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Maternal and Child Survival Program

CONCERN worldwide (U.S.) INC

OPERATIONS RESEARCH BRIEF

Semi-literate Volunteer Mothers Deliver Life-saving Care to Children in Niger's Tahoua Region

A community case management model extends access to Ministry of Health treatments for childhood malaria, diarrhea, and respiratory illnesses.

Project Overview

Location
- Tahoua Region, Niger

Population covered
- Intervention area: 112,962
- Target area: 22,436

Timeline
- July 2012-September 2014

Funding
- USAID contribution: $750,000
- Concern Worldwide contribution: $1,900,606

Implementers
- Concern Worldwide
- Tahoua District Health Team
- Community Health Workers
- Ministry of Health

Key Findings

> Virtually all caregivers of sick children (94%) who sought care from trained Mother Leaders were completely satisfied with the services they received.

> The iCCM innovation was associated with significant ($p \leq 0.05$) increases in seeking care within 24 hours of the onset of symptoms for malaria, diarrhea, or pneumonia and confirmed malaria cases treated with an effective anti-malarial drug within 24 hours.

>15 of 20 Mother Leaders achieved the benchmark for correct classification and treatment (correctly classified and treated all illnesses for at least 80% of the children consulted).

AUGUST 2015

Introduction

In many countries with high rates of child deaths, primary health care facilities do not provide sufficient access to treatment or adequate population coverage, particularly for children under the age of five suffering from common illnesses, such as diarrhea, pneumonia, malaria, and malnutrition. To address this problem, strategies that train volunteer community health workers to conduct integrated community case management (iCCM) are being implemented.[1,2] As the evidence base grows around these strategies' effectiveness, there has been a renewed interest in community health workers and efforts to expand related programs in many countries.

The Challenge

Although child mortality in Niger has been decreasing, the 2014 under-five mortality rate was high at 114 deaths per 1,000 live births.[3] In the Tahoua Region, malaria, pneumonia, diarrheal disease, and malnutrition account for 95% of all under-five mortality and 80% of under-five illnesses.[4] Though the government invests heavily in local health posts staffed by full-time community health agents (CHAs) who provide the national iCCM service package and other basic primary health services, as well as refer complicated cases to community health centers, distance to facilities and lack of health personnel are critical barriers to seeking care and receiving services. For young children to receive timely life-saving care, they need basic preventative and diagnostic services and treatment options in or near their homes.

Roufaatou Abdoulkarim, a Mother Leader trained in community case management from Niger's Dajin Tsaka village, tests a sick child for malaria. *Photo by Oumaimatou Saidou, Concern Worldwide.*

Overall Project Strategy

From 2009 to 2014, Concern Worldwide implemented the Lahiya Yara Child Survival Project in Niger's Tahoua Region in partnership with the Ministry of Health (MoH) and Tahoua District Health Team. The five-year project reached over 152,600 children under five years old and more than 146,700 women of reproductive age in two districts. The project's overall goal was to reduce child deaths through 1) strengthening the health care system at the facility level and 2) investing in intensive community-level activities to promote the adoption of key family health practices and community case management of malaria, pneumonia, and diarrhea. The project established 48 Care Groups of 507 Mother Leader volunteers who engaged their neighbors in behavior change communication about child health and illness prevention and the importance of seeking care early.[5] Mother Leaders, selected by the community, were part of the project's target population and had children under five years old. A subset of 20 low-literate Mother Leaders was selected to provide curative care in addition to routine health promotion messages, and these Mother Leaders had a minimum of four years of schooling, basic literacy skills, and a mean age of 32 years. The District Health Team trained this subset of Mother Leaders in iCCM to identify and treat children with fever, pneumonia, and diarrhea, and in the identification and referral of malnutrition. The training consisted of a four-day theoretical course on iCCM followed by a five-day clinical practicum. The project developed illustrated algorithms, counseling cards, and data collection and referral forms for low-literacy providers. Following the training, health center nurses evaluated and certified these Mother Leaders' abilities to perform iCCM. Mother Leaders were given medications and supplies to assess and treat diarrhea (zinc and oral rehydration salts) and pneumonia (timer, counting beads to assist in counting respirations, co-trimoxazole), as well as identify fever and diagnose malaria (rapid diagnostic tests, paracetamol, artemisinin-based combination therapy, gloves, a sharps box). Mother Leaders also identified malnutrition (mid-upper arm circumference band) and gave referrals for follow-up care.

