

Why first-level health workers fail to follow guidelines for managing severe disease in children in the Coast Region, the United Republic of Tanzania

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Objective To determine why health workers fail to follow integrated management of childhood illness (IMCI) guidelines for severely ill children at first-level outpatient health facilities in rural areas of the United Republic of Tanzania.

Methods Retrospective and prospective case reviews of severely ill children aged < 5 years were conducted at health facilities in four districts. We ascertained treatment and examined the characteristics associated with referral, conducted follow-up interviews with parents of severely ill children, and gave health workers questionnaires and interviews.

Findings In total, 502 cases were reviewed at 62 facilities. Treatment with antimalarials and antibiotics was consistent with the diagnosis given by health workers. However, of 240 children classified as having “very severe febrile disease”, none received all IMCI-recommended therapies, and only 25% of severely ill children were referred. Lethargy and anaemia diagnoses were independently associated with referral. Most (91%) health workers indicated that certain severe conditions can be managed without referral.

Conclusion The health workers surveyed rarely adhered to IMCI treatment and referral guidelines for children with severe illness. They administered therapy based on narrow diagnoses rather than IMCI classifications, disagreed with referral guidelines and often considered referral unnecessary. To improve implementation of IMCI, attention should focus on the reasons for health worker non-adherence.

الترجمة العربية لهذه الخلاصة في نهاية النص الكامل لهذه المقالة. . الترجمة الفرنسية من هذا الملخص تظهر في نهاية المقال. Al final del artículo se facilita una traducción al español.

Introduction

Most of the 10 million childhood deaths occurring yearly take place in developing countries, where first-level outpatient health facilities are the primary source of health care.^{1,2} WHO's integrated management of childhood illness (IMCI) strategy provides evidence-based guidelines for managing ill children in health facilities lacking sophisticated diagnostic equipment. Health workers use IMCI guidelines to assess children's condition and classify illness on the basis of simple clinical symptoms and signs.³ The classifications guide treatment and referral.

Adopted in over 100 countries, IMCI improves health worker performance⁴⁻¹⁰ and may lower mortality.¹¹ However, research has shown that many health workers do not adhere to IMCI guidelines,^{10,12-16} particularly for the management of severe illness.^{7,16,17} Adherence is difficult to study, and the reasons that health workers do not follow IMCI guidelines are unclear.^{10,12,18-21} Decision-making may be shaped by economic, patient-related, training, professional and organizational factors.^{20,22,23} Understanding non-adherence will help programmes improve IMCI implementation.

We assessed the reasons for non-adherence to IMCI guidelines for the case management of severely ill children at

first-level health facilities. To understand how decisions about treatment and referral were made, we evaluated the management of children health workers considered severely ill.

Methods

Setting

The aim was to prepare for an intervention to improve survival among severely ill children in the Coast Region of the United Republic of Tanzania. With the assistance of the Child Health Unit in the Ministry of Health and Social Welfare (MHSW), we selected four contiguous districts in the Coast Region – Kisarawe, Kibaha urban, Kibaha rural and the south-western portion of Bagamoyo – because they were among the first to implement IMCI (in 2000) and because relatively good roads allow referral care and limit supply shortages (Fig. 1). The combined population is approximately 314 000.²⁴ The site is primarily rural but includes periurban areas. Malaria is endemic; transmission occurs throughout the year. Mortality among children aged < 5 years is 126 per 1000 live births.²⁵ For administrative and surveillance purposes, health facilities report the number of patient visits each month on forms precoded with specific diagnoses (e.g. malaria) through the Health Management Information System (HMIS).

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We included all functioning first-level health facilities (formal, non-hospital setting) who attend to children aged < 5 years. The MHSW, district and regional medical officers, community leaders and health workers identified 64 health facilities, two of which were inaccessible due to flooding (Fig. 1). We distinguished dispensaries (one or two-room clinics) from health centres (larger facilities with overnight beds).

