



Care for Child Development

Technical Note



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WHO Library Cataloguing-in-Publication Data

Care for child development: improving the care of young children.

Contents: Participant manual – Counseling cards – Facilitator notes – Guide for clinical practice – Framework for monitoring and evaluation – Poster – CD-ROM with course materials, presentations, reviews and videos.

1. Child development. 2. Health personnel – education. 3. Delivery of health care.
4. Teaching materials. I. World Health Organization.

ISBN 978 92 4 154840 3

(NLM classification: WS 105)

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Care for Child Development: Technical Note

Executive summary

The critical role of the health-care system in ensuring every child's right to survival and development has long been recognized. It is the only system that reaches children under three years of age, the most critical window for both risk and opportunity, and is responsible for ensuring a standard of health for children. Several strategies to incorporate psychosocial development (social, emotional, cognitive, language and motor development) into nutrition and health-care systems have been developed, such as including developmental milestones “on growth cards”, but evidence for effectiveness has been slim. In response to this need, the World Health Organization (WHO) developed the Care for Development module to be a part of Integrated Management of Childhood Illnesses (IMCI) in the late 1990s. Additional support materials and training manuals were completed in 2001, and the module has been used in over 20 countries. Three evaluations of effectiveness have been completed. In Kazakhstan, Kyrgyzstan, and Tajikistan the intervention was associated with changes in the recommendations provided by the health care workers, by a few family behaviours, and in the two counties in which child outcomes were assessed, significantly higher scores among children under 3 years of age. The present version of the Care for Development module – renamed **Care for Child Development** – (2010) incorporates the revised WHO/UNICEF nutrition recommendations and the recent evidence demonstrating that critical caregiver skills (sensitivity and responsiveness) affecting the child's healthy growth and development can be taught to caregivers.

Purpose of the new module – Counsel the Family on Care for Child Development

The new module **Counsel the Family on Care for Child Development** is to be used by a health worker or community worker to provide age-appropriate guidance to the caregiver for helping the child develop cognitive, language and social-emotional skills. The module has three parts: a list of recommendations by child age, a list of potential problems and possible solutions, and a checklist for the health-care worker to use to assess the interaction between the caregiver and child and help to decide whether more intensive work is needed. It is supported by training materials for health workers, for facilitators, clinical practice and a framework and guide for monitoring and evaluation.

How the module is used with the caregiver

The module was originally developed to be part of IMCI, and was specifically linked to the guidance on infant and young child feeding on the Mother's Card. Thus the format is based on the IMCI model of assessing feeding and making recommendations for improvement. Using a counselling approach, the health worker asks the caregiver about how she plays and communicates with her child. The health worker then listens to the answer, praises the actions of the caregiver that are positive, and provides advice if needed. Finally, the health worker checks to see whether the caregiver has received and remembered the information. In the new **Care for Child Development**, the same four-step counselling approach is used (Ask and Listen, Praise, Advise, and Check Understanding). Suggestions for helping the caregiver with problem solving are included. In order to help the caregiver carry out the recommended actions, the health worker should encourage the caregiver to try out activities during the health visit and provide feedback.

The assessment questions are: how do you play with your child, and how do you communicate? The reason for using the words “play” and “communicate” is that they should be understandable to families and not technical, but that they capture the dimensions of responsive and sensitive care. “Play” refers to the ways that children manipulate objects as they try to master new skills in the process of cognitive development. “Communicate” refers to the ways that parents and children send messages to each other, including signs, gestures and words, which reflect social, emotional and language development.

Revision of the module into Care for Child Development

The revised title incorporates the word “Child” in the title to make the focus more clear. The materials incorporate new issues (e.g. the non-breastfed child, maternal depression), and new age groups (e.g. the first week of life is separated).

Evidence for effectiveness

Two pilot studies have been undertaken in Brazil and South Africa. The Brazil study identified that health workers could learn, and more of them were to complete, the tasks in the counselling on **Care for Child Development**. Caregivers could understand and try out the tasks at home. The South Africa research identified that counselling on **Care for Child Development** could occur during an IMCI sick child consultation and training in the Care intervention enhanced, rather than detracted from, the health workers' IMCI skills in assessing and treating children. Another two efficacy trials showed that the intervention could increase the play and communication activities of parents to stimulate their children (Turkey; Ertem et al., 2006) and enhance the child's development (rural China; Jin et al., 2007). An assessment of programme implementation in three countries showed that the intervention was able to be implemented at scale, and resulted in changes in health worker perceived competencies, recommendations made during consultations, a few parental behaviours and, in two countries, assessments of child -development (Engle et al., 2010).

