

Quality of care for under-fives in first-level health facilities in one district of Bangladesh

S.E. Arifeen,¹ J. Bryce,² E. Gouws,³ A.H. Baqui,⁴ R.E. Black,⁴ D.M.E. Hoque,¹ E.K. Chowdhury,¹ M. Yunus,¹ N. Begum,¹ T. Akter,¹ & A. Siddique¹

Objectives The multi-country evaluation of Integrated Management of Childhood Illness (IMCI) effectiveness, cost and impact (MCE) is a global evaluation to determine the impact of IMCI on health outcomes and its cost-effectiveness. MCE studies are under way in Bangladesh, Brazil, Peru, Uganda and the United Republic of Tanzania. The objective of this analysis from the Bangladesh MCE study was to describe the quality of care delivered to sick children under 5 years old in first-level government health facilities, to inform government planning of child health programmes.

Methods Generic MCE Health Facility Survey tools were adapted, translated and pre-tested. Medical doctors trained in IMCI and these tools conducted the survey in all 19 health facilities in the study areas. The data were collected using observations, exit interviews, inventories and interviews with facility providers.

Findings Few of the sick children seeking care at these facilities were fully assessed or correctly treated, and almost none of their caregivers were advised on how to continue the care of the child at home. Over one-third of the sick children whose care was observed were managed by lower-level workers who were significantly more likely than higher-level workers to classify the sick child correctly and to provide correct information on home care to the caregiver.

Conclusion These results demonstrate an urgent need for interventions to improve the quality of care provided for sick children in first-level facilities in Bangladesh, and suggest that including lower-level workers as targets for IMCI case-management training may be beneficial. The findings suggest that the IMCI strategy offers a promising set of interventions to address the child health service problems in Bangladesh.

Keywords Child health services/standards; Primary health care; Quality of health care; Quality indicators, Health care; Health care surveys; Child, Preschool; Bangladesh (*source: MeSH, NLM*).

Mots clés Service santé infantile/normes; Soins santé primaire; Qualité soins; Indicateurs qualité santé; Enquête système de santé; Enfant âge pré-scolaire; Bangladesh (*source: MeSH, INSERM*).

Palabras clave Servicios de salud infantil/normas; Atención primaria de salud; Calidad de la atención de salud; Indicadores de calidad de la atención de salud; Encuestas de atención de la salud; Preescolar; Bangladesh (*fuentes: DeCS, BIREME*).

الكلمات المفتاحية: خدمات صحة الطفل، معايير خدمات صحة الطفل، الرعاية الصحية الأولية، معايير الجودة، الرعاية الصحية، مسوحات الرعاية الصحية، الأطفال، الأطفال قبل سن المدرسة، بنغلاديش. (المصدر: رؤوس الموضوعات الطبية، المكتب الإقليمي لشرق المتوسط)

Bulletin of the World Health Organization 2005;83:260-267.

Voir page 266 le résumé en français. En la página 266 figura un resumen en español.

يمكن الاطلاع على الملخص بالعربية في صفحة 267.

Introduction

Each year over 10 million children in low- and middle-income countries die before their fifth birthday (1, 2). About half of these deaths are due to pneumonia, diarrhoea, malaria and measles (1). Undernutrition contributes to about 50% of these deaths (1, 3). Integrated Management of Childhood Illness (IMCI) is a strategy developed by WHO, the United Nations Children's Fund (UNICEF) and other technical partners to reduce mortality due to these causes and to undernutrition (4). By December 2002, IMCI had been introduced in 109 developing countries (5).

The IMCI strategy includes guidelines for the management of sick children at first-level facilities. The guidelines are intended to improve care by ensuring a complete assessment of the child's health, and by providing algorithms that combine presenting symptoms into a set of illness classifications for management. The generic guidelines were validated and found to produce outcomes similar to those from expert paediatricians (4).

The multi-country evaluation of IMCI effectiveness, cost and impact (MCE) is a global evaluation to determine the impact of IMCI on child mortality, health and nutrition. MCE studies are under way in five countries (6, 7). Findings from other MCE sites have demonstrated that the introduction

¹ International Centre for Diarrhoeal Diseases Research, Bangladesh (ICDDR,B), PO Box 128, Dhaka, Bangladesh. Correspondence should be sent to Dr Arifeen at this address (email: shams@icddr.org).

² Ithaca, New York, USA.

³ Department of Child and Adolescent Health, World Health Organization, Geneva, Switzerland.

⁴ Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA.

Ref. No. 04-016642

(Submitted: 22 July 2004 – Final revised version received: 4 January 2005 – Accepted: 5 January 2005)

of IMCI in health facilities can improve the quality of health care provided for children (8–10). Only in the Bangladesh site, however, was an assessment of the quality of care carried out prior to introducing IMCI. This study is particularly important in the light of several recent reports that have highlighted limited country-specific planning for implementation as a major reason why most countries have not successfully scaled up IMCI to reach coverage levels that would have an impact at the population level (11, 12).