Study design and data collection

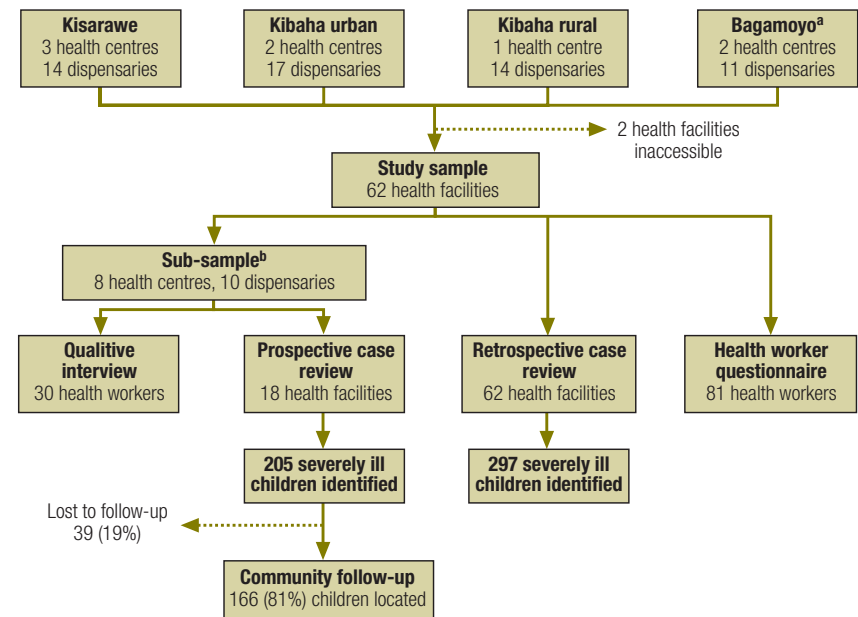
We conducted retrospective and prospective case reviews of severely ill children, performed community follow-up, and administered questionnaires to the parents of these children. We also administered questionnaires and conducted qualitative interviews among health workers (Fig. 1).

Case review

We conducted retrospective case reviews at all health facilities during 6 weeks in October and November 2006. During visits conducted without advance notice between 09:00 and 13:00 on weekdays, we explained the purpose of the study and invited all health workers caring for children to participate. Using the routine clinical register, health workers identified up to five recent patients aged < 5 years whom they had attended and believed had experienced severe, potentially life-threatening illness. Health worker recall was prompted with a list of IMCI danger signs: loss of consciousness; lethargy; convulsions; inability to drink, eat or nurse; and/or the vomiting of everything consumed. We abstracted age, diagnoses, treatment and referral data from the register and used an open-ended question to prompt health workers' recall of presenting clinical features. We also inventoried supplies and medications needed to implement IMCI.^{26,27}

We conducted prospective case reviews during 8 weeks between November 2006 and January 2007 in all eight health centres and 10 dispensaries that were selected based on a probability proportionate to the number of children attended in 2005. Health workers identified all children considered severely ill during the prospective study period and entered demographics, age, diagnosis, treatment and referral data into a study register. To minimize register entries and maintain congruence with retro-

Fig. 1. Health districts, health facilities and study design in study of health worker management of childhood illness, the United Republic of Tanzania, 2006



^a Only south-western portion of Bagamoyo district included.

^b All health centres and 10 dispensaries selected with probability proportionate to utilization by children < 5 years in 2005.

spective case reviews, they also recalled the presenting clinical features during weekly visits (information is missing for some children because some health workers were not located).

Children with fever and at least one IMCI danger sign were assigned the IMCI classification "very severe febrile disease". The IMCI-recommended treatment for such children includes parenteral quinine and a parenteral broad-spectrum antibiotic (chloramphenicol alone, or benzylpenicillin with gentamicin). Hospital referral is also indicated.

In retrospective case reviews, information on health workers and children was linked; treatment and referral by health workers (whether or not trained in IMCI) were compared. In prospective reviews, we did not record a health worker's identity to reduce the likelihood of eliciting socially desirable but false responses. Analysis was conducted using SUDAAN, version 9.0 (RTI International, Research Triangle Park, NC, United States of America), accounting for clustering at the health facility and health worker levels. We compared proportions using the χ^2 test. $P < 0.05$ was considered significant.

Follow-up of severely ill children

Seven to 14 days after children who were prospectively identified visited a

health facility, we made three attempts to locate their parents or guardians. After obtaining informed consent, we administered a standardized questionnaire to parents detailing the child's post-visit care and current status. Parents ranked different barriers to seeking hospital-based care as "not important", "important" or "very important". Those whose children had visited a hospital recalled travel costs and time, and the rest merely estimated them.

Using a principal-component analysis approach previously validated in adjacent health districts, we established a relative index of household socioeconomic status based on 23 questions assessing household asset ownership.^{28,29} In this technique, orthogonal linear combinations of household asset variables are extracted to generate a normally distributed index with a mean of zero that reflects long-term household wealth. This allows for discrimination between households by socioeconomic status. In prospective case review, we compared the prevalence of demographic and clinical characteristics among referred and non-referred children using multivariate logistic regression to calculate adjusted odds ratios (ORs) and 95% confidence intervals (CIs). Factors predictive of referral at the $P < 0.1$ level in univariate analyses were included in the multivariate model,

Table 1. Characteristics of health workers caring for severely ill children ($n=81$) aged < 5 years at health facilities in the United Republic of Tanzania, 2006