Developmental assessment

The **Care for Child Development** materials support an intervention to stimulate the child's development and improve caregiver-child interactions. Although the recommendations for play and communication are based on the child's age-related learning needs and growing capabilities, the materials do not provide family workers with the skills to assess developmental milestones.

In some countries, however, health providers and other childcare workers are responsible for assessing the development of children at regular intervals in order to detect children in need of early intervention. Valid developmental assessments, however, should be part of a system that can also provide accessible and effective interventions for children identified with special learning needs. In countries with resources to set up a balanced assessment and intervention system, it is recommended that screening begins with family concerns about the child. Screening children with possible developmental delays, where families can get help, is preferable to expending financial and human resources for routine testing of all children.

Care for development: The background

a. Basis for the recommendation

The decision to develop a module for care for development, and the basis for the model, was outlined in an extensive literature review of the links between nutrition and development, *A Critical Link* (WHO, 1999). The conclusion of the review was the importance of the earliest years and the interaction of nutrition and development, including the quality of care provided to the child, such as in responsive feeding. These two were to be merged in the module.

The report concluded, “There is ample evidence that successful nutrition interventions improve physical growth. There is also evidence that such interventions, including also promotion of sound breastfeeding practices, can significantly improve psychosocial development, and have a significant and positive impact on child cognitive and motor development if implemented early in life. This applies also to the disadvantaged children who live in a poor environment and are at higher risk of malnutrition, illness and poor development. It has also been shown that psychosocial interventions alone can improve child psychological development. These interventions, too, should start very early in life – as children are most vulnerable at this time – and would also be effective after this period. The first few years in life are therefore the most sensitive ones to both nutrition interventions and psychosocial interventions. When simultaneously implemented, interventions to promote growth and those to promote psychological development have even a greater effect than when carried out individually. A “critical link” has thus been established between physical and nutritional status of the child and his/her psychological development”.

“As the main source of physical and emotional care for young children is the family, parents need to be involved and provided with the necessary skills to feed their children adequately, stimulate their development and be responsive to their psychosocial needs. Of practical interest is recognizing that behaviours to improve nutrient intake and psychosocial support require just a few skills from child caretakers. Counselling families to develop and strengthen those skills is therefore an approach to be undertaken. There is initial scientific evidence that counselling caretakers on child feeding, as promoted in the integrated childcare approach of IMCI, can ultimately result in weight gain and improved nutritional status. Large-scale early childhood care and development (ECCD) interventions in developing countries have resulted in improved short and long-term educational outcomes; to have long-term effects on development, interventions should be intensive and protracted for several years” (Peltó et al., 2000).

The module included recommendations to parents to support cognitive development (play), social-emotional and language development (communication), and responsive feeding, as well as breastfeeding and complementary feeding. One basis for the recommendations was derived from the WHO Mental Health and International Child Development Programme recommendations for good mother-child interaction, “Eight guidelines for good interaction” (WHO Mental Health, 1998), and critical care practices as summarized in *Care for Nutrition* (Engle PL, 1997).

The recommendations were based in part on the contextual psychology of Vygotsky (1978) and the attachment theories of Bowlby and Ainsworth that emphasize the importance of mother-child interaction patterns, emotional availability and responsiveness of the caregiver to the child for emotional and cognitive development (Bowlby, 1969; Ainsworth, 1978, 1989). These theories have now become the dominant explanatory models for developmental psychology that address cultural issues (e.g. Bornstein et al., 2008). Developing an early emotional connection to a caregiver, or an attachment, is critical for an infant’s well-being (Isabella, 1993; de Wolf and van Izedoorn, 1997).

Care for Child Development encourages the experiences of positive contact between child and caregiver.

These dimensions are consistent with three aspects of parenting that Shonkoff & Phillips (2000) found to be consistently related to young children's cognitive and social-emotional competence: (1) cognitive stimulation, (2) caregiver sensitivity and responsiveness to the child, and (3) caregiver affect (emotional warmth or rejection of the child). From the infant's perspective critical outcome dimensions are age-appropriate exploring and enjoyment and involvement, and the infant's interest and success in engaging the mother.

A marked deficiency in the early environment, both due to lack of stimulation and absence of attachment to a significant other, such as occurs in a poorly run orphanage, can have significant negative effects on cognitive functioning. Toxic stress, or “strong, frequent or prolonged activation of the body's stress management system,” can affect brain development and possibly later learning and memory (National Scientific Council on the Developing Child, 2005).