The MCE evaluation in Bangladesh is a 7-year study that began in 2000. The study is being implemented in Matlab *thana*, a rural subdistrict in southern Bangladesh. Matlab has a population of about 500 000 and a mortality rate in children aged under 5 years of approximately 89 per 1000 live births. About 35% of these deaths can be attributed to causes directly addressed by IMCI, namely pneumonia, diarrhoea, measles and malnutrition (13). The IMCI evaluation is taking place in the four-fifths of the *thana* where health services are run by the Government of Bangladesh.

First-level government facilities in rural Bangladesh, and in the study area, are usually staffed by a paramedic (medical assistant/sub-assistant community medical officer (MA/SACMO)) — usually male — who has had 4 years of clinical training, and a female reproductive health worker (family welfare visitor (FWV)) who has had 18 months of training in provision of maternal and child health and family planning services. In some facilities there is a position for a doctor, but in most cases, these positions remain vacant (14). There are no official user-fees for government-provided child health services. Bangladesh also has a wide range of local practitioners of indigenous and western medicine, and drug stores.

Because IMCI had not yet been fully implemented in Bangladesh, Matlab *thana* provided an excellent opportunity for a probability-design assessment of IMCI impact. The sampling frame included all 20 first-level government health facilities in the *thana* outside the International Centre for Diarrhoeal Diseases Research, Bangladesh (ICDDR,B) intervention area, half of which were randomly selected for the implementation of IMCI. The data sources for the evaluation included baseline household and health facility surveys. Mid-term and final surveys will be conducted after IMCI has been fully implemented (6).

The objective of this analysis from the Bangladesh MCE study was to describe the quality of care delivered to sick children

aged under 5 years in the 20 first-level government health facilities to inform government planning and later evaluations of improvements in child health services and outcomes that may be associated with the introduction of IMCI.

Methods

The baseline survey of health facilities was carried out between August and September 2000. The target was to observe 15 sick children at each facility (to detect a difference of 20 percentage points between IMCI and comparison facilities for priority MCE indicators; alpha = 5%; power = 80%; one-tailed design; design effect = 2.0).

The generic health-facility survey tool was adapted for this survey (7, 15). Information was collected through observation of case-management using a standard checklist, exit interviews with caregivers, re-examination of each child by a “gold-standard” surveyor, interviews with health-care providers and an audit of the supplies and equipment available at the health facilities.

Indicators

The performance of health-care providers was assessed using the quality of care indicators designed for the MCE. IMCI-specific indicators have been indicated in the Tables by a footnote as their inclusion in the assessment would otherwise represent a negative bias against the quality of care assessment of the facilities (because the care may be clinically correct but not conform to IMCI guidelines). Indicator definitions cover assessment tasks, correct classification, correct treatment and correct counselling of caregivers (7). A composite indicator was used to summarize the performance of 10 assessment tasks (16). Health facility support indicators including availability of essential oral treatments (excluding antimalarials) and availability of essential equipment and materials were also assessed. The satisfaction of caregivers with facility services was assessed, but is not reported here.

Procedures

Two field teams, each consisting of three physicians, conducted the survey. They had been trained in IMCI case-management and study procedures. The exit interview form was translated into Bengali and verified by the principal investigator. UNISCALE weighing scales, measuring tapes, thermometers and timers were used in the survey.

Table 1. Health facilities assessed by type and cadre of health provider present during survey observations in Matlab *thana*, Bangladesh, 2000

Facility type	Total number of facilities	No. of facilities with:		
		Medical assistant/ sub-assistant community medical officer	Family welfare visitor	Pharmacist
Type 1: Union health and family welfare centre ^a	14	9	12	1
Type 2: Union subcentre	1	1	0	1
Type 3: Co-located union health and family welfare centre and union subcentre	4	4	3	3
Total	19	14	15	5

^a In three instances, the union health and family welfare centre operated only as a satellite clinic.

One team spent three consecutive days at each facility, arriving before consultations began in the morning. Each day, the teams attempted to enrol the first five sick children aged 2–59 months presenting for care. One surveyor accompanied the child and caregiver throughout the case-management process, to record what happened without interfering with routine services. When the consultation was complete, a second surveyor, blinded as to the original assessment, conducted a “gold standard” re-examination of the sick child to provide the IMCI-specific classification of illness used in this analysis. An exit interview was conducted with the child’s caregiver at this time. Meanwhile, the first surveyor observed the case-management process for the next child in the waiting room. It was not always possible to observe all children, because some arrived while data were still being collected on the previous child. A complete list of all sick children seeking care at the facility on the survey days was made. Interviews with health providers and audits of facility supplies and equipment were carried out during slack periods. At the end of each day the data-collection team and the team leader reviewed all forms for consistency and completeness.

