessment and a diagnostic home visit.	In 19.1% patients, the diagnostic visits resulted in change of time of discharge. 14.9% patients in the change of location of discharge. Up to seven new problems were discovered. Up to six technical aids were prescribed, most common recommendations were related to safety. In 89.3%, the diagnostic home visit was judged necessary by the home intervention team. A follow-up visit after 3 months revealed that about 80% of all recommendations were implemented and	Fair

No.	Title, Author, Year	Type of Study, Sample Size, Follow up	Characteristic and outcome	Comments Grade of Evidence
			approximately at the same amount of technical aids were still in used.	
4.	<p>Stalenhoef PA et al Home visits by community health nurses can contribute to the family practitioner's knowledge of elderly patients.</p> <p>Ned Tijdschr Geneesk, 1996 Dec 7; 140(49): 2464-7</p>	<p>Cross-sectional, descriptive.</p> <p>59 patients aged 79 yrs and over.</p>	<p>Of the complaints recorded by the community nurses - 34% were not known to the general practitioners – symptoms of depression, urinary incontinence, disability, and handicaps of the musculoskeletal system, sleep disturbances, daily functioning and ability to cope. (A structured interview of elderly patients by a community nurse yields substantial information about health problems.</p>	Poor
<b><i>Effectiveness for Specific Conditions</i></b>				
1.	<p>Kerkstra-A; Vorst-Thijssen-T Factors related to the use of community nursing services in the Netherlands.</p> <p>J Advance Nursing 2402 1991</p>	<p>Cross sectional study</p> <p>137 community nurses 49 community nurses auxiliaries.</p> <p>12,847 home visits 3,315 patients</p>	<p>3 groups of patients were identified in terms of the nature of nursing care they received at home: -</p> <ul style="list-style-type: none"> <li>- Older patients, who were also receiving informal care and did not suffer from psychosocial problems, were most likely to receive assistance in their activities of daily living.</li> <li>- Patients suffering from multiple disorders, assessed as unstable, and did not suffer from psychological problems were likely to receive technical nursing care. They were visited most.</li> <li>- Male patients suffering from multiple disorders, whose situation was assessed as unstable, were most likely to receive psychosocial support and education from the community nurse. These visits appeared to be most time consuming.</li> </ul>	Fair



No.	Title, Author, Year	Type of Study, Sample Size, Follow up	Characteristic and outcome	Comments, Grade of Evidence
2.	<p>Van Rossum E et al <i>Effect of preventive home visits to the elderly.</i> BMJ 1993</p>	<p>Randomised controlled trial  580 subjects aged between 75 and 84 yrs.</p>	<p>Visits no effects on health of subjects. In visited group no higher scores seen on health related measures, fewer deaths, community care increased slightly. In control group, more were referred to outpatient clinics, increased rate in admission. No difference found in long term institutional care, and overall expenditure per person in the intervention group exceeded the control group by 4%. Additional analyses found that visits were effective for subjects who initially rated their health as poor. Preventive home visits not beneficial for the general population of elderly people living at home but might be effective when restricted to subjects with poor health.</p>	<p>Good</p>
3.	<p>Al Shammari SA <i>Home visits to elderly patients in Saudi Arabia.</i> J Soc Health, 1997</p>	<p>Prospective study  396 PHC doctors 238 Hospital doctors</p>	<p>Both PHC and hospital doctors gave priority to bed ridden patients and lowest priority to mobile chronically ill patients. PHC doctors more keen on home visits than hospital doctors. More PHC doctors than hospital doctors would like nurses and health visitors to be involved in nursing procedures performed at home except when it comes to notifying doctors about patients problem. In case of stroke more hospital doctors would like physiotherapist to be involved the PHC and vice versa in the case of osteoarthritis. Most PHC doctors preferred occupational therapists involvement in training patients and the modification of their environment to lead to independent lives. More hospital doctors than PHC doctors preferred afternoon session for home visiting.</p>	<p>Fair</p>

No.	Title, Author, Year	Type of Study, Sample Size, Follow up	Characteristic and outcome	Comments, Grade of Evidence
			Respondents' views in the study can be made use of in establishing a home visit programme to Saudi Elderly in need of such services.	
4.	<p>Runciman P, Colin P, Margaret N, Lora G, McKay V  Discharge of elderly patients from accident and emergency department: Evaluation of Health Visitor follow up</p> <p>Journal. of Advance. Nursing 1996 24, 711-718</p>	<p>RCT</p> <p>Elderly patients 75 yrs and above</p> <p>222 Intervention subjects</p> <p>192 Controls</p>	<p>Intervention patients received more services and were significantly more independent at 4 weeks.</p> <p>Prompt evaluation by a health visitor is both feasible and helpful in mobilizing services.</p> <p>Improved confidence and moral among patients.</p>	Good
5.	<p>Hansen FR; Poulsen H; Sorenson KH  A model of regular geriatrics follow-up by home visits to selected patients discharged from a geriatric ward: a randomised controlled trial.</p> <p>Aging (Milano), 1995 June</p>	Randomised controlled trial	<p>More patients were allocated to home help.</p> <p>Differences in mortality and nursing home placement not significant.</p> <p>Regular follow up home visits by a team after in-patient geriatric evaluation and management reduce risks of readmissions among highly selected frail geriatric patient.</p>	Good

No.	Title, Author, Year	Type of Study, Sample Size, Follow up	Characteristic and outcome	Comments, Grade of Evidence
6.	Rizzo Ja; Baker DI; Mc Avay G; Tinetti ME <i>The cost-effectiveness of a multifactor targeted prevention program for falls among community living elderly persons.</i>  Med Care, 1996	Randomised Controlled Trial  301 participants	More cost effective to incorporate multifactor fall-prevention program within the usual health care of community living elderly persons (particularly those at high risk for falling), compared to the usual care consisting of a series of home visits.	Good