Characteristics	Total $n=81$		Governmental				Nongovernmental			
			Health centres $n=11$		Dispensaries $n=48$		Health centres $n=1$		Dispensaries $n=21$	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Professional training										
Medical officer or assistant medical officer	6	7	0	0	1	2	0	0	5	24
Clinical officer	59	73	9	82	38	79	1	100	11	52
Nurse midwife, nurse auxiliary, public health nurse or other	16	20	2	18	9	19	0	0	5	24
At least 2 years of clinical experience	68	84	7	64	39	81	1	100	21	100
In-service training										
IMCI	42	52	6	55	32	67	0	0	4	19
Malaria	58	72	7	64	39	83	1	100	11	58
Acute respiratory infection	14	17	1	9	8	17	0	0	5	26
Diarrhoea	11	14	1	9	5	11	0	0	5	26
Supervision and practice patterns										
Supervisory visit in past 6 months	21	26	5	45	15	32	0	0	1	5
Live at health facility	41	51	5	45	26	56	0	0	7	33
Attend to children on nights and weekends	57	70	8	73	36	78	1	100	12	57

IMCI, integrated management of childhood illness.

which used the PROC RLOGIST procedure based on generalized estimating equations. Models constructed with both unweighted data and data stratified by health facility type produced similar results; only the unweighted model is presented here.

Interviews in health facilities

We administered a standardized questionnaire on beliefs and practices surrounding the management of severe illnesses to 81 of 82 health workers. We also conducted qualitative interviews with 30 health workers in 18 facilities to gain data on complex multifaceted processes of decision-making, which are difficult to measure quantitatively.^{30,31} Qualitative research was independently designed and directed by an experienced social scientist (EM).

Qualitative and quantitative fieldwork was conducted concurrently and compared after completion of independent analyses. Interviews were conducted in Swahili by two experienced research assistants using a semi-structured interview guide, with probes for clarification. Interviews lasted about 45 minutes and were recorded, transcribed and systematically coded for content analysis.^{31,32} As additional data were reviewed, patterns emerged

and codes were progressively expanded and refined. When further review did not generate additional hypotheses, the coding structure was finalized and applied to all transcripts, which were reviewed and coded by a single investigator (EM).

The institutional review boards of the Ifakara Health Research and Development Centre and of the Centers for Disease Control and Prevention (United States of America) approved this study.

Results

Health facilities

Of the health facilities in this study, 74% were governmental. The WHO-recommended pre-referral parenteral medications that were available at governmental and nongovernmental health facilities, respectively, were benzylpenicillin (93% and 75%), chloramphenicol (86% and 30%), gentamicin (2% and 65%) and quinine (76% and 90%). Supplies were similar at dispensaries and health centres.

Health workers

Fifty-nine (73%) health workers were clinical officers (2 years of post-secondary training) (Table 1). Health workers at governmental health facilities were

more likely to have received IMCI training than those in nongovernmental health facilities (64% versus 18%, respectively; $P = 0.0001$). Overall, 52% of health workers reported completing an 11-day IMCI training course. Health workers often worked long hours in isolated settings; 70% of them provided emergency care on a 24-hour basis and 52% lived at the health facility. Only 26% reported a supervisory visit within the previous 6 months.

Case review

Retrospective and prospective case reviews were completed for 297 and 205 severely ill children, respectively; results are combined, except where indicated (Table 2). Health workers recorded only specific diagnoses (not IMCI classifications) in registers. Nearly all children (478; 96%) were diagnosed with severe malaria or severe pneumonia; only 43 (9%) were diagnosed with both. Health workers consistently treated the specific diagnosis they assigned; occasionally they treated other conditions. Of 349 children diagnosed with severe malaria only, 333 (95%) received an antimalarial and 41 (12%) received an antibiotic; of 86 children diagnosed with severe pneumonia only, 9 (10%) received an antimalarial and all received

an antibiotic; of 43 children diagnosed with both severe pneumonia and severe malaria, 38 (88%) received an antimalarial and all received an antibiotic.

Of 409 severely ill children with full presenting clinical information, 240 (59%) met IMCI criteria for very severe febrile disease (Table 3). None received IMCI-appropriate therapy (parenteral broad-spectrum antibiotic and parenteral quinine). Of 47 (20%) who were given an antibiotic, 25 (53%) received benzylpenicillin, 1 (2%) received both benzylpenicillin and parenteral chloramphenicol, and 21 (45%) received either oral amoxicillin or co-trimoxazole. In retrospective case review, children treated by IMCI-trained health workers were more likely to receive both parenteral benzylpenicillin and quinine than those treated by non-IMCI-trained health workers (11% versus 0%, respectively; $P < 0.001$).