Ethical approval for the study was obtained from the ethical review committees of ICDDR,B, and WHO in Geneva, Switzerland. Informed verbal consent was obtained from the caregivers of the sick children who presented at the health-care facilities.

Data processing and analysis

Double data entry was carried out by two different people using EPIInfo 6.0 (17); the two versions were compared and discrepancies resolved by referring to the original forms. Standard range and consistency checks were made. Statistical analysis was carried out using STATA version 7 for Windows (18).

For case-management indicators, the analysis was weighted so that the sample of children observed was representative of a typical day’s attendance at the health facility. The weighting used was the inverse of the total number of children actually included in the survey divided by the total number of sick children who attended the facility on the three days of observation. For comparison between cadres of health-care providers the chi-square test was used with a Rao–Scott correction to adjust for clustering of children at the health facility level.

Results

The baseline health facility survey was carried out in 19 of the 20 first-level facilities in the study area. One facility could not be included in the survey because no staff member was present during the survey period. Table 1 provides details of facility types and staffing patterns and Table 2 presents the age and sex distribution of the 284 sick children seen at the facilities during the study period.

The classification of illness most frequently presenting was fever (80%), followed by cough or cold (49%), pneumonia (25%) and diarrhoea (19%) (Table 3). No child presented with diarrhoea with dehydration or with malaria. Thirty-three per cent of children presented with “other” illnesses not included in IMCI classifications, although all but one of these children (94/95) also presented with an IMCI-related illness. The most common “non-IMCI” symptom was skin infection (46/95).

Eighty-seven per cent of all children included in the survey received more than one classification; 22% received four or more classifications. Both cough and fever were present, with or without

Table 2. Characteristics of children observed and cadre of health care provider in Matlab *thana*, Bangladesh, 2000

	No. of children observed <i>n</i> = 284 (percentage)
Age in months	
2–11	84 (30)
12–23	75 (26)
24–35	51 (18)
36–47	46 (16)
48–59	28 (10)
Sex	
Male	158 (56)
Female	126 (44)
Caregiver	
Mother	242 (88)
Other	33 (12) ^a
Cadre of provider	
Medical assistant	184 (65)
Family welfare Visitor	94 (33)
Pharmacist	6 (2)

^a Nine missing (no caregiver interview).

Table 3. Presenting conditions of 284 sick children aged under 5 years attending first-level health facilities in Matlab *thana*, Bangladesh, 2000

Classification of presenting illness	<i>n</i>	Percentage ^a
Fever	223	80
Cough or cold	133	49
Pneumonia	70	25
Diarrhoea	53	19
Very low weight	50	19
Anaemia	45	16
Acute ear infection	25	9
Chronic ear infection	21	7
Dysentery	15	5
Measles	8	4
Other	95	34

^a Percentages are weighted estimates whereas the numbers are actual, and therefore they will not exactly correspond.

other symptoms, in 40% of the children (17% had both cough and fever with no other symptoms). Twenty three per cent of the children were classified as having both pneumonia and fever.

Assessment and classification of the sick child

The quality of the assessment of the child’s illness, when measured against IMCI standards, was very low in all facilities (Table 4). None of the children was checked for the three danger signs (unable to drink or breastfeed, vomiting all feeds, or convulsions) or had their weight checked against a growth chart. Very few were checked for the presence of cough, diarrhoea and fever, or other problems. Almost none of the children who were identified as having very low weight on subsequent re-examination by the surveyors were assessed for feeding practices by the facility providers. The overall index of assessment had a mean score of 23 out of a maximum of 100.

Table 4. Proportions of children and caregivers for whom specific case-management tasks were performed by providers in first-level health facilities in Matlab *thana*, Bangladesh, 2000 (weighted estimates)

Indicator	No. of children or no. of carers ^a eligible for task	Percentage (<i>n</i>) or mean for whom task was performed
Assessment of the sick child		
Child checked for three danger signs ^b	284	0 (0)
Child checked for the presence of cough, diarrhoea and fever	284	14.7 (43)
Child's weight checked against a growth chart	284	0 (0)
Child under 2 years of age assessed for feeding practices ^b	153	0 (0)
Child checked for other problems	114	11.9 (15)
Child with very low weight assessed for feeding problems ^b	47	1.3 (1)
Index of integrated assessment (mean) (range 0–100) ^b	284	23.0 ^c
Classification of the sick child		
Child was correctly classified	274	19.9 (56)
Child with very low weight was correctly classified ^b	49	1.8 (1)
Treatment of the sick child		
Child with pneumonia treated correctly	64	12.5 (8)
Child with dehydration treated correctly	0	0 (0)
Child with anaemia treated correctly	43	0 (0)
Child needing an oral antibiotic was prescribed the drug correctly	110	11.1 (12)
Child not needing antibiotics left the facility without antibiotic	164	38.8 (68)
Child received first dose of treatment at the facility ^b	97	0 (0)
Child needing referral was referred	8	45.4 (4)
Advice and counselling given to caregiver of sick child		
Caregiver of sick child was advised to give extra fluids and continue feeding ^b	268	5.3 (12)
Child prescribed oral medication: caregiver was advised on how to administer the treatment	184	9.0 (13)
Sick children whose caretaker was advised on circumstances indicating need to return immediately to health care facility ^b	274	0.6 (1)
Child with very low weight whose caregiver received correct counselling ^b	47	2.1 (1)
Caregiver of child prescribed oral rehydration solution, and/or an oral antibiotic knows how to give the treatment	188	9.4 (16)

^a The adult (usually parent) who accompanied the sick child to the health facility.