No.	Title, Author, Year	Type of Study, Sample Size, Follow up	Characteristic and outcome	Comments, Grade of Evidence
<b><i>Preventive Visits and Cost-Effectiveness of Home Care</i></b>				
1.	Jensen GR Preventive home visits to the elderly. An evaluation of controlled intervention studies.  Ugesker Laeger 1997 Oct 20	A study of 12 randomised controlled trials	Preventive home visits have beneficial effect on elderly people. Hospital and nursing home admissions decrease. For preventive home visits to be beneficial, health care personnel have to undertake visits social and medical intervention necessary and visits to be made on an ongoing basis.	Good
2.	Moller G; Golder I ; John E Hospital care verses home care for rehabilitation after hip replacement.  Int-J- Tech-Assess Health Care 1992	Abstract	Feasible and less expensive to reduce substantially hospital stay by planned physical therapy in the patient's home.	-

No.	Title, Author, Year	Type of Study, Sample Size, Follow up	Characteristic and outcome	Comments, Grade of Evidence
3.	Langemo et. al Incidence and prediction of pressure ulcers in five patient care <i>Settings.</i> Decubitus. 1991 Aug.	Prospective Study  190 subjects in 5 settings	A total of 18 (9%) patients developed pressure ulcers post admission. No patients developed pressure ulcer in home care or hospice setting Incidence for acute care was 15% and 28% in skilled care.	Fair
<b><i>Acceptance of Vaccine (Influenza)</i></b>				
1.	Black-ME et al The impact of a public health nurse intervention on Influenza vaccine acceptance.  Am J- Public Health 1993	Prospective study	No statistically significant difference in influenza immunisation rates between intervention group and controlled group.	

#### CHILD HEALTH CARE

No.	Title, Author, Year	Type of Study, Sample Size, Follow up	Characteristic and outcome	Comments Grade of Evidence
<b><i>Child Abuse, Neglect and Injury</i></b>				
1.	Olds D; Henderson CR Jr.; Kitzman H; Cole R <i>Effects of prenatal infancy nurse home visitation on surveillance of child maltreatment</i>  Pediatrics, (3): 365 – 72 Mar 1995	Randomised Control Trials  400 primip registered before 30/52	Fewer observed safety hazards for children. Homes contained more intellectually stimulating toys, games and reading materials. Mothers less controlling Children who were maltreated and who were visited had less serious expression of care giving dysfunction	Good

No.	Title, Author, Year	Type of Study, Sample Size, Follow up	Characteristic and outcome	Comments Grade of Evidence
2.	Roberts I.; Kramer MS <i>Suissa home visiting programmes reduce childhood injury</i>  BMJ 1996	Meta Analysis of 33 trials	No conclusions can be made about the effects of home visiting programmes on rates of child abuse. Lower incidence of injury in the group that received home visits. Lower injury occurrence in the first year of life Home visiting programme reduce the rates of childhood injury.	Good
3.	Hodnett ED, Robert I Home-based social support for socially disadvantaged mothers  WHO Reproductive Health Library 6 Jan. 1997	Meta analysis -Cochrane library	Four out of 8 trials reported that frequency of abuse was lower in the visited group. Six out eight trials reported lower incidence of injury in the visited group.	Good
4.	MacMillan HL, Thomas BH <i>Public Health Nurse home visitation for the tertiary prevention of child maltreatment: result of a pilot study.</i>  Can J Psychiatry 1993 Aug; 38 (6): 436-42	Non- controlled clinical series  18 families	The intervention and assessment procedures are feasible and acceptable for preventing the recurrence of child maltreatment.	Poor
5.	Olds DL, Henderson CR Jr, Kitzzman H <i>Does Prenatal and Infancy Nurse Home Visitation have Enduring Effect on</i>	Randomised Controlled Trial  400 women	The programme does have enduring effects on certain aspects of parental. There was no treatment different in the rates of child abuse and neglect. Children with nurse-visited, 40% fewer injuries and	Good

No.	Title, Author, Year	Type of Study, Sample Size, Follow up	Characteristic and outcome	Comments Grade of Evidence
	<i>Qualities of Parental Care giving and Child Health at 25 to 50 Months of Life?</i>  Pediatrics 1994 Jan; 93(1): 89-98		ingestions.	
<b><i>Growth and Development</i></b>				
1.	Black MM; Dubowitz; Hutheson J; Beren <i>A Randomised Clinical Trials of Home Intervention For Children With Failure to Thrive.</i>  Pediatrics, 1995 Jun; (6): 807-14	Randomised Clinical Trials  130 Children	Children's weight for age, weight for height and height for age improved significantly during the 12 month study period, regardless of intervention status. Children in Home Intervention status (HI) group had better receptive language over time and more children oriented home environment. Younger children showed better beneficial effects of HI. Early home interventions can promote nutrient home environment effectively and reduce developmental delays often experienced by low income urban infants with NOFTT (Non Organic Failure To Thrive)	Good

No.	Title, Author, Year	Type of Study, Sample Size, Follow up	Characteristic and outcome	Comments, Grade of Evidence
2.	Larsson JO; Aurelius G; Nordberg L; Rydelius PA; Zetterstrom R  <i>Home visiting the newborns baby as a basis for developmental surveillance at child welfare centres</i>  Acta Paediatr, 1996 Dec	Non –randomised controlled prospective trial  338 newborn babies.	The results underline the importance of an early home visit as a base for the developmental surveillance at Child Welfare Centres	<b>Fair</b>

No.	Title, Author, Year	Type of Study, Sample Size, Follow up	Characteristic and outcome	Comments, Grade of Evidence
	85(12): 1450-			
3.	<p>Airelus G; Nordberg L</p> <p><i>Home Visiting To Families With Newborn</i></p> <p>Scand-J-Prim-Health-Care 1994 Jun; 12(2): 106-13</p>	<p>Nurses observations during home visits compared with: -</p> <p>i) Results from a prenatal assessment of home conditions.</p> <p>ii) Observations made by psychologists at a home visit a year later</p> <p>Participants: 373 families with newborn</p>	Home visiting are useful in selecting children at risk of subsequent developmental problems	Fair
4.	<p>Mc Cormick; Mc Carton, C; Tonascia J; Brooks – Gunn J</p> <p>Early educational intervention for Very low birth Weight Infants: result from the Infant Health and Development Programme.</p> <p>J. Paed. 1993</p>	<p>Randomised Controlled Trial</p> <p>Participants: 280 infants</p> <p>Intervention: Int. group received Home visits &amp; center-based educational interventions until 36 months.</p>	Cognitive development scores were 7.2 points. Higher in the intervention group.	Good
5.	<p>Black MM; Nair P; Kight C; Wachtel R; Roby P; Schuler M</p> <p>Parenting and early development among children of drug-abusing women: effects of home intervention</p>	<p>Randomised Controlled Trial.</p> <p>60 drug-abusing women recruited prenatally and randomised into intervention (n=31),</p>	At 6 months, infants obtained marginally higher cognitive scores.	Good