Of 502 severely ill children in retrospective and prospective case review, 123 (25%) were referred for further treatment. In retrospective case review where provider data was available, children treated by IMCI-trained workers were more likely to be referred than those treated by health workers not trained in IMCI (38% versus 16%, respectively; $P = 0.003$) (Fig. 2). IMCI training remained predictive of referral after adjustment for health workers' professional training (adjusted OR: 3.0; 95% CI: 1.7–5.4).

Community follow-up

Of 205 children in the prospective case review, 38 (19%) were referred to the hospital (Fig. 3). Among the 166 located through community follow-up, referred children were more likely to reach the hospital than non-referred children: 61% (17/28) versus 2% (3/138), respectively; $P < 0.01$. Referred children were more likely to die than non-referred children (2% versus 18%, respectively; $P < 0.001$). Overall, 8 (5%) children died.

Transportation costs and availability were the barriers most frequently identified as "very important" by parents of children who did not reach the hospital (40% and 21%, respectively), yet transportation time to the hospital was similar among referred and non-referred groups (mean: 2.3 and 2.1 hours respectively, t -test result not significant). Travel costs were comparable as well (mean: 5500

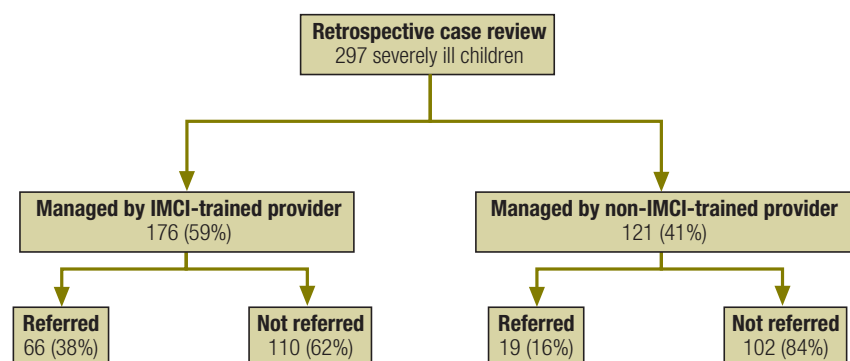
Table 2. Characteristics of severely ill children aged < 5 years in retrospective and prospective case review, the United Republic of Tanzania, 2006

Characteristics	Retrospective case review <i>n</i> = 297		Prospective case review <i>n</i> = 205		<i>P</i> -value
	<i>n</i>	%	<i>n</i>	%	
Female	128	43	85	41	0.66
Age (months)					
0–2	3	1	6	3	0.11
2–59	294	98	199	97	0.11
IMCI danger signs^a					
Vomiting everything	121	41	46	41	0.97
Convulsions	66	22	28	25	0.72
Lethargy or unconsciousness	75	25	44	39	0.032
Not eating	65	22	12	11	0.057
Any danger sign	234	79	88	79	0.96
Other presenting signs and symptoms^a					
Fever	196	66	91	82	0.037
Fast breathing or difficulty breathing	67	23	17	15	0.13
Cough	60	20	27	24	0.46
Pallor	22	7	14	13	0.19
Diarrhoea	22	7	8	7	0.93
Dehydration	1	1	1	1	0.57
Measles	1	1	0	0	0.33
Abdominal pain	0	0	3	3	0.17
Kwashiorkor	0	0	1	1	0.30
Health-worker diagnosis					
Severe malaria	201	68	148	72	0.28
Severe pneumonia	63	21	23	11	0.013
Both severe malaria and severe pneumonia	21	7	22	11	0.33
Anaemia	23	8	28	14	0.15
Diarrhoea	5	2	4	2	0.76
Dehydration	3	1	4	2	0.45
Burn	0	0	2	1	0.30
Varicella	0	0	1	0.5	0.32
Measles	1	0.3	1	0.5	0.79

IMCI, integrated management of childhood illness.

^a Presenting clinical signs and symptoms were not available for 94 children in the prospective registry because the attending health worker was not present for the interview on the day the register was collected.

Fig. 2. Referral and health worker IMCI training in retrospective case review of severely ill children aged < 5 years, the United Republic of Tanzania, 2006



IMCI, integrated management of childhood illness.