^b IMCI-specific indicator.

^c Means and ranges are provided for the composite indices.

Note: Percentages are weighted estimates whereas the numbers (*n*) are actual, and therefore will not exactly correspond.

The health providers classified the child's illness correctly for only one in five children (Table 4). As expected, almost none of the children whose weights were very low were correctly classified.

Treatment of the sick child

Treatment practices were generally poor (Table 4). None of the children presenting with anaemia was treated correctly and only 13% of children with pneumonia were treated correctly. Among the children who needed an oral antibiotic, 81% received one (data not shown) and 11% received a correct prescription for an appropriate antibiotic at the correct dose. About one in three (39%) of children who did not need an antibiotic left the facilities without one; over half of the prescriptions for antibiotics were unnecessary. None of the children received the first dose of their treatment at the facility. Four of eight very sick children (45%, weighted estimate) who needed a referral based on assessment by the gold standard surveyor were also identified as needing referral by the health worker.

Advice and counselling given to caregiver

The health providers in these facilities made little effort to explain the necessary home treatment or to counsel the caregiver (Table 4). One in every 20 caregivers was advised to give extra fluids and to continue feeding the sick child, and this finding held true even among the subset of children who presented with diarrhoea (data not shown). Fewer than one in 10 caregivers of children prescribed an oral medication were advised on how to administer the treatment. None of the caregivers of children who were prescribed oral rehydration solution, and/or an oral antibiotic could report correctly, as they left the facility, on how to give the treatment to the child at home. Only one of 274 caregivers was advised by the health provider about signs indicating a need for immediate return to the health facility.

Facility preparedness

The facilities were not well equipped and supported (Table 5). Although relatively high proportions of health facilities were found to have the essential oral treatments for moderately

Table 5. Measures of health facility preparedness for the management of sick children in 19 first-level health facilities in Matlab *thana*, Bangladesh, 2000

Indicator	% (n) or mean for whom task was performed
Index of availability of essential oral treatments (mean) (range 0–100) ^a	69.9 ^b
Health facility has essential equipment and materials ^a	0 (0)
Health facility had received at least one supervisory visit that included observation of case management during the previous 6 months	0 (0)

^a IMCI-specific indicator.

^b Means and ranges are provided for the composite indices.

Note: Percentages are weighted estimates whereas the numbers (n) are actual, and therefore will not exactly correspond.

ill children, the injectable drugs needed to treat more severe disease were not generally available. None of the facilities had received a supervisory visit that had included observation of case management in the previous 6 months.

Comparing performance by provider type

Table 6 shows the comparison of the performance of the MAs/SACMOs or FWVs who together saw more than 90% of children in the survey using the subset of indicators performed correctly for at least 5% of children (see Table 4). FWVs performed marginally better than MAs/SACMOs in classifying illnesses correctly, and significantly better than MAs/SACMOs in the rational prescription of antibiotics and on two measures of provision of correct advice to caregivers. MAs/SACMOs showed a tendency to conduct a more complete assessment of the child by checking for cough, diarrhoea and fever, but the difference was not statistically significant. No differences were found between the two types of health-care providers in the performance of other case-management tasks, possibly because too few observations for FWVs were made for some indicators. For the four indicators that showed large but non-significant differences between providers, two favoured the MAs/SACMOs and two the FWVs.

Discussion

The present study was an observation-based assessment of the quality of care provided to sick children in all first-level government health facilities in an area of Bangladesh. Government-provided health services in the study area were similar to those provided throughout the country (14). Low utilization of these services because of a preference for local private sources of care is common in all areas of Bangladesh (19). The validity of our findings on provider performance was likely to be affected by the presence of an observer (20), but given the overall low performance levels this potential bias is not considered to have serious implications for the interpretation and use of the survey findings.

Sick children are receiving inadequate care

The findings indicate that the current quality of care offered to sick children in these facilities is very poor, even when IMCI-specific items are excluded from the assessment. Sick children are incompletely assessed, and their illnesses are erroneously or

incompletely classified. The majority of children receive incorrect treatment. Antibiotics are frequently overused and sometimes underused. Severely ill children are not always referred to higher levels of care by a health worker.