No.	Title, Author, Year	Type of Study, Sample Size, Follow up	Characteristic and outcome	Comments, Grade of Evidence
	Paediatrics, 1994; 94 (4 Pt. 1): 440-8	comparison (n=29)		
6.	Wright CM, Callum J, Birks E, Jarvis S <i>Effect of Community Based Management In Failure To Thrive: Randomised Control</i>  <b>Trial</b> BMJ 1998 Aug 29; 317 (7158): 571-4	Randomised Control Trial  229 Children (120 in intervention practices and 109 in control practices)	Children in the intervention group were significant heavier and taller and reported to have better appetites. Children in the intervention group had recovered from their failure to thrive. In failure to thrive, health visitor intervention, with limited specialist support, can significantly improve growth compared with conventional management.	Good
7.	Hutcheson JJ, Black MM, Talley M, Dubowitz H, Howard JB, Starr RH Jr, Thompson BS  <i>Risk Status and Home Intervention Among Children with Failure to Thrive: Follow-up at Age 4.</i>  J Pediatr Psychol 1997 Oct; 22(5): 651-68	Randomised controlled trial  Sample size was not mentioned	At age 4, more than 1 year after the home intervention ended, there were effects of the home intervention on motor development among children and on cognitive development and behavior during play among children of mothers who reported low levels of negative affectivity. Home intervention may be most useful among mothers with low negative affectivity	Fair



No.	Title, Author, Year	Type of Study, Sample Size, Follow up	Characteristic and outcome	Comments, Grade of Evidence
8.	<p>Brooks – Gunn J; Mc Corton CM; Casey PH; Mc Cormick Mc; Baner CR; Bernbaun JC; Tyson J</p> <p><i>Early Intervention in Low Birth Weight Premature Infants. Results through age 5 years from the Infants Health and Developments Program.</i></p> <p>JAMA, 1994 Oct. 272(16): 1257; 62 96</p>	<p>Randomised Controlled Multicenter Trial</p> <p>Intervention: Home visits (neonatal to 3 yrs.), Center-based (1 to 3 yrs. Of age).</p> <p>Sample Size: 985 infants weighing 2500 g or less at 37 weeks or less gestation age.</p>	<p>The early childhood intervention provided in the first 3 years of life had effects on heavier LBW premature infants' IQ and verbal performance at the age of 5 years that are not observed for lighter LBW premature infants.</p>	Good
9.	<p>Olds DL; Henderson CR Jr; Tatelbaun R</p> <p>Prevention of intellectual impairment in children of women who smoke cigarettes during pregnancy.</p> <p>Paediatrics, 1994; 93(2): 228 – 33</p>	<p>Randomised Controlled Trial</p> <p>400 families- mothers registered before 30<sup>th</sup> week of pregnancy and No previous birth.</p> <p>Intervention: Nurse home visitation during pregnancy (Rx 3 and 4), or during pregnancy and first 2 years of child's life (Rx 4).</p>	<p>Children born to women who smoked 10+ cigarettes per day at registration during pregnancy who were assigned treatment 3 and 4 had IQ 4.8 points higher than with treatment 1 and 2 (day screening, plus transportation for prenatal and well-child without home visiting).</p> <p>The positive influence of H/V programme on reducing the harmful effect of smoking appears to be due to prenatal visitation.</p> <p>Comprehensive prenatal H/V services can offset impairment in intellectual functioning associated with substantial maternal smoking during pregnancy.</p>	Good

No.	Title, Author, Year	Type of Study, Sample Size, Follow up	Characteristic and outcome	Comments, Grade of Evidence
<b><i>Clinic Attendance</i></b>				
1.	Ghilarducci E; Mc Cool W <i>The Influence of Postpartum Home Visits On Clinic Attendance</i> J of Nurse Midwifery, 1993. May-Jun; 38(3): 152-8	Quasi Experimental  82 Subjects consisting of 2 groups from Nurse-midwifery service	Home visitations enhance clients' connectedness with the health care system and thus lessen the number of missed appointments for six weeks postpartum examination.	Fair
2.	Braveman P; Miller C; Egerter S; Bennett T; English P; Katz P; Showstack J  <i>Health service use among low-risk newborns after early discharge with and without nurse home visiting</i> J Am Board Fam Pract, 9(4): 254-60 1996 Jul-Aug	Retrospective studies  174 newborn	Acute care visits, rehospitalizations, and missed well-baby visits consistently appeared less likely among newborns receiving home visiting service.	Fair
3.	Mark A et al. Utilization of Well-child Care Services for African-American Infants in a Low Income Community: Result of a Randomised, Controlled Case Management/Home Visitation Intervention  Pediatrics 1998 June 101(6); 999-1005	Randomised Controlled Trial  365 mothers (185 mothers in intervention group and 180 mothers in the control group)	Moderate-intensity case management and home visitation programme is not an effective way to increase the number of well-child care visit	Good