Researchers in South Africa evaluating the effects of the HIV/AIDS pandemic on young children reached somewhat similar conclusions (Richter, Foster & Scherr, 2006). They concluded that every child needs a continuing relationship with at least one person for whom that child is special. These researchers also emphasized two other basic requirements: that the mother-infant dyad has adequate sources of support (economic as well as social), and that they belong to a larger social group (Richter, Foster & Scherr, 2006). In many developing countries, access to resources and to the wider context of social support is absolutely essential to child survival and development.

Responsivity and sensitivity are also necessary for a young child's cognitive development. Numerous studies have demonstrated the effectiveness of stimulation for improved development in many developing countries (e.g. Walker et al., 2007). These studies demonstrate that children's cognitive development can be improved through adult support of children's cognitive capacities through a process called “scaffolding”, in which a child is encouraged to consider new options or extend her thinking through adult facilitation and joint attention (both adult and child attending to the same task). The amount of language exposure, particularly language used meaningfully or in context, is strongly associated with later language development, which in turn affects school performance and success (Brooks-Gunn & Duncan, 1997). Learning materials that provide children with opportunities for manipulation and control, whether homemade or purchased, and books are important supports for learning in many societies (Bradley & Corwyn, 2005). For example, a recommendation for cognitive development (Play) for 6-12 months is to “give your child clean, safe household things to handle, bang and drop”. The recommendation stresses the child's control over the materials, and the experimentation that the child should do with them. It also shows that children do not need purchased toys for learning.

These concepts of sensitivity and responsivity underlie the recommendations in the **Care for Child Development** intervention. For example, the “communication” recommendation for 1-6 months to “get a conversation going with your child with sounds or gestures by copying your child's sounds or gestures” is an adaptation of one of the eight principles of good interaction and emphasizes sensitivity (reading the child's cues), responsivity (responding to the child) and emotional exchange. The recommendations are made more specific than the guiding principles based on piloting.

b. Operational decisions

Age groupings

A number of decisions were taken in designing the recommendations. First, the decision was to provide guidelines for children from birth to 5 years old, with a particular emphasis on the youngest of that group, from birth to 3 years, because this is a critical period for effectively influencing the child's development. Second, the intervention is often delivered through the health system, as the health system is the most likely service to reach the youngest children, starting at birth. Third, within the health system, the **Care for Child Development** intervention can fit within the preventive, promotive, and care services for mothers and children as well a whole range of other services dealing with families.

Developmental assessment

Health services in some countries have the responsibility of providing a developmental assessment at regular intervals in order to detect children in need of early intervention. In cases of developmental delay or other disabilities, the earlier the intervention can begin, the more likely it is to be effective in ameliorating the risk. Developmental assessment or screening should be part of a system of early intervention for children with disabilities and delay. Screening without a system for intervention is not recommended. However, when countries are able to create the system, some form of screening can be included.

Screening is the early identification of possible developmental delay or disability in order for early therapeutic intervention to occur, roughly similar to the curative component of health care. On the other hand, counselling provides support, knowledge, and skills to caregivers in order to help them support their child's development. For example, in the **Care for Child Development** approach, which can be incorporated into a variety of programs including more complex systems that include the assessment of child development skills, the health worker assesses the interaction between the caregiver and the child by asking the caregiver to, "show me how to get your child to smile." While this assessment on smiling does not specifically assess the child's developmental level, if the caregiver expresses a concern, it will be discussed. At present, many materials (e.g. growth cards) contain developmental milestones without specific information as to how to encourage development through parental actions, nor provide cut-off points for developmental delay.

Which approach is most appropriate will depend on the circumstances and resources of the health centre. If a health centre has relatively healthy children, the ability to deliver good quality health care to most children, trained professionals to administer tests, and a complete set of referral options if a delay or disability is detected, screening of high-risk children would be recommended. The earlier the intervention for children with disabilities, the more likely it is to be effective. However, there are many countries that do not meet these criteria – there are no referral services, and much of the delay observed is due to poverty or malnutrition. In cases where there are no resources for referral, the health-care worker who tested the child and determined that there was a delay would simply recommend additional actions by the caregiver. In these cases, a counselling approach may be preferable.