Some of the facility supports for correct case-management of sick children are present in these facilities: a high proportion had the essential oral drugs available to manage all but the most severe diseases. However, most facilities lacked at least some items of essential equipment and few had the injectable drugs needed to manage severe illness. In summary, inadequacies in the case management of less severe disease cannot be attributed to the lack of the necessary supplies and equipment, and should therefore benefit from IMCI interventions designed to improve performance of health workers.

Comorbidity among children presenting for care

Two of the assumptions underlying the IMCI strategy are that:

- children are often sick with more than one illness at the same time; and
- disease-specific programmes such as those developed in the past for tackling diarrhoea and pneumonia were not designed to handle children with multiple illnesses appropriately and fully (21).

The findings of the present study provide evidence that supports these assumptions. Most sick children presented at the facilities with several concurrent illnesses. This is consistent with findings from the baseline household survey conducted among the same population (S.E. Arifeen, personal communication), and underlines the relevance of IMCI to child health needs in Bangladesh.

Although all but one of the children with several concurrent illnesses presented with an IMCI classification, about one-third also presented with a condition not included in the Bangladesh IMCI guidelines — most often with skin infections. Future research should investigate the mix of presenting symptoms and its relationship to morbidity in children aged under 5 years in specific settings to help in the adaptation of the generic IMCI guidelines, in a way similar to that used to determine the distribution of mortality by cause (1). Our assumption, which would need to be tested, is that if health workers are trained to address the symptoms that are most disturbing to caregivers, utilization of the services would increase for both life-threatening and less severe conditions.

Uptake of study findings by the Government of Bangladesh

The existing policies of the Government of Bangladesh give priority for training first to physicians, and second to nurses and MAs/SACMOs. At the time of our study the government's plans did not include IMCI training for FWVs or pharmacists. This study showed that one-third of the sick children were being managed by FWVs who were ineligible for IMCI training and that these FWVs performed as well as, if not better than, the MAs/SACMOs. The results suggested that the plans of the Government of Bangladesh for IMCI case-management training should be expanded to include all the major categories of health-care providers who were actually managing sick children in first-level health facilities. In response, the Government of Bangladesh agreed in principle to offer IMCI training for FWVs to increase the population-level impact of IMCI. The government is also promoting and supporting the implementation of IMCI in the health facilities of nongovernmental organizations.

Table 6. Performance of selected case-management tasks by cadre of health-care provider in Matlab *thana*, Bangladesh, 2000

Indicator	Medical assistants/sub-assistant community medical officers				Family welfare visitors				P-value
	n ^a	(n) ^b	%	95% CI ^c	n ^a	(n) ^b	%	95% CI	
Child checked for the presence of cough, diarrhoea and fever	184	(35)	18.8	11.1–29.8	94	(8)	7.5	2.5–20.2	0.096
Child checked for other problems	79	(8)	8.8	3.2–21.9	33	(6)	18.4	7.1–40.0	0.249
Child was correctly classified	179	(30)	15.3	9.0–24.8	90	(26)	29.8	17.8–45.4	0.058
Child with pneumonia correctly treated	45	(6)	13.8	4.2–36.5	18	(1)	5.4	0.5–39.1	0.426
Child needing an oral antibiotic was prescribed the drug correctly	74	(7)	9.1	2.9–25.2	33	(4)	14.5	3.0–48.6	0.601
Child not needing antibiotics left the facility without antibiotic	105	(35)	30.5	21.0–42.0	57	(33)	54.4	36.9–70.9	0.025
Caregiver of sick child was advised on how to give extra fluids and continue feeding ^d	179	(4)	2.0	0.4–8.5	84	(8)	12.7	3.7–35.3	0.029
Child prescribed oral medication whose caregiver was advised on how to administer treatment	134	(4)	3.5	1.4–8.5	45	(9)	26.3	9.3–55.2	0.002
	n	Mean	95% CI		n	Mean	9.5% CI		
Index of integrated assessment (mean) (range 0–100) ^{d, e}	184	22.4	18.2–26.6		94	23.8	17.9–29.7		0.689

^a N = eligible sample.

^b n = numerator.

^c CI = confidence interval.

^d IMCI-specific indicator.

^e Means and ranges are provided for the composite indices.

Note: Percentages are weighted estimates while the numbers (n) are actual, and therefore will not exactly correspond.

The finding of abysmal quality of service had the benefit of showing that there was much room for improvement. The ongoing MCE intervention study now has the opportunity to show substantial impact because the findings presented here have defined the specific challenges that need to be addressed. None of the facilities surveyed had received a supervision visit that included observation of case-management in the previous 6 months. Although facilities were found to be relatively well-supplied with oral drugs, the injectable drugs needed for managing severe illness were rarely available.

The Government of Bangladesh used the findings of this study to refine and improve their plans for the nationwide implementation of IMCI. Continued work in the study district has provided ample support for these decisions, as continuous monitoring has demonstrated increased utilization of the IMCI intervention facilities relative to the comparison facilities, and important and sustained improvements in the quality of care provided to sick children (9).