Table 3. Medication administered to children with very severe febrile disease ($n=240$) in a retrospective and prospective case review according to health worker diagnosis, the United Republic of Tanzania, 2006^a

Health-worker diagnosis	Any antibiotic		Any parenteral antibiotic		Parenteral broad-spectrum antibiotic ^b		Any antimalarial		Parenteral quinine		Both any antibiotic and any antimalarial	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Severe malaria only ($n=217$)	25	12	7	3	0	0	209	96	183	84	23	11
Severe pneumonia only ($n=9$)	9	100	9	100	1	11	2	22	0	0	2	22
Both severe malaria and severe pneumonia ($n=13$)	13	100	10	77	0	0	12	93	9	69	12	92
All health-worker diagnoses ^c ($n=240$)	47	20	26	11	1	<1	224	93	193	80	37	15

^a According to integrated management of childhood illness (IMCI) guidelines, the correct treatment for children with very severe febrile disease is parenteral quinine with a parenteral broad-spectrum antibiotic regimen.

^b A parenteral broad-spectrum antibiotic is defined as chloramphenicol alone or benzylpenicillin plus gentamicin.

^c One child with very severe febrile disease was diagnosed by health workers as having anaemia only is included in this total.

and 4000 United Republic of Tanzania shillings respectively, *t*-test results not significant). “Waiting lines at the hospital”, “cost of treatment at the hospital” and “poor quality of service at the hospital” were considered “very important” by 17%, 13% and 9%, respectively. Lack of childcare for other children and need for husband’s authorization were each considered “very important” barriers by 1%.

The socioeconomic status index and the type of health facility where children were seen were not associated with referral in the univariate analysis (Table 4). In the multivariate analysis, two factors were associated with referral: diagnosis of severe anaemia (OR: 114; 95% CI: 12–1049) and lethargy or unconsciousness (OR: 4.8; 95% CI: 1.2–19). Although strongly associated with referral, a fatal outcome was not included in the multivariate analysis of predictors because it occurred after the fact.

Health worker interviews

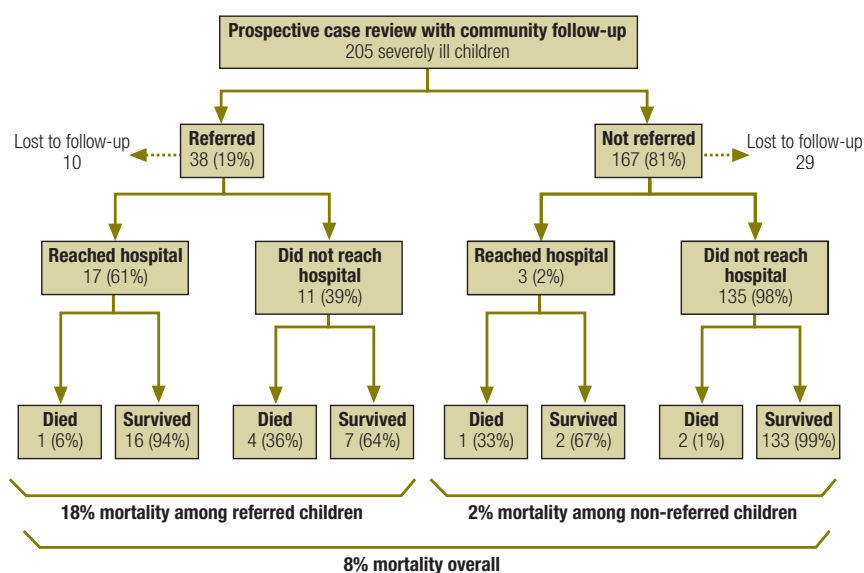
Among health workers, 71% considered reaching the hospital “easy” during the daytime, and 78% believed that referred children were likely to reach the hospital. Nonetheless, 64% reported that they commonly manage severely ill children without referral, and 91% agreed that “certain severe illnesses can be safely managed without referral”. Asked which conditions can be managed without referral, 68% responded

severe malaria and 57% indicated severe pneumonia. Some health workers (24%) reported having withheld hospital referral because the parent of the child in question could not feasibly transport the child. No health workers reported withholding referral because they feared the parents would consider them incompetent. Only 5% reported ever withholding referral because the child’s condition appeared hopeless and further care seemed futile.

In qualitative interviews, health workers suggested that benzylpenicillin is fast-acting and effective, but chloramphenicol is unacceptably toxic. Barring

medication shortages, health workers expressed confidence in their ability to safely manage severely ill children who do not have severe anaemia, severe dehydration or difficulty breathing. Health workers reported referring children to the hospital primarily for specific therapies not available at their health facility, such as blood transfusion, intravenous fluids or oxygen. They were confident in the quality of referral facilities but considered transportation costs an important barrier that kept children from actually receiving treatment at these facilities. They also reported that they frequently negoti-

Fig. 3. Referral and mortality in prospective case review of severely ill children aged < 5 years, the United Republic of Tanzania, 2006



ated with parents of severely ill children about whether to refer them or to provide ongoing care through repeated visits to the health facility.