The advantages of adopting a counselling rather than screening approach in developing countries are:

1. More severe disabilities are likely to be detected at birth, and mild disabilities may not be evident until children enter school. The number of disabilities detected during the first and second years of life tend to be extremely small, and parents tend to be aware of these difficulties already. Routine screening may not be cost effective.
2. If there are no available referral options, the family will have to deal with the disability in any case. Therefore, it may be more appropriate to teach stimulation strategies to families than to test and refer.
3. If a child appears to be developmentally delayed due to poor environmental conditions or inadequate stimulation, the most effective approach is to counsel the family to improve their stimulation of the child. Special programmes may not exist, and the problem is rooted in the current home situation.
4. Developmental screening tests that are sensitive, specific and based on local norms is a major undertaking. Far more research is currently required to identify appropriate screening materials for infants and young children less than 2 years of age, as well as developmental standards that are relevant for children in different cultures and resource-poor environments (Maulik and Darmstadt, 2007). Developing easy-to-administer testing methods and training health workers to administer the tests accurately and consistently in order to assure their validity also requires an extensive investment.
5. In order for testing of infants to be valid, the tester must be well-trained and comfortable with the items; the child should be healthy, calm, and not fearful; there should be sufficient time for the child to warm up to the testing, and few distractions. These requirements are particularly important for the valid assessment of infants and younger children. These conditions may be difficult to attain during a sick-child visit, or even during a well-child visit. Additional screening is always advised before a treatment or classification decision is made.
6. An incorrect classification of a child at an early age, such as the designation of mental retardation, has long-term social consequences for a child, and the risks of an incorrect classification may outweigh the benefits of a correct one.

c. Changes in the new Care for Child Development materials

After 10 years, there was a need for a review and revision of the Care for Development materials. Although a number of changes were recommended, they are quite small, and the decision has been to revise the materials and the card, but there is no need for a major overhaul of the basic approach. The changes and the rationale for the change are listed below.

1. **Title.** The first change is to the title, which will now include the word Child in order to distinguish it from economic development.
2. **Newborn care.** There is an increasing focus on the newborn, and there needs to be specific recommendations for that age period. Therefore, the new card includes recommendations for the child from birth to one week, and then one week to six months rather than 0-3 months and 4-6 months. This has implications for the recommendations.
3. **New checklist for health workers.** In the initial Care for Development, the health worker recorded whether or not there was a recommendation given on the overall checklist, and this information was also recorded in the IMCI monitoring form. However, since this recommendation did not have any actions associated with it, or any indicators, it tended not to be used. The current module includes a guide for the health worker to record observations for the visit and

suggests specific recommendations that the health worker can make. This form could be used for ongoing programme monitoring.

4. **Maternal depression, distress, and well-being.** Recent research suggests that maternal depression is much more common than previously believed, particularly in areas of poverty and social exclusion for women (e.g. South Asia), and that there are risks for infants when mothers are depressed (Patel V et al., 2004). The new **Care for Child Development** incorporates recommendations for dealing with maternal depression.
5. **HIV and AIDS.** In order to address the increasing number of young children affected by HIV and AIDS, recommendations for children not living with their parents are included.
6. **Motivational statements.** Current research suggests that having a rationale for action linked to one's beliefs increases motivation for behaviour change. For that reason, more attention has been spent on explanations for actions, and there are suggestions to community health workers that caregivers need support and want the best for their children.
7. **Information on harsh punishment.** The previous version of the Card did not include any recommendations or problem issues related to punishment. However, there is increasing concern about the dangers of harsh punishment, and their wide usage in many countries. Therefore, a question on discipline has been added to address these concerns.
8. **Adding specific suggestions on toys and books.** The earlier version focused primarily on using home-based materials for playing and exploring. However, the increase in evidence on the importance of early exposure to books, and interactions around books and pictures, and the importance of learning materials has suggested that there can be specific suggestions to incorporate books and some toys into the Card.
9. **Father and family.** The earlier module used the term “mother” rather than specifying who the caregiver was. However, the increasing understanding of the importance of men's role with young children has led to specific suggestions for male involvement and use of the words Caregiver or Parent rather than just “mother”.
10. **Rights.** A Statement on Rights is in the beginning of **Counsel the Family on Care for Child Development**.
11. **Allowing Care for Child Development to be a stand-alone module.** Many countries do not have IMCI, and there was a clear decision to create a module that could be incorporated into any primary health care rather than only IMCI. Therefore, the structure has been changed to be a stand-alone card and training manual. As part of that decision, it was decided to separate it from the nutrition component as well.
12. **Increase the number of components.** The original Care for Development module provided information and recommendations for families to help them provide cognitive stimulation and social support to all young children as part of the child health visit specified in IMCI. WHO prepared not only the Care for Development recommendations, as part of the Counsel the Mother Card, but also prepared advocacy materials (video and newsletter), technical seminars, training materials for the trainers of health workers, a facilitator's guide for training of trainers, and videos for advocacy and training.