Conclusions

The study findings provide useful guidance not only for policy-makers in Bangladesh, but for those in other settings with similar epidemiological profiles and similar quality of service. The IMCI strategy provides an appropriate way forward for the Government of Bangladesh to improve facility-based services. Country-specific adaptations of the generic IMCI case-management guidelines will need to be periodically reviewed to reflect changes in the mix of presenting illnesses and causes of mortality. The cadres of health care providers targeted for IMCI case management training must include those who are

actually managing sick children in health facilities. Local-level support for correct performance of health workers, including supportive supervision, must be established and sustained.

Field-based evaluations such as this one, conducted in close collaboration with ministries of health, can provide the evidence needed to guide the development and full implementation of more effective child survival programmes. The MCE is committed to providing technically sound feedback and responding to the data needs of those responsible for making decisions on maternal and child health at the local, national and international levels. This study will be complemented by others being undertaken in Bangladesh and at other MCE sites to examine the effects of IMCI on the performance of health-care providers and families, and their costs. ■

Acknowledgements

Thanks are due to the health facility staff in the survey area for their willingness to be observed, especially prior to the introduction of IMCI. We also thank the mothers and children who participated in the study.

We wish to thank Dr Thierry Lambrechts of WHO, Geneva, for training the teams of surveyors, and for his early work on the development of the MCE indicators and health facility survey methodology. The MCE Technical Advisers, and particularly Dr Cesar Victora and Dr Joanna Schellenberg, and Dr Robert Scherpier of WHO provided important suggestions and guidance throughout the study.

This study was conducted at the ICDDR,B: Centre for Health and Population Research with support from the Bill and Melinda Gates Foundation through a grant to the WHO

Department of Child and Adolescent Health and Development and of Cooperative Agreement #388-A-00-97-00032-00 from the United States Agency for International Development. ICDDR,B acknowledges with gratitude their commitment to the Centre's research effort.

This work is a part of the Multi-Country Evaluation of IMCI Effectiveness, Cost and Impact (MCE), arranged, coordinated and funded by WHO's Department of Child and Adolescent Health and Development, and with the financial

support of the Bill and Melinda Gates Foundation and the US Agency for International Development.

Finally, our heartfelt thanks go to those working in the area of child health from the Government of Bangladesh and its partners. Their commitment to using the results of the research to improve child health plans and policies in Bangladesh was a continuing source of motivation.

Competing interests: none declared.

Résumé

Qualité des soins dispensés aux enfants de moins de cinq ans dans les installations de santé de premier niveau d'un district du Bangladesh

Objectif L'évaluation multinationale de l'efficacité, des coûts et de l'impact de la Prise en charge intégrée des maladies de l'enfance (PCIME) est une évaluation à l'échelle mondiale, destinée à déterminer l'incidence de ce programme sur les résultats sanitaires et son rapport coût-efficacité. Des évaluations de ce type sont en cours au Bangladesh, au Pérou, en Ouganda et en République-Unie de Tanzanie. La présente analyse de l'étude menée au Bangladesh vise à décrire la qualité des soins dispensés aux enfants malades de moins de 5 ans dans les installations de santé publiques de premier niveau, en vue d'informer les responsables au niveau de l'Etat de la planification des programmes sanitaires destinés aux enfants.

Méthodes Des outils génériques permettant d'évaluer les installations de santé sous l'angle de l'efficacité, des coûts et de l'impact ont été adaptés, traduits et soumis à des tests préalables. Des médecins formés à la PCIME et à l'utilisation de ces outils ont mené l'enquête dans 19 installations de santé des zones étudiées. Les données ont été collectées à partir d'observations, d'entretiens de sortie, d'inventaires et d'entretiens avec les prestataires de soins des installations.

Résultats Parmi les enfants soignés dans ces installations, peu ont bénéficié d'une évaluation complète ou d'un traitement correct et presque aucune des personnes s'occupant de ces enfants n'a reçu de conseils sur la manière de poursuivre les soins à domicile. Environ un tiers des enfants malades dont les soins ont été examinés ont été pris en charge par des employés disposant d'un niveau de formation peu élevé, pour lesquels la probabilité de classer convenablement les enfants malades et de fournir aux personnes s'occupant d'eux des informations correctes sur les soins à dispenser à domicile était néanmoins nettement plus élevée que pour le personnel soignant ayant reçu une formation supérieure.

Conclusion Ces résultats démontrent qu'il est urgent d'intervenir pour améliorer la qualité des soins dispensés aux enfants malades dans les installations de premier niveau au Bangladesh et laissent à penser qu'il pourrait être profitable d'étendre les formations à la prise en charge des cas conformément à la PCIME aux employés disposant d'un faible niveau de formation. Ils semblent indiquer également que la stratégie PCIME offre un éventail prometteur d'interventions pour faire face aux problèmes liés aux services de santé pédiatriques au Bangladesh.