Discussion

Health workers in the four Tanzanian districts studied rarely adhered to IMCI guidelines for the treatment and referral of severely ill children. They generally treated children according to a single, narrow diagnosis rather than a broad IMCI syndromic classification, and they rarely administered broad-spectrum antibiotics or referred severely ill children for hospital treatment.

Treatment based on a single narrow diagnosis

Health workers consistently administered rational therapy for the narrow diagnosis they made but rarely diagnosed or treated more than one condition. The imprecision of clinical diagnosis in similar settings is well established,^{33,34} and health workers' confidence in their diagnostic accuracy probably contributes to missed opportunities to provide potentially life-saving therapies.

The narrow diagnoses used by health workers are the same as those administratively required for HMIS reporting. Rowe et al. have suggested that discrepancies between the diagnoses required for HMIS reporting and IMCI classifications may confuse health workers and contribute to poor adherence to IMCI guidelines.³⁵ Our findings support this hypothesis. A quality-improvement programme in these districts will pilot an IMCI-based register in which both HMIS diagnoses and IMCI classifications are recorded.

Reluctance to administer chloramphenicol

Health workers often failed to give antibiotics when indicated and almost never administered recommended broad-spectrum antibiotic regimens. They considered chloramphenicol "too toxic" for use in children; despite its availability, chloramphenicol was administered to only one of 240 children with IMCI "very severe disease". Instead, benzylpenicillin was the parenteral antibiotic of choice, despite its inadequate activity against important causes of severe illness (particularly Gram-negative

Table 4. **Univariate analysis of factors associated with referral among children located in community follow-up (n = 166), the United Republic of Tanzania, 2006**

Factors	Referred n=28		Not referred n=138		OR	95% CI	P-value
	n	%	n	%			
Female	10	36	57	41	0.8	0.3–1.8	0.5
Less than 2 months	1	4	4	3	1.4	0.2–13.4	0.8
IMCI danger signs							
Vomiting everything	6	38	34	40	0.9	0.3–2.4	0.8
Convulsions	4	25	23	27	0.9	0.3–2.8	0.8
Lethargic or unconscious ^a	11	69	25	29	5.7	2.1–15	0.002
Not eating	1	6	10	12	0.5	0.1–4.0	0.5
HMIS diagnosis							
Severe malaria only	24	86	98	72	2.4	1.1–5.4	0.03
Severe pneumonia only	1	4	18	13	4.0	<0.1–2.1	0.2
Both severe malaria and severe pneumonia	1	4	15	11	0.4	<0.1–2.8	0.3
Anaemia ^a	20	71	3	2	113	27–463	<0.0001
SES-related factors							
SES index in the poorest third	12	43	44	32	1.6	0.7–3.4	0.2
Parent registered for a community health fund	5	19	11	8	2.1	0.5–10	0.3
Setting							
Seen at a government health facility	26	93	125	91	1.3	0.1–12.8	0.8
Seen at a dispensary	14	50	55	40	1.4	0.5–4.0	0.5

CI, confidence interval; HMIS, Health Management Information System; IMCI, integrated management of childhood illness; OR, odds ratio; SES, socioeconomic status.

^a Association significant in multivariate analysis.

sepsis).³⁶ Health workers' reluctance to administer chloramphenicol is of particular importance in light of a recent trial demonstrating the superiority of injectable ampicillin plus gentamicin over chloramphenicol for children aged 2–59 months with very severe pneumonia in low-resource settings.³⁷ In our study, gentamicin was available in only one governmental health facility. Supplying gentamicin and encouraging its use with an injectable penicillin would probably be more efficacious and feasible than encouraging health workers in this setting to administer chloramphenicol.

Non-referral of severely ill children

Health workers overwhelmingly disagreed with the IMCI recommendation that all severely ill children be referred. Despite 5% mortality and a death rate

equivalent to or greater than the in-hospital mortality recently documented in comparable settings in Kenya and the United Republic of Tanzania,^{38,39} health workers expressed confidence in their capacity to safely manage most cases of severe malaria and severe pneumonia without referral. Non-referral occurred even though reaching the hospital appeared generally feasible. Health workers' confidence in the quality of referral care was notable given the documented low level of care provided in district-level hospitals in comparable Kenyan and Tanzanian settings.^{38,39}

Health workers' disagreement with IMCI referral guidelines represents an important challenge to IMCI implementation. Optimally, health workers would be trained and equipped to manage severe illness when referral is not feasible, to refer when possible, and

to know how to distinguish between the two circumstances. Training and supervision programmes should reinforce the necessity of referring severely ill children when possible.