The list below shows all of the components that are currently available for the new and updated WHO/UNICEF **Care for Child Development**.

- Foreword – Acknowledgments
- Care for Child Development: Improving the Care of Young Children

Course materials: Counsel the Family on Care for Child Development

- Care for Child Development: Participant Manual
- Care for Child Development: Counselling Cards
- Care for Child Development: Facilitator Notes
- Care for Child Development: Guide for Clinical Practice
- Framework for Monitoring and Evaluation
- Poster: Recommendations for Care for Child Development

CD-Rom: Technical, Advocacy and Training Resources

- Care for Child Development: Guide for Monitoring and Evaluation

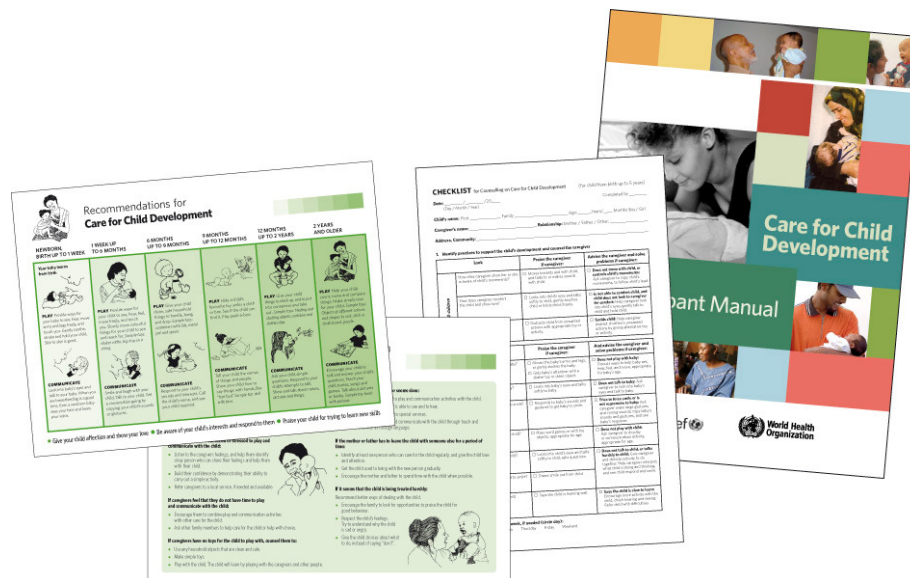
Course Materials

Presentations for Technical Seminars

Reviews of the Evidence

Training and Advocacy Videos

Other Resource Materials



Developmental assessment

Similar to the previous Care for Development materials, the new **Care for Child Development** materials do not assess developmental milestones, although all of the recommendations are developmentally based. Second, as before, one of the problem areas identified is the caregiver reporting that the child seems to be developing slowly. In this case, the health worker is provided with a series of simple screening questions for vision and hearing to help determine these potential problems.

However, there is an increasing interest in incorporating some form of early detection or screening in health systems as part of a strategy to improve early child development. The recommendation in this case is to use an instrument that emphasizes the partnership between the parent and the health-care provider, as described by Ertem et al. (2008). In low- and middle-income countries (LAMI), the caregivers of a child assess their concern with the child's developmental progress with a series of questions that help to develop an assessment. This instrument is specifically designed to function in lower resource settings.

A second option is the Ages and Stages Questionnaires mentioned above (Squires et al., 1997). Although these were originally developed for a US population, they have been used in a variety of countries and efforts are under way to validate their use in other countries. They contain more specific examples of behaviours, and the caregiver is asked to observe the child and make ratings as indicated. The battery includes a series of questionnaires divided by age group, and a scoring strategy for the parent to be able to determine if the child is at risk. This instrument requires a higher level of literacy than the Ertem et al. instrument; it is supposed to require a reading competency equivalent to completed primary. It has been used in an interview mode, but not validated.

Both of these instruments have sensitivity and specificity ratings that are equal or superior to more standard clinic-based testing such as the Denver Developmental Screening Test (Oberklaid, 2005). They have the advantage of not increasing the time spent by the health worker, and providing new information about development to the caregiver. There may be few situations in which a system for intervention is in place, but the caregivers do not have the capacity to fill out the instrument.