Innovation Tested

This operations research study examined the innovation of incorporating the iCCM model into Care Groups, whereby trained and equipped low-literacy volunteer Mother Leaders served as frontline health providers and were linked with the formal health care system to manage child illnesses. The study examined the acceptability, effectiveness, and quality of iCCM services Mother Leaders provided.

Research Methodology

Concern Worldwide conducted the operations research study from July 2012 to September 2014 in 12 villages of the Bambeye Commune of Niger's Tahoua Health District, covering an estimated population of 22,436 that included 5,046 children under five. Selected villages were more than five kilometers from the nearest health center, without access to other health services, and demonstrated interest in promoting village health. A mixed methods design that combined a quantitative pretest-posttest household survey with endline qualitative interviews and observational measurements was used to determine 1) the acceptability of iCCM-trained Mother Leaders as frontline health providers for curative services for sick children under five years old, 2) the effectiveness of iCCM-trained Mother Leaders in promoting appropriate care-seeking and treatment for sick children, and 3) the quality of care iCCM-trained Mother Leaders provided compared to that provided by CHAs at the health posts.

The study examined the 20 iCCM-trained Care Group Mother Leaders who were certified and began providing iCCM in their villages in June 2013. It compared them with eight CHAs deployed to provide basic health services at seven rural health posts serving the same villages. The CHAs were MoH employees, had a minimum of 10 years of schooling, a mean age of 36 years, a mean 9.6 years of clinical practice, and one week of iCCM training. Nurses from six local health centers provided supportive supervision and supplies to the Mother Leaders and CHAs. The Niger MoH Ethical Review Committee approved the study.

To examine acceptability, two focus group discussions and 40 key informant interviews were conducted from June to August 2014 with seven MoH staff; 21 Care Group Mother Leaders, including 16 who were trained in iCCM; three project staff; and 19 community members, including Care Group Mother Leaders' husbands.

To assess effectiveness, a household survey that used cluster sampling was conducted with mothers of sick children aged 0 to 23 months in the intervention communities. Data collection took place before the intervention began in March 2011 (n=199) and again in June 2014 (n=220).

In addition to the household survey conducted with mothers of sick children, service utilization during the study period was assessed using data collected on the number of children seen by Care Group Mother Leaders in the intervention area who were trained in iCCM.

To determine the quality of iCCM services provided, nurses observed 135 sick child consultations conducted by the 20 trained Mother Leaders (99 total consultations observed) and eight CHAs (36 total consultations observed). This assessment focused on the provision of correct treatment and adherence to clinical guidelines. An 80% threshold for adherence to clinical guidelines was set to determine the number of trained Mother Leaders and CHAs who correctly applied the iCCM protocol to classify and treat illnesses for at least 80% of the children observed.

Findings

Acceptability. Qualitative evidence at the community level indicated strong support for the Mother Leaders and their work. Before the intervention, not all MoH staff were convinced of Mother Leaders' ability to provide quality care. By the end of the study after witnessing Mother Leaders providing iCCM, MoH staff members' opinions were unanimous and they became Mother Leader champions.

Effectiveness. In addition to seeking care sooner (Figure 1), the introduction of this community-level innovation also improved timely care through reducing travel distances and wait times. Additionally, a significantly greater number of children received a visit at their homes or were brought to the health care provider for a follow-up visit: 87% of caregivers with sick children seen by a Mother Leader versus 31% seen at the health center received a follow-up visit. With Mother Leaders introducing iCCM in the community, there was also decreased use of unqualified providers, such as traditional healers, street vendors, and pharmacies (14% to 2%) as first sources of care.

The uptake of iCCM services provided by trained Mother Leaders was high. Over the 16-month study period, the Mother Leaders saw approximately 5,949 sick children and treated 8,467 cases of presumed malaria, pneumonia, and diarrhea. They referred 2% (120 children) for immediate treatment at a health center for acute danger signs, malnutrition, and/or severe illnesses. By the end, 88% of caregivers reported using Mother Leaders as their first source of care for child illnesses.