No.	Title, Author, Year	Type of Study, Sample Size, Follow up	Characteristic and outcome	Comments, Grade of Evidence
<b><i>Infant Health</i></b>				
1.	<p>Barnes – Boyd C; Norr KF; Nacion KW</p> <p><i>Evaluation of an Interagency Home Visiting Program to Reduce Post neonatal mortality in disadvantaged Communities.</i></p> <p>Public Health Nurs, 1996 Jun; 13(3): 201-8</p>	<p>Longitudinal Prospective Study</p> <p>N=: 1269 infants in predominantly Africa American families.</p>	<p>Repeated home visiting with on going infant health monitoring and the activities carried out helped mothers maintain good health practices and identify illness early.</p> <p>Consistent positive effects on physical health of neonates.</p> <p>Significant reduction in mortality rate i.e. 4.7 per1000 compared with non-participants from the same community, which were 10.9 per 1000.</p>	Fair
2.	<p>Brooks – Gunn J; Mc Corton CM; Casey PH; Mc Cormick M; Baner CR; Bernbaun JC; Tyson J;</p> <p><i>Early Intervention in Low Birth Weight Premature Infants. Results from the Infants Health and Development Program.</i></p> <p>JAMA, 1994 Oct; 272 (16): 1257; 62- 96</p>	<p>Randomised Controlled Multicenter Trial</p> <p>Sample Size: 985 infants weighing 2500 g or less at 37 weeks or less gestation. Age.</p>	<p>The intervention did not affect health or behavior at age 1 year in either LBW stratum.</p> <p>The early childhood intervention provided in the first 3 years of life had effects on heavier LBW premature infants' IQ and verbal performance at age of 5yrs that are not observed for lighter LBW.</p>	Good

No.	Title, Author, Year	Type of Study, Sample Size, Follow up	Characteristic and outcome	Comments, Grade of Evidence
3.	<p>Mc Cormick, Mc Carton, C Tonascia J Brooks – Gunn J</p> <p>Early educational intervention for very low birth weight infants: result from the Infant Health and Development Programme.</p> <p>J. Paed. 1993</p>	<p>Randomised Controlled Trial</p>	<p>All children in the intervention group had slightly higher rates of less serious morbidity.</p> <p>Use of early intervention for very Low Birth Weight supported</p>	<p>Good</p>
4.	<p>Barkauskas VH</p> <p><i>Effectiveness of Public Health Nurse Home Visits to Primip Mothers and Their Infants</i></p> <p>Am J Public Health 1983 May; 73(5): 573-80</p>	<p>Randomised controlled trial</p> <p>110 mothers (67 mothers-infant pairs received home visit and 43 mothers who had not received)</p>	<p>No significant different between home-visited and not-home-visited mother-infant pairs for the majority of health outcome variables.</p>	<p>Good</p>
5.	<p>Ciliska D</p> <p><i>Effectiveness of Home Visiting as a Delivery Strategy for Public Health Nursing Interventions</i></p> <p>Ontario H.C. Evaluation Network 1998</p>	<p>Systematic Review</p> <p>77 Articles</p>	<p>Home visiting is a successful strategy for delivering preventive services to families with young children.</p> <p>Effects include positive outcomes across all domains and determinants of health.</p>	<p>Good</p>

No.	Title, Author, Year	Type of Study, Sample Size, Follow up	Characteristic and outcome	Comments, Grade of Evidence
6.	<p>Ransjo-Arvidson et al.</p> <p><i>Maternal and infant health problems after normal childbirth: a randomised controlled study in Zambia</i></p> <p>Journal of Epid. &amp; Community Health, 1998 Jun ; 52 (6): 385-91,</p>	<p>Randomised controlled trial.</p> <p>408 mothers who had normal delivery, full term infant.</p>	<p>There was a significant difference between the mothers' reported health problems and the health problems identified by the midwife and the doctors.</p> <p>The study shows that a midwife home visit and individual health education to mothers, reduce the prevalence of infant health problems, and enables the mother to more often take action when infant health problem is identified.</p> <p>Need to re evaluate the midwifery training curriculums with the intention to include more infant management care.</p>	Good
7.	<p>American Academy of Paediatrics</p> <p><i>The role of home-visitation programmes in improving health outcomes for children and families.</i></p> <p>Paediatrics 1998 March; 101(3): 486-489.</p>	Policy Statement	Home visitation programmes can be an effective early intervention strategy to improve the health and wellbeing of children, particularly if they are embedded in comprehensive community services to families at risk.	Poor
8.	<p>Fugimoto G</p> <p>Visiting new moms: Home visiting promotes babies health development by supporting their mothers</p> <p>Children's Advocate 1997, July-Aug</p>	Expert Committee	Home visiting brings benefit to children and mothers: pregnancy spacing, establishment of therapeutic relationship with mothers, less hospital visits for injuries and accidents for children, positively effects children's school achievement	Poor

No.	Title, Author, Year	Type of Study, Sample Size, Follow up	Characteristic and outcome	Comments, Grade of Evidence
9.	Edwards JR  Single Parents need home visiting by health visitors  BMJ 1998 Nov; 317: 1390 14	Survey of baby clinics run by Health visitors	Children of single parents less likely to attend clinics than other parents. Maintenance of home visits is essential, particularly to reach the vulnerable group of single parents and their children.	Poor
10.	University of Colorado Health Sciences Center  Home visits during pregnancy and infancy outcomes have enduring effects.  Aug 26 1997 Http:// www. Uchsc/edu/ News/homevisits.html	Expert Committee	Enduring Effects of home visiting- -Use of welfare, fewer childhood injuries, fewer instances of child abuse and neglect. -Pregnancy spacing - Nurses work with mothers on nutrition, health, smoking, drug abuse, parenting, life planning skills, child development etc.	Poor
<b><i>Child Immunization</i></b>				
1.	Wood D; Halfon N; Donald-I RM; Shuster M; Hamlin JS; Pereyra M; Camp P; Gradbowsky M; Duan N  Increasing immunisation rates among inner city, African American children. A randomised trial of case management.  JAMA 1998; 279 (1) 29-34	A randomised controlled trial of case management with follow-up through 1 year of life.  Sample of 419 African American infants and their families.	Case management intervention effective in first year of life. The immunization completion for the management group was 13.2-percentage point higher than the control group.	Good