Validation of the materials

A. Pilot tests

Since the approach was relatively new, three different trials were undertaken to evaluate the effectiveness of the materials. In Brazil, the materials were used with health workers, and their understanding and recall of the concepts were assessed. In South Africa, a field trial assessed changes in health workers' behaviour in consultations, understanding of messages, and client satisfaction. Finally, in Ankara, Turkey, the impact of the evaluation on not only attitudes and behaviour, but also the quality of the home environment was assessed.

The Brazil Field Test (dos Santos, Gonçalves, Halpern, & Victora, 1999)

A small-scale field test was conducted to assess if mothers were able to understand the messages being delivered and if the messages resulted in changes in maternal behaviour regarding child stimulation. Five physicians were trained on the nutrition module and the Care for Development module, and six were controls. For each medical doctor (both groups), a trained anthropologist carried out structured observations of five clinical attendances of children under two years. These children's caretakers were interviewed soon after these consultations, to assess their recall and understanding of the counselling provided. Approximately half of the 109 caregiver/child pairs were in the intervention group. One group of 68 was observed in the session with the physician, interviewed at exit and one week later, and the other group of 41 was not observed but interviewed at exit only. Caregivers' memory of the message, and expectation of doing the activity were assessed.

The results suggested that all but one of the five intervention physicians made a recommendation for Care for Development, but more recommended communication (79%) than play items (60%). They were significantly more likely to praise the mother (70% vs 19%) and check her understanding (78% vs 32%) than controls. When Care for Development was used, the average session time increased from 20 to 27 minutes.

All observed mothers recalled some messages both at the exit interview and seven days later. The most commonly recalled messages were (from the most frequent): Get a conversation going with sounds or gestures; give child clean household things that are safe to handle, bang and drop; have large colourful things for your child to reach for; play with child; and respond to your child's sounds. Although the physicians were less likely to give play messages than communication messages, four of the five most frequently recalled messages were about play. Interviewed, but not observed mothers, all remembered a message and recalled the same set of items. Among the intervention group, about 66% of mothers were already doing the activities and the remainder reported trying them.

The field test indicated that physicians can be trained to do this assessment (ask the questions) and give recommendations, mothers can recall them, and in this setting of southern Brazil, they are already being done. The physicians felt that the Care for Development training should be expanded with more exercises, they were less clear about the developmental levels, and felt more comfortable with the communication items than the play items. They recommended a training video.

South Africa Field Test (Chopra, 2001)

The purpose of this field test was to evaluate the implementation of the improved model of training for Care for Development with nurses, and its use within an IMCI sick child consultation.

A before/after design was used, with structured observation of consultations of the participants with eligible mothers and children, and exit interviews with the caregivers after the consultation. In the Western Cape, 21 nurses were trained on Care for Development and Feeding. A subgroup was observed a week before the training, and all 21 were observed during the training. In the training, the 14 nurses in the pretest did not differ from the seven who were not pre-tested, so the results were combined.

Trained nurses improved their general responsiveness to caregivers, increasing from 10% praise during the pretest to 58% during training, and 72% a week later. They also increased checking the caregiver's understanding (7% pre- to 58% during training and 67% later), and encouragement of the caregiver to talk (38% pre- to 64% during training). The authors conclude that "the modified IMCI training has been very effective in generally improving the performance of health workers in their communication and counselling for feeding and care in the short term". The authors recognize that a pretest/post-test design, with the supervisor observing the nurse in session, reduces the validity of the study. However, the behaviour changes were substantial; the problem is the ability to attribute these changes to the intervention. The authors commented that the group of trainees that was able to practice the feeding and care for development separately did perform better than those who did them together, but no reason was given. Finally, they comment on the relatively poor recall and responses of caregivers especially with respect to play and communication during the exit interviews, but again, data are not presented.

B. Efficacy trials

Ankara, Turkey (Ertem et al., 2006)

The first efficacy evaluation of the Care for Development module was performed in 2004 at the Department of Pediatrics, University of Ankara. The hypothesis tested was that the intervention group would have more play and communication activities in the home one month after an intervention than the control group, using the Home Observation Measurement of the Environment instrument, or HOME Scale. The design was sequential: two physicians saw 113 children for illness in the hospital and then in the home one month later. The two physicians were then trained, and they proceeded to see 120 caregiver/child pairs, of which most returned for a follow-up visit seven days later. They were also observed in their homes using the HOME Scale one month later. The sample was recruited from the Ankara Pediatric Outpatient Clinic, serving low- to middle-income families. Only those 24 months or younger, and with relatively minor illnesses or those who were coming for well-baby care were included. There were no differences between groups on any socio-economic status or illness measures.