Quality. There was no significant difference between Mother Leaders and CHAs in terms of consistently providing correct treatment for children using the iCCM protocol to diagnose, classify, and treat children (Figure 2). Treatment prescribed was consistent with the illness classification and classifications were correct, except for some difficulties diagnosing pneumonia (Mother Leaders) and, in several instances, following procedures for malaria testing and treatment of negative test results (CHAs). Immediate administration of the first dose of medication for malaria, pneumonia, and diarrhea occurred less frequently among Mother Leaders than CHAs during observed consultations.

FIGURE 1: CARE-SEEKING AND TREATMENT INDICATORS FOR CHILDREN AGED 0-23 MONTHS. Note: Household survey, baseline versus endline, * $p \leq 0.05$.

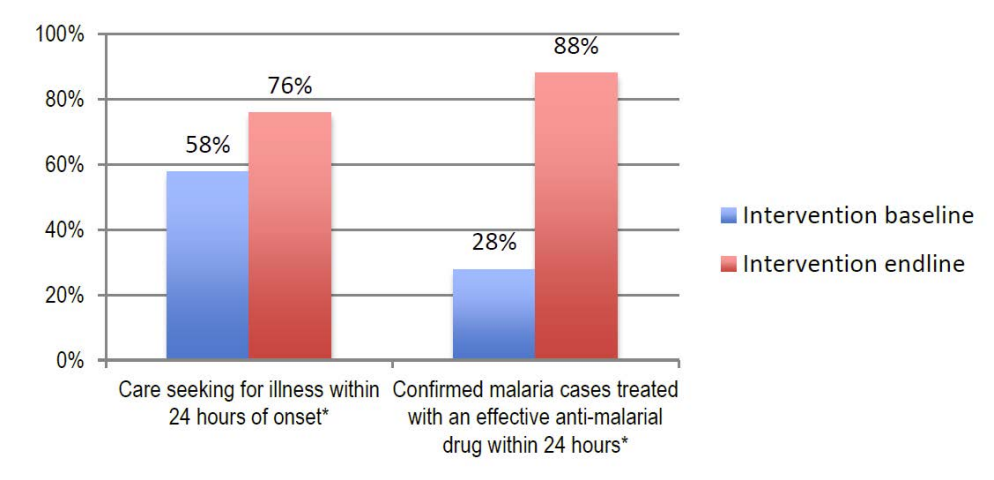
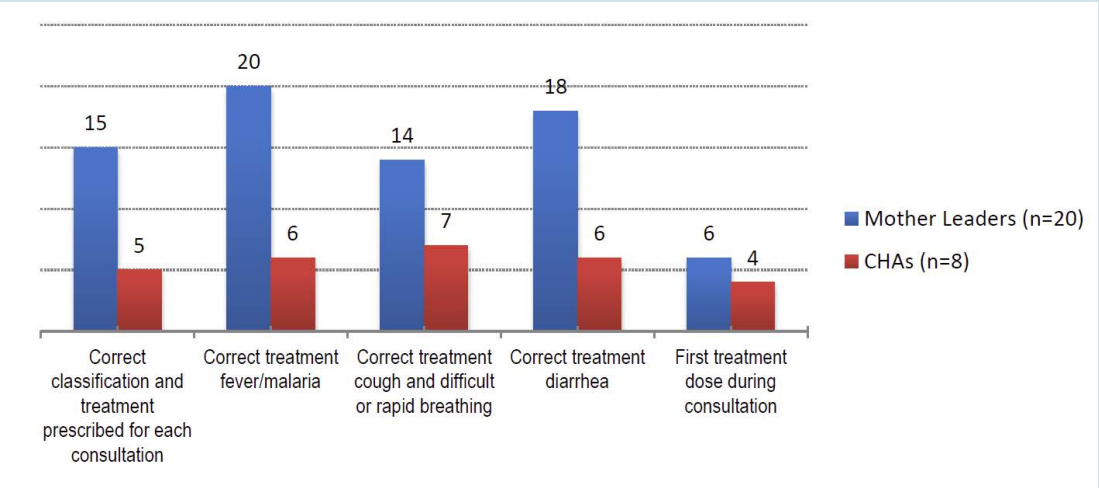


FIGURE 2: NUMBER OF MOTHER LEADERS AND CHAs PERFORMING CORRECT CLASSIFICATION AND TREATMENT FOR AT LEAST 80% OF CONSULTATIONS. Note: Nurse-observer data.