No.	Title, Author, Year	Type of Study, Sample Size, Follow up	Characteristic and Outcome	Comments, Grade of Evidence
2.	Brugha RF, Kevany JP  Maximizing Immunization Coverage Through Home Visits: A Controlled Trial in an Urban Area of Ghana  Bulletin of the WHO 1996; 74(5): 517-4,	Non-Randomised Controlled Trial  200 mothers.	After 6 months, coverage had risen from 60% to 85% in the town 1 and in a neighbouring town, resulted in a rise in coverage from 38% to 91%, mainly through home immunizations. Home visiting can be used as a strategy to supplement and strengthen routine immunization programme	Fair
3.	Hodnett ED, Robert I  Home-based Social Support for Socially Disadvantaged Mothers  WHO Reproductive Health Library 1997 Jan. 06	Meta analysis Cochrane library	4 out of 5 trials reported that infants of visited mothers were likely to have incomplete well-child immunization	Good
<b><i>Support for Early Discharge</i></b>				
1.	Brumfield CG et. Al  24-hour Mother-Infant Discharge With a Follow-Up Home Health Visit: results in a Selected Medicaid Population  Obstet Gynecol 1996	Prospective Study  5621 deliveries	In a selected, low risk, low-income population, and mother-infant discharge 24 hours after delivery with home follow-up visit is safe.	Fair

No.	Title, Author, Year	Type of Study, Sample Size, Follow up	Characteristic and outcome	Comments, Grade of Evidence
2.	<p>Brooten S; Kumar S; Brown LP; Butts P; Finker SA; Bakewell-Sach; Gibbons A; Delivoria-Padadopoulos M</p> <p><i>A randomised clinical trial of early hospital discharged and home follow-up of very low-birth-weight-infants.</i></p> <p>N Engl Med, 1986; 315 (15): 634-9</p>	<p>Randomised Controlled Trial</p> <p>Samples: 79 infants (Intervention group: n=39, Controlled group. n= 40)</p>	<p>Early discharge of very low-birth-weight infants, with follow up care in the home is safe.</p>	<p>Good</p>
<b><i>Cost Effective</i></b>				
1.	<p>Wood D; Halfon N; Donald-Sherbourne C; Mazel RM; Shuster M; Hamlin JS; Pereyra M; Camp P; Gradbowsky M; Duan N</p> <p><i>Increasing immunisation rates among inner-city, African American children. A randomised trial of case management.</i></p> <p>JAMA 1998; 279 (1) 29-34</p>	<p>A randomised controlled trial of case management with follow-up through 1 year of life.</p> <p>Sample of 419 African American infants and their families.</p>	<p>Case management intervention in first year of life was not cost effective in raising immunization levels in inner-city infants.</p>	<p>Good</p>



No.	Title, Author, Year	Type of Study, Sample Size, Follow up	Characteristic and outcome	Comments, Grade of Evidence
2.	<p>Brooten S; Kumar S; Brown LP; Butts P; Finker SA; Bakewell-Sach; Gibbons A; Delivoria-Padadopoulos M</p> <p>A randomised clinical trial of early hospital discharged and home follow-up of very low-birth-weight infants.</p> <p>N Engl Med, 1986; 315 (15): 634-9</p>	<p>Randomised Controlled Trial</p> <p>Samples: 79 infants (Intervention group: n=39, controlled group. n= 40)</p>	<p>Mean hospital charge for early discharged group was 27 % less.</p> <p>Mean physician's charge was 22 % less.</p> <p>Mean cost of home follow up care was less than cost of hospitalisation</p>	Good
3.	<p>Selby-Harrington M, Sorenson JR, Quade D, Stearns SC, Tesh AS Donat PL.</p> <p>Increasing Medicaid Child Health Screening: The Effectiveness of Mailed Pamphlets, Phone Calls and Home Visits.</p> <p>Am J Public Health 1995 Oct; 85(10): 1412-7</p>	<p>Randomised Controlled Trial</p> <p>2053 families with children due or overdue for screening</p>	<p>All interventions produced more screening than control method, but increases were significant only for families with phones.</p> <p>Among families with phones, a home visit was the most effective intervention, but a phone call was the most cost – effective</p>	Good
4.	<p>Brumfield CG.</p> <p>24-hour Mother-Infant Discharge With a Follow-Up Home Health Visit:Results in a Selected Medicaid Population</p> <p>Obstet Gynecol 1996</p>	<p>Prospective Study</p> <p>5621 deliveries</p>	<p>Follow-up home visits safe and effective.</p> <p>Net cost saving to hospital.</p>	Fair

No.	Title, Author, Year	Type of Study, Sample Size, Follow up	Characteristic and outcome	Comments, Grade of Evidence
<b><i>Child Behaviour</i></b>				
1.	<p>Brooks – Gunn J; Mc Corton CM; Casey PH; Mc Cormick Mc; Baner CR; Bernbaun JC; Tyson J;</p> <p><i>Early Intervention in Low Birth Weight Premature Infants. Results through age 5 years from the Infants Health and Developments Program.</i></p> <p>JAMA, 1994 Oct; 272 (16): 1257; 62. 96</p>	<p>Randomised Controlled Multicenter Trial</p> <p>Sample Size: 985 infants weighing 2500 g or less at 37 weeks or less gestation. Age.</p>	<p>The early childhood intervention provided in the first 3 years of life did not affect health or behavior at age 5 year in either LBW stratum.</p>	Good
2.	<p>Mc Cormick, Mc Carton, C Tonascia J Brooks – Gunn J</p> <p><i>Early educational intervention for very low birth weight infants: result from the Infant Health and Development Programme.</i></p> <p>Journal. Paediatric. 1993</p>	<p>Randomised Controlled Trial</p> <p>Participants: 280 infants</p>	<p>No difference in behavior, serious morbidity, functional status or health rating found overall.</p> <p>Infants who weighed &lt; or = 1000 gm at birth had significantly lower behavior problem scores.</p>	Good