Positive findings

Our findings do provide some cause for optimism. Although adherence to IMCI guidelines was low, IMCI-trained health workers were more likely than those who lacked IMCI-training to refer severely ill children, and they are more likely to administer both a parenteral antibiotic and quinine to children with IMCI “very severe disease”. Despite low adherence to guidelines, health workers did identify and refer the most severely ill children, as evidenced by the nine-fold higher mortality among referred children. Finally, although therapy was inconsistent with IMCI guidelines, it was internally consistent, rather than arbitrary or irrational (i.e. health workers did not make one diagnosis and treat for another).

This study has limitations. Ideally, a study of adherence would include a probability sample of children with confirmed IMCI severe disease classifications. This study included only children thought to be severely ill by the health workers who examined them. Adherence to IMCI treatment and referral guidelines may have been even worse for severely ill children who were not labelled as such by health workers. We cannot verify that all children had

severe disease according to IMCI classifications. Nonetheless, because they described IMCI danger signs in 79% of children without prompting and the mortality rate among children was high, we believe that health workers consistently recognized a subset of children more severely ill than others who attended the outpatient department.

Sampling techniques differed in retrospective and prospective case reviews, and this resulted in a slightly different mix of health facility types and ownership. Analyses were repeated with weighting for health facility type and ownership, but the primary findings were unchanged. Finally, this single site cannot be considered representative of a large and diverse country. While key health and socioeconomic indicators (high under-5 mortality, high malaria burden, low income and reliance on subsistence agriculture) are typical of many areas of the United Republic of Tanzania, these districts were selected because IMCI implementation was considered to be robust and referral care feasible. Our findings regarding conflicts between HMIS diagnoses and IMCI classification may be widely generalizable, but different organizational and economic constraints, as well as distance to referral care, may influence health worker adherence differently elsewhere in sub-Saharan Africa. We encourage local evaluation of reasons for health worker non-adherence. Determining which reasons are common across sites and might be more gener-

ally applicable would be of benefit to all programme countries.

Conclusions

Improving health workers' performance is critical to putting evidenced-based interventions into practice.^{18,40} The large gap between IMCI guidelines and the practices of these Tanzanian health workers parallels similar gaps found in previous studies.^{13–15,19,41} We identified three reasons contributing to health workers' non-adherence to IMCI guidelines: (i) the use of single, narrow diagnoses rather than IMCI classifications; (ii) the belief that chloramphenicol is unacceptably toxic, and (ii) the perception that referring severely ill children is often unnecessary. The United Republic of Tanzania MHSW recently initiated a reassessment of the national adaptation of IMCI guidelines; through this process, an attempt should be made to understand and overcome the reasons for health worker non-adherence. ■

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Competing interests: None declared.

Résumé

Pourquoi le personnel soignant de premier niveau n'applique-t-il pas les recommandations relatives à la prise en charge des enfants gravement malades dans la région côtière de la République-Unie de Tanzanie

Objectif Déterminer pourquoi le personnel soignant n'applique pas les recommandations relatives à la prise en charge intégrée des maladies de l'enfant (PCIME) chez les enfants gravement malades reçus dans les services de soins ambulatoires de premier niveau des zones rurales de la République-Unie de Tanzanie.

Méthodes Des études rétrospectives et prospectives de cas de maladie grave touchant des enfants de moins de 5 ans ont été menées dans des établissements de soins appartenant à quatre districts. Nous avons vérifié le traitement et examiné les éléments liés à l'orientation des malades, mené des entretiens de suivi avec les parents des enfants gravement malades et soumis les agents de santé à des questionnaires et à des entretiens.

Résultats Au total, nous avons examiné 502 cas, traités dans 62 établissements. Le traitement par des antipaludiques et des antibiotiques était cohérent avec le diagnostic porté par les agents de santé. Cependant, sur 240 enfants classés comme atteints d'une « maladie fébrile très grave », aucun n'avait reçu la totalité du

traitement recommandé par la PCIME et 25 % seulement avaient été orientés vers un établissement spécialisé. Les diagnostics de léthargie et d'anémie étaient associés indépendamment à l'orientation vers un établissement spécialisé. La plupart des soignants (91 %) ont indiqué que certaines affections graves pouvaient être prises en charge sans envoyer l'enfant dans un établissement de niveau supérieur.

Conclusion Les soignants ayant fait l'objet de l'enquête appliquaient rarement la PCIME et les recommandations d'orientation vers un établissement spécialisé pour les enfants gravement malades. Ils administraient des traitements reposant sur des diagnostics restreints plutôt que sur les classifications de la PCIME, étaient en désaccord avec les recommandations d'orientation vers un établissement spécialisé et considéraient souvent cette orientation comme inutile. Pour améliorer l'application de la PCIME, il faut s'intéresser de près aux motifs pour lesquels elle n'est pas appliquée par les soignants.