Resumen

Calidad de la atención dispensada a los menores de cinco años en los centros sanitarios de primer nivel de un distrito de Bangladesh

Objetivo La evaluación multipaíses de la eficacia, el costo y el impacto de la Atención Integrada a las Enfermedades Prevalentes de la Infancia (AIEPI) es un estudio realizado a escala mundial con el fin de determinar el impacto de la AIEPI en los resultados sanitarios y su eficacia en relación con el costo. Se están llevando a cabo estudios de ese tipo en Bangladesh, Brasil, Perú, Uganda y República Unida de Tanzania. En el caso de Bangladesh, el objetivo era describir la calidad de la atención que reciben los menores de cinco años enfermos en los establecimientos sanitarios públicos de primer nivel, con el fin de aportar información al Gobierno de cara a la planificación de los programas de salud infantil.

Métodos Los instrumentos genéricos utilizados para realizar este estudio en los establecimientos sanitarios fueron adaptados, traducidos y sometidos a pruebas preliminares. Médicos con formación sobre la AIEPI y dichos instrumentos llevaron a cabo el estudio en los 19 centros sanitarios de las zonas analizadas. Los datos fueron obtenidos mediante observaciones, entrevistas a la salida, inventarios y encuentros con los dispensadores de salud.

Resultados Entre los niños enfermos que acudieron a

establecimientos para recibir atención sanitaria, fueron pocos los examinados de forma exhaustiva y tratados adecuadamente, y casi ninguno de sus cuidadores recibió instrucciones sobre la manera de seguir atendiendo al niño tras su regreso al domicilio. Más de un tercio de los casos en que se observó cómo atendían al niño enfermo fueron manejados por personal de nivel inferior que demostró una capacidad significativamente mayor que la de otros trabajadores de nivel superior para clasificar a los niños enfermos correctamente y para proporcionar al cuidador la información necesaria sobre la asistencia domiciliaria.

Conclusión Estos resultados ponen de manifiesto la necesidad urgente de emprender intervenciones de mejora de la calidad de la asistencia dispensada a los niños enfermos en los centros sanitarios de primer nivel de Bangladesh, y sugieren que puede ser positivo incluir a trabajadores de nivel inferior entre los destinatarios de la formación para el tratamiento de casos en el marco de la AIEPI. Los resultados obtenidos permiten pensar que la estrategia de la AIEPI ofrece un conjunto de intervenciones muy prometedor para hacer frente a los problemas que padecen los servicios de salud infantil de Bangladesh.

ملخص

جودة رعاية الأطفال دون خمس سنوات من العمر في المستوى الأول من المرافق الصحية في إحدى مقاطعات بنغلاديش

لدى هذه المرافق تقييماً كاملاً، أو معالجتهم معالجة صحيحة، ولم يقدم أحد من القائمين على إنشاء الرعاية الصحية أي نصيحة حول كيفية متابعة رعاية الأطفال في المنزل. وقد قام بالتدبير العلاجي لما يزيد على ثلث الأطفال المرضى الذين تمت مراقبتهم عاملون صحيون من مستوى أخفض من المستوى الذي كان يعتقد أن يكون بوسعه القيام بتصنيف صحيح للأطفال المرضى وتقديم معلومات صحيحة حول الرعاية في المنزل إلى من يقوم برعاية الطفل.

الاستنتاج: توضح هذه النتائج الحاجة الماسة للتدخلات الهادفة لتحسين جودة الرعاية المقدمة للأطفال المرضى في مرافق المستوى الأول للرعاية الصحية في بنغلاديش، وتشير إلى أن إتاحة الفرصة للعاملين الصحيين من المستوى المنخفض في التدريب على معالجة الحالات في الرعاية المتكاملة للأطفال قد يكون مفيداً. كما تشير الموجودات إلى أن استراتيجية التدبير العلاجي المتكامل للأمراض الأطفال يمثل مجموعة من التدخلات التي يُرجى الانتفاع منها في التغلب على ما تواجهه خدمات صحة الأطفال من مشكلات في بنغلاديش.

الهدف: يعد التقييم المتعدد البلدان للتدبير العلاجي المتكامل للأمراض الأطفال من حيث الفعالية والتكاليف والآثار تقييماً على المستوى العالمي لتحديد أثر مبادرة التدبير العلاجي المتكامل للأمراض الأطفال على الحصائل الصحية ومدى مردودها؛ ويجرى هذا التقييم في كل من بنغلاديش والبرازيل وبيرو وأوغندا وجمهورية تنزانيا المتحدة. ويهدف هذا التحليل الذي أجري على الدراسة البنغلاديشية إلى وصف جودة الرعاية التي تقدم للأطفال المرضى دون خمس سنوات من العمر في المستوى الأول من المرافق الصحية الحكومية، مما يجعل التخطيط لبرامج صحة الأطفال مرتكزاً على علم ودراية وإطلاع.