No.	Title, Author, Year	Type of Study, Sample Size, Follow up	Characteristic and outcome	Comments, Grade of Evidence
3.	Olds DL, Henderson CR Jr, Kitzman H  <i>Does Prenatal and Infancy Nurse Home Visiting have Enduring Effect on Qualities of Parental Care giving and Child Health at 25 to 50 Months of Life?</i>  Pediatrics 1994 Jan; 93(1): 89-98	Randomised Controlled Trial  400 women	Children with nurse-visited, 45% fewer behavioural and parental coping problems noted in the physician record	Good
<b><i>Hospital Admission and Emergency Department Visit</i></b>				
1.	Hodnett ED, Robert I  Home-based Social Support for Socially Disadvantaged Mothers  WHO Reproductive Health Library 06 Jan. 1997	Meta analysis Cochrane library	All the 4 trials reported that families who received additional support are less likely to have babies that require hospitalization  2 out of 5 trials reported that fewer emergency department visit were made by the intervention group	Good
2.	Olds DL, Henderson CR Jr, Kitzman H  <i>Does Prenatal and Infancy Nurse Home Visiting have Enduring Effect on Qualities of Parental Care giving and Child Health at 25 to 50 Months of Life?</i>	Randomised Controlled Trial  400 women	Children with nurse-visited, 35% fewer visits to the emergency department than did children in the comparison group.	Good

No.	Title, Author, Year	Type of Study, Sample Size, Follow up	Characteristic and outcome	Comments, Grade of Evidence
	Pediatrics 1994 Jan; 93 (1): 89-98			
3.	Braveman P; Miller C; Egerter S; Bennett T; English P; Katz P; Showstack J  <i>Health service use among low-risk newborns after early discharge with and without nurse home visiting</i>  J Am Board Fam Pract, 1996 Jul Aug; 9(4): 254-60	Retrospective studies  174 newborn	Acute care visits, re-hospitalizations, and missed well-baby visits consistently appeared less likely among newborns receiving home visiting service.  Finding suggests potentially important benefits of home visiting services after early discharge of low-risk newborn, with substantial implications for clinical and reimbursement policy	Fair

***Pregnancy And Postnatal – Enrolment in Pregnancy Related Services***

No.	Title, Author, Year,	Type of Study, Sample Size, Follow Up	Characteristics and Outcome	Comments, Grade of Evidence
1.	<p>Bradley PJ; Martin J</p> <p>The impact of home visits on enrollment patterns in pregnancy related services among low-income women.</p> <p>Public Health Nurs, 1994 Dec; 11 (6) 392-8</p>	<p>Retrospective descriptive study</p> <p>381 participants</p>	<p>Majority of participants enrolled in prenatal care and other related services, and did so within one month.</p> <p>Home visits effective in stimulating enrolment in pregnancy related services.</p>	<p>Fair, with some limitations.</p>
2.	<p>Ghilarducci E; McCool-W</p> <p>The influence of postpartum home visits on clinic attendance</p> <p>J-Nurse Midwifery, 1993 May-Jun; 38(3): 152-8</p>	<p>Quasi –experimental study</p> <p>82 subjects of 2 groups of nurse midwifery</p> <p>Service: 43 clients who gave birth in 1986 and did not receive home visits, 39 clients who gave birth in 1989 and received one visit.</p>	<p>58% (25) of the clients who did not receive home visits and 74% (29) of the home-visited clients kept their six- week appointment;</p> <p>Not significant.</p> <p>- Home visited clients missed and were rescheduled for fewer six-week appointments than clients who did not receive home visits.</p> <p>After controlling age and parity, this result remained significant.</p> <p>It is suggested that home visitations enhances a client’s “connectedness” with the health care system and thus less number of missed appointments for six-week postpartum appointments.</p>	<p>Fair</p>

*Antenatal and Postnatal*

No.	Author; Title, Year	Type of study, Sample size, Follow-up	Characteristics and Outcomes	Comments, Grade of evidence
<b><i>Medical and Psychological Outcomes</i></b>				
1.	<p>Hodnett ED</p> <p><i>Support from caregivers during at-risk pregnancy.</i></p> <p>WHO Reproductive Health Library. 1994</p>	Meta analysis of clinical trials.	<p>Social support interventions for at-risk pregnant women have not been associated with improvements in any medical outcomes for the index pregnancy.</p> <p>Only a few improvements in immediate psychosocial outcomes have been found in individual trials.</p> <p>Three trials indicate women who received social support are more likely to terminate their pregnancies.</p> <p>Pregnant women need and deserve to have the help and support of caring family members, friends, and health professionals. However, such support is unlikely to be powerful enough to overcome the effects of a lifetime poverty and disadvantage and thereby influence the remaining course of a pregnancy.</p>	<p style="text-align: center;">Good</p> <p>Evidence of social support not associated with in any medical outcomes for pregnancy and only few psychological outcomes.</p>

No.	Author; Title, Year	Type of study, Sample size, Follow-up	Characteristics and Outcomes	Comments, Grade of evidence
2.	<p>Blondel B, Br'aert G</p> <p>Home visits during pregnancy: consequences on pregnancy outcome use of health services and women situations.</p> <p>Sermin Perinatal 1995 Aug, 19(4): 263-71</p>	<p>Review of two different types of home visits through randomised controlled trials.</p> <p>Eight Trials</p>	<p>Pregnancy outcomes were not improved when women received home visits.</p> <p>Home visits did not decrease rate of hospital admissions for women with complications.</p> <p>Home visits had some positive effects on women's medical knowledge, support levels, health habits, and satisfaction.</p> <p>A need to define more precisely the content of H/v providing social support</p>	<p>Good</p>
3.	<p>Kitzman H et al</p> <p>Effects of prenatal and infancy home visitation by nurses on pregnancy outcomes, childhood injuries and repeated childbearing.</p> <p>JAMA 1997; 278(8) 644-52</p>	<p>Randomised controlled trial</p> <p>1139 Afro-American women less than 29 weeks gestation, no previous live birth and with at least 2 socio demographic risk characteristics.</p>	<p>Fewer women visited by nurses during pregnancy had pregnancy-induced hypertension. (13% vs. 20%; P=009).</p> <p>During the first two years after delivery, women visited by nurses during pregnancy and the first 2 years of the child's life: -</p> <ul style="list-style-type: none"> <li>• had fewer health encounters for children in which injuries or injections were detected (0.43 vs. 0.55; P=. 05).</li> <li>• Fewer days children were hospitalised with injuries or ingestions (0.3 vs. 0.16;P=001).</li> <li>• Lower rate of occurrence of second pregnancies (36% vs. 47%; P=006)</li> </ul> <p>No programme effects on preterm delivery or birth weight, children's immunisation rates, mental development or behavioral problems or mothers education or employment.</p> <p>This programme of home visitation by nurses can reduce pregnancy-induced hypertension, childhood injuries, and</p>	<p>Good</p>