Conclusions

The study's main findings confirm that both MoH staff and communities consider iCCM services provided by low-literacy volunteer Care Group Mother Leaders an acceptable option for the initial treatment of sick children. The quality of Mother Leaders' work was comparable to that of the lowest cadre of paid facility-based community health workers in Niger: CHAs.

Community members were highly satisfied with the accessibility of services provided by trained Mother Leaders, who were consistently supported by health center staff. Significant improvements occurred in the timeliness of seeking care and treatment practices as significantly more sick children were taken for care in the first 24 hours and seeking care from untrained providers nearly vanished. Community uptake of the iCCM intervention was high and replaced health facilities as the main providers for simple cases of malaria, diarrhea, and pnemonia. A majority of trained Mother Leaders provided correct classification and performed as well as CHAs in the quality of treatment.

Study limitations include a short intervention period and a small number of both Mother Leaders and CHAs. Incorporating the iCCM model into the Care Group structure using trained volunteer Mother Leaders to deliver MoH services at the household level shows promise in being a feasible approach to improve access to initial treatment for sick children. This approach could make a meaningful contribution to child survival.

Recommendations

An iCCM model using Care Group Mother Leaders should continue to be implemented, examined, and refined as a strategy to enhance access to life-saving care and treatment in rural areas where children have increased instances of illness and death. Future studies should examine larger numbers of Care Group Mother Leaders providing iCCM over a longer time period and include a comparison group. Recommendations specifically related to the findings include the need to conduct refresher training and supervision visits focused on key case management tasks. In addition, supervision and supply chain management for iCCM commodities need to be improved and integrated into the health system so delivery is more consistent. Research should also be conducted on the acceptability, effectiveness, and quality of iCCM provided by illiterate Mother Leaders as the necessary numbers of literate women are not available in Niger and many other low- and middle-income countries.

This study's iCCM findings should inform the Niger MoH's childhood illness delivery strategy, particularly as a component of Niger's Catalytic Initiative to Save a Million Lives that aims to accelerate progress in reducing maternal and child deaths.

Use of Findings

Results will be presented to district, regional, and national health authorities. Findings will also be shared with international and national organizations working on or interested in supporting iCCM at the household level, including a forum presenting current experiences with iCCM and malaria case management in Niger.

The Lahiya Yara Child Survival Project in Tahoua District, Niger was supported by the American people through the United States Agency for International Development (USAID) through its Child Survival and Health Grants Program. The project was managed by Concern Worldwide US, Inc. under Cooperative Agreements No. GHA-A-00-09-00006 and AID-OAA-A-14-00028. The contents are the responsibility of the Maternal and Child Survival Program and the Lahiya Yara Child Survival Project and do not necessarily reflect the views of USAID or the United States Government.

[1] *Langston A, Weiss J, Landegger J, Pullum T, Morrow M, Kabadege M, Mugeni C, Sarriot E. (2014). Plausible role for CHW peer support groups in increasing care-seeking in an integrated community case management project in Rwanda: a mixed methods evaluation. Global Health: Science and Practice, 2:342-354.*

[2] *Bryce J, Victora CG, Habicht JP, Black RE, Scherpbier RW; MCE-IMCI Technical Advisors. Programmatic pathways to child survival: results of a multi-country evaluation of Integrated Management of Childhood Illness. Health Policy Plan. 2005;20, Suppl 1:i5–i17.*

[3] *The State of the World's Children Report 2015 Statistical Tables. UNICEF. Available at http://www.unicef.org/sowc2014/numbers/.*

[4] *Concern Worldwide. Lahiya Yara Child Survival Project Final Evaluation Report: Strengthening Community Health Systems In Tahoua District, Niger (2014). Available at http://www.mcsprogram.org/our-work/community-health-and-civil-society-engagement/child-survival-and-health-grants-program/.*

[5] *Concern Worldwide's Care Group model in Niger created a network of volunteer mothers, called Mother Leaders, who met bi-monthly in groups of 10-15 for training, supervision, and support. They in turn held group education sessions and conducted household visits to other mothers in the community to encourage the adoption of health behaviors and share health knowledge. For more information see http://www.caregroupinfo.org.*