الطريقة: تم تكييف أدوات المسح العام للمرافق الصحية للتدبير العلاجي المتكامل للأمراض الأطفال، وترجمتها واختبارها المسبق، وقد نفذ المسح أطباء مدربون على التدبير العلاجي المتكامل للأمراض الأطفال وعلى استخدام أدوات المسح، وذلك في 19 مرفقاً صحياً في المناطق المدروسة. وقد جمعت المعطيات باستخدام المراقبة والمقابلات وقوائم الجرد والمقابلات مع القائمين على إنشاء الرعاية في المرافق الصحية.

الموجودات: لم يتم تقييم سوى عدد قليل من الأطفال الذين التمسوا الرعاية

References

- Black RE, Morris SS, Bryce J. Where and why are 10 million children dying every year? *Lancet* 2003;361:2226-34.
- Ahmed OB, Lopez AD, Inoue M. The decline in child mortality: a reappraisal. *Bulletin of the World Health Organization* 2000;78:1175-91.
- Caulfield LE, de Onis M, Blossner M, Black RE. Undernutrition as an underlying cause of child deaths associated with diarrhea, pneumonia, malaria and measles. *American Journal of Clinical Nutrition* 2004;80:193-8.
- Gove S. Integrated management of childhood illness by outpatient health providers: technical basis and overview. *Bulletin of the World Health Organization* 1997;75 Suppl 1:7-16.
- Department of Child and Adolescent Health and Development, World Health Organization. *Global Monitoring of IMCI Implementation, December 2001*. Geneva, WHO. Available from: <http://www.who.int/child-adolescent-health>
- Bryce J, Victora C, Habicht JP, Black RE, Vaughan P. The Multi-Country Evaluation of the Integrated Management of Childhood Illnesses Strategy. *American Journal of Public Health* 2004;94:406-15.
- World Health Organization. *Multi-country evaluation: integrated management of childhood illness*. Geneva, WHO. Available from: <http://www.who.int/imci-mce>
- Gouws E, Bryce J, Habicht JP, Amaral J, Pariyo G, Schellenberg JA, et al. Improving the use of antimicrobials through IMCI case management training. *Bulletin of the World Health Organization* 2004;82:509-15.
- Arifeen SE, Blum LS, Hoque DME, Chowdhury EK, Khan R, Black RE, et al. Utilization of public health facilities responds to implementation of integrated management of childhood illness: early experience from Bangladesh. *Lancet* 2004;364:1595-602.
- Amaral J, Gouws E, Bryce J, Leite AJM, Cunha ALA, Victora CG. Effect of Integrated Management of Childhood Illness (IMCI) on health worker performance in Northeast-Brazil. *Cad Saude Publica* 2004;20:209-19.
- Victora CG, Hanson K, Bryce J, Vaughan JP. Achieving universal coverage with health interventions. *Lancet* 2004;364:1541-8.
- Bryce J, El Arifeen S, Pariyo G, Lanata C, Gwatkin D, Habicht JP and the Multi-Country Evaluation of IMCI Study Group. Reducing child mortality: Can public health deliver? *Lancet* 2003;362:159-64.
- International Centre for Diarrhoeal Diseases Research, Bangladesh (ICDDR,B): Centre for Health and Population Research. *Health and Demographic Surveillance System-Matlab, v.34. Registration of health and demographic events 2001*. Dhaka: ICDDR,B; 2003.
- Haider SJ, Streatfield K, Karim MA. *Comprehensive guidebook to the Bangladesh Family Planning-MCH Program*. Dhaka: Research Evaluation Associates for Development, The Population Council-Bangladesh, Ministry of Health and Family Welfare; 1995.
- World Health Organization. *Health Facility Survey for Integrated Child Health Services (IMCI). Final draft, March 2002*. Geneva: WHO. Available from: <http://www.who.int/child-adolescent-health>
- Gouws E, Bryce J, Schellenberg J, Pariyo G, Habicht JP. Measuring the quality of child health care at first level facilities. *Social Science and Medicine*. In press.
- Epi Info 6.0*. Available from: <http://www.cdc.gov/epo/epi/epiinfo.htm>.
- Statacorp. *Stata Statistical Software: Release 7.0*. College Station, TX: Stata Corporation; 2001.
- Amin R, Chowdhury SA, Kamal GM, Chowdhury J. Community health services and health care utilization in rural Bangladesh. *Social Science and Medicine*, 1989;29:1343-9.
- Anker M, Guidotti RJ, Oreszyna S, Sapirie SA, Thuriaux MC. Rapid evaluation methods (REM) of health services performance: methodological observations. *Bulletin of the World Health Organization*, 1993;71:15-21.
- Tulloch J. Integrated approach to child health in developing countries. *Lancet*, 1999;354 Suppl 2:16-20.