No.	Author; Title, Year	Type of study, Sample size, Follow-up	Characteristics and Outcomes	Comments, Grade of evidence
			subsequent pregnancies among low-income women with no previous live births.	
<b><i>Preterm Deliveries, Low Birth Weight and Birth Intervals</i></b>				
1.	Blondel B; Mellier G  Home visits during pregnancy. Review of randomised studies and further questions.  J Gynecol Obstet Biol Reprod (Paris), 1996; 25(5): 515 – 22	Systematic Review of randomised controlled trials  Study of 7 trials from databases. 2 Categories: I) trials on social support ii) trials focusing on medical surveillance	Home visits focusing on social support led to a slight reduction nearly significant in preterm deliveries.  Home visits did not reduce the rate of preterm deliveries nor the number of hospitalisations in cases of complicated pregnancies.  Home visits in general, had positive effects on women in terms of social support, health behaviour and knowledge of medical problems.	Good  Fair evidence effectiveness of home visits focusing on social support.

No.	Title, Author, Year,	Type of Study, Sample Size, Follow Up	Characteristics and Outcome	Comments, Grade of Evidence
2.	Villar J, Farnot U, Barros F, Victoria C, Langer AA, Belizan JN  <i>A randomised trial of psychological support during high-risk pregnancies. The Latin American Network for Perinatal and Reproductive Research.</i>  N Engl J Med 1992 Oct	RCT  Subjects: 1115 intervention group. 1120 controls  Intervention: 4 to 6 HV by nurse or social worker in addition to routine prenatal care. Cont: Only routine prenatal care.	The risks of low birth weight, preterm delivery and inter uterine growth retardation were similar in both groups.  Interventions designed to provide psychological support and health education during high risk-pregnancies are unlikely to improve maternal health or to reduce the incidence of low birth weight among infants.	Good



No.	Title, Author, Year,	Type of Study, Sample Size, Follow Up	Characteristics and Outcome	Comments, Grade of Evidence
	29; 327 (18): 1266 – 71			
3.	<p>Kitzman H et al</p> <p>Effects of prenatal and infancy home visitation by nurses on pregnancy outcomes, childhood injuries and repeated childbearing.</p> <p>JAMA, 1997; 278(8) 644-52</p>	<p>Randomised controlled trial</p> <p>1139 Afro-American women less than 29 weeks gestation, no previous live birth and with at least 2 socio demographic risk characteristics.</p>	<p>Fewer women visited by nurses during pregnancy had pregnancy-induced hypertension. (13% vs. 20%; P=009). During the first two years after delivery, women visited by nurses during pregnancy and the first 2 years of the child's life:</p> <ul style="list-style-type: none"> <li>• have fewer health encounters for children in which injuries or infections were detected (0.43 vs. 0.55; P=. 05).</li> <li>• Fewer days t children were hospitalised with injuries or ingestions (0.3 vs. 0.16;P=001).</li> <li>• Lower rate of occurrence of second pregnancies (36% vs. 47%; P=006)</li> </ul> <p>No programme effects on preterm delivery or birth weight, children's immunisation rates, mental development or behavioral problems or mothers education or employment. This programme of home visitation by nurses can reduce pregnancy-induced hypertension, childhood injuries, and subsequent pregnancies among low-income women.</p>	Good
4.	<p>Olds et al</p> <p><i>Long Term effects of home visitation on maternal life course and child abuse and neglect.</i></p> <p>JAMA, 1997; 278(8): 37-43</p>	<p>Randomised Trial</p> <p>400 pregnant women with no previous live birth – 324 participated on a follow up study when their children were 15 years old.</p>	<p>Women who were visited by nurses during pregnancy and infancy were identified as perpetrators of child abuse and neglect less then controlled group.</p> <p>Women who were unmarried and from households of low social economic status had less subsequent births and longer birth intervals between birth of first and second child.</p> <p>This program of pre3natal and early childhood home visitation by nurse can reduce number of subsequent pregnancy, the use of welfare, child abuse and neglect and criminal behaviour</p>	Good

***Pregnancy And Postnatal – Support, Encouragement and Health Behaviour***

No.	Title, Author, Year,	Type of Study, Sample Size, Follow Up	Characteristics and Outcome	Comments, Grade of Evidence
1.	<p>Blondel B; Mellier G</p> <p><i>Home visits during pregnancy. Review of randomised studies and further questions.</i></p> <p>J Gynecol Obstet Biol Reprod (Paris), 1996; 25(5): 515 – 22</p>	<p>Systematic Review of randomised controlled trials</p> <p>Study of 7 Trials from Databases. 2 Categories: I) trials on social support ii) trials focusing on medical surveillance</p>	<p>Home visits focusing on social support led to a slight reduction nearly significant in preterm deliveries.</p> <p>Home visits did not reduce the rate of preterm deliveries nor the number of hospitalisations in cases of complicated pregnancies.</p> <p>Home visits in general, had positive effects on women in terms of social support, health behaviour and knowledge of medical problems.</p>	<p>Good</p>
2.	<p>Julkunen KV</p> <p><i>The functions of home visit in maternal and child welfare as evaluated by services providers and users.</i></p> <p>Journ. Of Adv. Nsg1994; 20 672-678,</p>	<p>Prospective Cross sectional study using structured and open ended self administered identical questionnaires for PHN and clients</p> <p>263 P. Health Nurses (PHN) 323 clients</p>	<p>PHNs felt that the most important function of home visit is to support and encourage parents and ensure continuity of care.</p> <p>No statistical difference between the views of PHNs specializing in child welfare, perinatal care and comprehensive nursing.</p> <p>Clients felt that the important function of home visits was to have a competent professional examination of the newborn. Almost clients (96% or n=311) felt that home visits in both services were still necessary.</p> <p>4% of clients (n=142) felt that home visit service could be discontinued if clinic services have to be cut.</p>	<p>Poor</p>