The mean duration of the initial visits was 25.6 minutes (SD: 6.1) in the comparison group and 36.9 minutes (SD: 10.5) in the intervention group ($P < .01$), or 11 minutes more, which is slightly longer but quite similar to the Brazil estimates of seven minutes of increased time.

At the one-month home visit, 95.0% and 13.3% of caregivers in the intervention and comparison groups, respectively, stated that the pediatrician provided information on promoting their child's development. The two groups also differed significantly on their scores on the HOME Scale. Significantly more families had optimal HOME Scale scores (17.5% vs 6.2%), more homemade toys were observed (42.5% vs 10.6%), and more caregivers reported reading to their children (20.0% vs 3.5%) in the intervention than in the comparison group.

After the Care for Development training, physicians were observed to use two counselling skills more frequently: encouraging the caregiver to talk (observed in 45.1% and 99.2% of the visits before and after care for development training, respectively; $P < .001$) and encouraging the caregiver to ask questions (observed in 42.5% and 85.8% of the visits before and after care for development training, respectively; $P < .001$).

There was no apparent negative effect on health care. At the one-week follow-up, 88% of children had recovered. In fact, the intervention group provided significantly fewer incorrect medications. Moreover, patient satisfaction was high in both groups.

The authors conclude that the Care for Development intervention is an effective method of supporting caregivers' efforts to provide a more stimulating environment for their children and can be used by health-care professionals during visits for acute minor illness. Whether such a brief intervention might have a long-term impact is a question that should be investigated.

Rural China (Jin et al., 2007)

A second efficacy trial was performed in rural China, using a child development measure as outcome. The Jin et al. study (2007) evaluated the efficacy of the Care for Development intervention in rural China using home visitors who visited twice with caregivers over a six-month period. In the study, 50 mother/child pairs were randomly assigned to each arm of the study for a total of 100 children. Children were aged below two years; the families were selected after an initial survey to assess basic knowledge and attitude about child health. Mothers were provided two sessions of face-to-face guidance about good childcare practices using WHO guidelines. The first session at the beginning of the six-month period was followed by another after two months. Local village doctors were also trained using video, reading material and problem-solving exercises about child health care. At six months, the child's development was assessed using the Gesell Development Scale, and mother's knowledge and understanding of the recommendations were assessed using a questionnaire. Doctor's knowledge and confidence about managing the health of young children was assessed both prior to providing them training and one month after training. The mothers showed significant improvement in knowledge and skills about early childcare; the doctors showed increased ability to practice the learned skills; fine motor, speech and interpersonal communication among children in the experimental group were significantly higher than in the control group in adaptive skills, language development and cognitive development, but no differences were found in motor scores. A limitation of the study was that the person who tested the children was also the experimenter.

C. Programme evaluation

The only field trial located was an evaluation of the implementation of Care for Development in the field in Kyrgyzstan, Tajikistan, and Kazakhstan (Engle et al., 2010). These three country studies assessed the degree of implementation of the intervention in a random sample of -families living in the intervention districts, and in Kyrgyzstan and Tajikistan, assessments of child development using the Tajik Early Learning and Development Standards for children from 0-84 months, and the Ages and Stages Questionnaire in both (4-12 months in Tajikistan, and 4-36 months in Kyrgyzstan). The methodology was to compare districts that had received training in Care for Development with those which had not, matched by family asset and maternal education levels. An adaptation of the Health Facilities Survey was used, as well as a more in-depth assessment of family behaviours, and caregiver competencies. Approximately 100 health workers were interviewed, over 100 health visits were observed, and between 100-200 households were observed, with two thirds in the intervention area and one third in control areas. Exposure to the training was assessed in all cases. In both Tajikistan and Kyrgyzstan, significant differences in assessed child development were found.

In Tajikistan, children from intervention districts scored significantly higher than the control on two subscales of the Ages and Stages Parent Report Questionnaire from 8-12 months, and scored higher on the child measure ELDS at both 0-12 months and 13-36 months, although not at older ages. In Kyrgyzstan, children 4-36 months in the intervention districts scored significantly higher than the control on two subscales of the Ages and Stages Parent Report Questionnaire: communication and personal-social development (Engle et al., 2010).