Resumen

¿Por qué los trabajadores sanitarios de primer nivel no logran seguir las directrices para el tratamiento de las enfermedades infantiles graves en la región costera de la República Unida de Tanzania?

Objetivo Determinar por qué los trabajadores sanitarios no siguen las directrices de la atención integrada a las enfermedades prevalentes de la infancia (AIEPI) para los niños gravemente enfermos en los centros ambulatorios de primer nivel en zonas rurales de la República Unida de Tanzania.

Métodos Se realizaron exámenes de casos retrospectivos y prospectivos de niños menores de cinco años gravemente enfermos en centros de salud de cuatro distritos. Evaluamos el tratamiento y examinamos las características asociadas a los casos de derivación, realizamos entrevistas de seguimiento con los padres de los niños gravemente enfermos, y sondeamos al personal sanitario mediante cuestionarios y entrevistas.

Resultados En total se examinaron 502 casos en 62 establecimientos. El tratamiento con antimaláricos y antibióticos fue coherente con el diagnóstico realizado por los trabajadores sanitarios. Sin embargo, de 240 niños clasificados como afectados

por una «enfermedad febril muy grave», ninguno recibió todas las terapias recomendadas en la AIEPI, y sólo un 25% de los niños gravemente enfermos fueron derivados. Los diagnósticos de letargo y anemia se asociaron de forma independiente a la derivación. La mayoría (91%) de los trabajadores sanitarios declararon que algunas afecciones graves podían manejarse sin necesidad de derivar al enfermo.

Conclusión Los trabajadores sanitarios encuestados rara vez se atenían a las directrices de tratamiento y derivación de la AIEPI para los niños con enfermedades graves. Administraban el tratamiento basándose en un diagnóstico rígido en lugar de emplear las clasificaciones de la AIEPI, no seguían las directrices de derivación, y a menudo consideraban que ésta era innecesaria. A fin de mejorar la aplicación de la AIEPI, habrá que centrar la atención en las razones que llevan a los trabajadores sanitarios a no seguir esas directrices.

ملخص

سبب إخفاق المستوى الأول من العاملين الصحيين في اتباع الدلائل الإرشادية الخاصة بتدبير الأمراض الوخيمة لدى الأطفال في المنطقة الساحلية بجمهورية تنزانيا المتحدة

المعالجات الموصى بها من قبل استراتيجية التدبير المتكامل لصحة الطفل، وتم إحالة 25% منهم فقط. وصاحب تشخيص النوم وفقر الدم الإحالة بشكل مستقر. وأشار غالبية العاملين الصحيين (91%) إلى إمكانية معالجة بعض الأمراض الوخيمة بدون إحالة.

الاستنتاج: نادراً ما يلتزم العاملون الصحيون بطرق المعالجة المتعلقة باستراتيجية التدبير المتكامل لصحة الطفل، والدلائل الإرشادية للإحالة في معالجة الأطفال شديدي المرض - فهم يعطون المعالجة بناءً على تشخيص ضحل بدلاً من الاعتماد على تصنيفات استراتيجية التدبير المتكامل لصحة الطفل، ويخالفون الدلائل الإرشادية للإحالة، بل يرونها في الغالب غير ضرورية. إن تحسين تنفيذ استراتيجية التدبير المتكامل لصحة الطفل يستوجب التركيز على أسباب عدم التزام العاملين الصحيين.

الهدف: تحديد سبب إخفاق العاملين الصحيين في اتباع الدلائل الإرشادية لاستراتيجية التدبير المتكامل لصحة الطفل بالنسبة للأطفال شديدي المرض في المستوى الأول من المرافق الصحية للمرضى الخارجيين في المناطق الريفية بجمهورية تنزانيا المتحدة.

الطريقة: أجرى الباحثون مراجعات استعادية واسترجاعية للأطفال شديدي المرض دون سن الخامسة في المرافق الصحية في أربع مناطق. ولقد تحقق الباحثون من المعالجة وتحروا السمات المصاحبة للإحالة، وأجروا لقاءات للمتابعة مع أولياء أمور الأطفال شديدي المرض، كما قاموا بإعطاء استبيانات وإجراء لقاءات مع العاملين الصحيين.

الموجودات: تم مراجعة 502 حالة في 62 مرفقاً. وتلاءمت المعالجة باستخدام المضادات الحيوية ومضادات الملاريا مع تشخيص العاملين الصحيين، بيد أن من بين 240 طفلاً صنفت "إصابتهم بالحمى الشديدة" لم يتلق أي منهم كل

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