No.	Title, Author, Year,	Type of Study, Sample Size, Follow Up	Characteristics and Outcome	Comments, Grade of Evidence
3.	<p>Olds DL; Henderson CR Jr: Tatelbaun R</p> <p>Prevention of intellectual impairment in children of women who smoke cigarettes during pregnancy.</p> <p>Paediatrics, 1994; 93(2): 228 – 33</p>	<p>Randomised controlled trial</p> <p>400 families-mothers registered before 30<sup>th</sup> week of pregnancy and no previous live birth.</p> <p>Intervention: Nurse home visitation during pregnancy (Rx 3 and 4), or during pregnancy and first two years of child's life (Rx 4)</p>	<p>Children born to women who smoked 10+ cigarettes per day at registration during pregnancy who were assigned treatment 3 and 4 had IQ 4.8 points higher than those with treatment 1 and 2 (sensory developmental screening, plus transportation for prenatal and well-child without home visiting.)</p> <p>The positive influence of home visiting program on reducing the harmful effect of smoking appears to be due to prenatal visitation.</p> <p>Comprehensive prenatal home visitation services can offset impairment in intellectual functioning associated with substantial maternal smoking during pregnancy.</p>	<p>Good</p>
4.	<p>Olds et al</p> <p><i>Long term effects of home visitation on maternal life course and child abuse and neglect.</i></p> <p>JAMA, 1997; 278(8): 37-43</p>	<p>Randomised Trial</p> <p>400 pregnant women with no previous live birth – 324 participated on a follow-up study when their children were 15 years old.</p>	<p>Women who were visited by nurses during pregnancy and infancy were identified as perpetrators of child abuse and neglect less than controlled group (0.29 vs. 0.54).</p> <p>Women who were unmarried and from households of low social economic status had less subsequent births (1.3 vs. 1.6) and longer birth intervals between births of first and a second child (65 vs. 37 months).</p> <p>Women who were unmarried and from household of low socioeconomic status also received Aid to Families and dependent children 60 vs. 90 months, had less behavioral impairments due to use of alcohol and drug abuse (0.41 vs. 0.73), less arrests by self report (0.18 vs. 0.58) and arrests disclosed by New York State records (0.1 vs. 0.9).</p> <p>This programme of prenatal and early childhood home visitation by nurses can reduce number subsequent pregnancies, the use of welfare, child abuse and neglect, and criminal behaviour on the part of low income, unmarried mothers up to 15 years.</p>	<p>Good</p> <p>Not very conclusive.</p>

No.	Title, Author, Year,	Type of Study, Sample Size, Follow Up	Characteristics and Outcome	Comments, Grade of Evidence
5.	<p>Byrd ME</p> <p><i>Long term maternal-child home visiting</i></p> <p>Public Health Nurs, 1998 Aug; 15(4): 235-42</p>	<p>Observations and interview</p>	<p>Three distinct patterns identified – single, short and long term.</p> <p>The long-term pattern – admiring, trusting, supporting, reassuring and validating seeing and exchanging sub process.</p> <p>Potential maternal, child and environmental consequences.</p>	<p>Poor</p>
6.	<p>Black MM; Nair P; Knight C; Wachtel R; Robt P; Schuler M</p> <p>Parenting and early development among children of drug abuse women: effects of home intervention</p> <p>Paediatrics 1994; 94(4Pt.1) 440-8</p>	<p>Randomised Controlled Trial</p> <p>Conclusion: 60 drug abusing women recruited prenatally and randomised (n=31) Comparison (n=29)</p>	<p>Women were marginally more likely to report being drug free and were compliant with primary care appointments for their children.</p> <p>Women were more emotionally more responsive and provide marginally more opportunities for stimulation.</p> <p>Reported more normative attitudes regarding parenting and more child- related stress but not related to intervention status.</p> <p>Findings suggest cautious optimism regarding the efficacy of early home interventions among drug abusing women in promoting positive behaviour.</p>	<p>Good</p>
7.	<p>Blondel B, Br'aert G</p> <p>Home visits during pregnancy: Consequences on pregnancy outcomes use of health services and women situations.</p> <p>Sermin Perinatal 1995 Aug; 19(4) 263-71</p>	<p>Review of 2 different types of home visits through Randomised controlled Trial</p> <p>8 trials</p>	<p>Pregnancy outcomes were not improved when women received home visits.</p> <p>Home visits did not decrease rate of hospital admissions for women with complications.</p> <p>Home visits have positive effects on women's medical knowledge, support levels, health habits and satisfaction.</p> <p>Need to define more precisely content of H/V for social support.</p>	

**LEVELS OF EVIDENCE SCALE**

<b>Level</b>	<b>Strength of Evidence</b>	<b>Study Design</b>
1	Good	Meta-analysis of RCT, Systematic reviews.
2	Good	Large sample of RCT
3	Good to fair	Small sample of RCT
4		Non-randomised controlled prospective trial
5	Fair	Non-randomised controlled prospective trial with historical control
6	Fair	Cohort studies
7	Poor	Case-control studies
8	Poor	Non-controlled clinical series, descriptive studies multi-centre
9	Poor	Expert committees, consensus, case reports, anecdotes

**SOURCE: ADAPTED FROM CATALONIAN AGENCY FOR HEALTH TECHNOLOGY ASSESSMENT (CAHTA), SPAIN**

**THE FOLLOWING HTA REPORTS ARE AVAILABLE ON REQUEST:**

REPORT	<u>YEAR</u>
1. LOW TEMPERATURE STERILISATION	1998
2. DRY CHEMISTRY	1998
3. DRY LASER IMAGE PROCESSING	1998
4. ROUTINE SKULL RADIOGRAPHS IN HEAD INJURY PATIENTS	2002
5. STROKE REHABILITATION	2002
6. MEDICAL MANAGEMENT OF SYMPTOMATIC BENIGN PROSTATIC HYPERPLASIA	2002