In all three countries, there was evidence that health workers who had been through the training were significantly more likely to ask and make recommendations about Care for Development. Health workers who had been trained reported a greater sense of competence in items related to children's development. The child's caregivers in the intervention areas were more likely to recall items about Care for Development than those in the control areas as well. Families in the intervention areas were significantly more likely to have seen the Care for Development materials, but the differences between groups were not large. In two of the three countries, parents living in the intervention areas were significantly more likely to report having done a new activity with their child in the past week, with a trend in that direction in the third country.

D. Summary of the evidence

These pilot, efficacy, and effectiveness studies suggest that interventions to provide recommendations and problem solving to parents through a public health system can be effective in improving family stimulation behaviours and young children's development.

In order to implement this intervention, the time and investment of the health programme is relatively small; interventions added approximately 5-10 minutes per visit in the Ertem study and the Engle programme evaluation. The Jin study incorporated a 30-60 minute home visit two times over a six-month period – approximately the same intensity. The recommended IMCI training package is for 2.5 days, and is designed to include clinical experience.

In these studies, and in US studies that incorporate guidance on child development (Palfrey et al., 2005), the level of parental satisfaction with the health clinic is higher, suggesting that there may be additional benefits.

Ongoing studies investigating the longer term impacts of the Care for Development materials are underway in Pakistan, India and Australia which will provide more examples of local adaptations of materials, longer term impact on development and growth, delivery through community based agents and further data on integration within existing services of children less than 3 years of age.

Preliminary data from Sindh, Pakistan investigating the integration of **Care for Child Development** in the Lady Health Workers programme is promising. Local adaptation shows that combined group meetings and individual counselling through home visits are feasible if supported by regular training and supervision. Families and health workers accept the intervention. Change in knowledge and practices on **Care for Child Development** and early benefits in growth and development are being observed (Department of Paediatrics and Child Health, Aga Khan University, Karachi, Pakistan).

Given these findings, it seems essential to roll out the **Care for Child Development** intervention as soon as possible.

Guidelines for effective implementation and conclusions

The results from the intervention studies are quite consistent and a number of conclusions have emerged from them to guide effective interventions.

Adequate training is a critical component of the success of the programme. This training should:

- Include all health workers, not just nurses or physicians
- Ensure that clinical practice is included in all training courses
- Have clear linkage with nutrition programmes
- Have a regular schedule of training combined with regular supervision for encouragement and feedback on intervention skills

Adequate materials and strategies for working with parents should include:

- Adaptation to the local cultural context
- Value of local traditions, combining evidence-based processes
- Identification of local values related to child care and aspiration for the child that are motivational
- Maintenance of high quality, defined by structure and processes
- Cost effective and sustainable approaches
- Commitment and ownership at the local level through early engagement with health workers, families and communities
- Helping families use these recommendations at home, including giving them opportunities for practice with feedback
- Training community health workers to provide support to families
- Providing handouts that give specific recommendations
- Creating family demand through media and outreach

The policy and programming environment should:

- Have clear indicators and be part of a monitoring system
- Include child development in the health policy
- Have support of the government health system at local or wider levels
- Encourage partnership with local government, with education officials, and with community groups
- Benefit from funding mechanisms that allow local decisions

A module to provide recommendations to families to promote the development of their young children and with suggestions for handling specific problems in child rearing has been shown to have an effect on parenting behaviours and to increase parent appreciation of the health-care visit.

Delivering the Care for Child Development intervention through community-based providers

The scaling-up of the intervention so that the benefits could reach the greatest number of disadvantaged children remains under-addressed. In order to achieve this, the implementation of the **Care for Child Development** intervention through community-based providers, who are the cornerstone of primary care in most low-income countries, needs to be expanded. Health workers at the community level are already concerned with the health and well-being of mothers and children. In many instances, community health workers are the only health professionals with whom families come into contact in the early years of the child's life; they thus reach the majority of children in a community. Therefore if taken, the windows of opportunity within health-care encounters for young children are golden opportunities to help strengthen families' efforts to promote their child's development and may be the only opportunity available for health providers in developing countries to influence positively parents of young children.

It would be important to integrate **Care for Child Development** into the existing work of the community-based providers so that they do not see it as an extra burden. Previous work with Lady Health Workers in Pakistan shows that this is possible, but the intervention would need to be developed in close collaboration with the existing community health worker programmes (Rahman A, 2007; and Rahman A, Roberts C, Husain N, 2009) with a focus on training, support and motivation provided to health-care providers. WHO, UNICEF and partners are promoting the integration of the **Care for Child Development** intervention into existing health systems in all countries with special attention to poorly resourced areas.



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