USAID FROM THE AMERICAN PEOPLE | HEALTH CARE IMPROVEMENT PROJECT

Using the Collaborative Approach to Improve Pediatric Hospital Care

Background

Many programs to reduce child mortality have overlooked district hospitals, where seriously ill children are taken but quality of care is often poor.

In 2003–2004, the USAID-funded Quality Assurance Project began supporting health ministries in Nicaragua, Niger, and Tanzania to improve the quality of care for hospitalized children through national Pediatric Hospital Care Improvement (PHI) Collaboratives.

The PHI Collaboratives' purpose was to adapt WHO guidelines for the management of childhood illness to local health care settings and conditions, support the application of the adapted guidelines, and then scale up the lessons learned and improvements.

Objectives

Improve the quality of care of district hospital services for children with severe illnesses, e.g., severe diarrhea and dehydration, pneumonia, malaria, malnutrition, and HIV/AIDS

Strengthen networks of care within each hospital to triage, diagnose, and initiate appropriate treatment and follow-up of severely ill children

Spread lessons learned in improving pediatric hospital services to other facilities in the health system

Festus Kalokola, a Tanzania facilitator, clarifies a point to participants during learning session group work.

Table 1: Partners and Sites for the PHI Collaboratives

Country	QAP Partners	Initial # Sites (Start Date)	Current # Sites (September 2007)
Nicaragua	Ministry of Health, UNICEF, CARE, and Pan American Health Organization	6 regional hospitals (October 2003)	17 national and regional hospitals and 19 health centers
Niger	Ministry of Health, UNICEF, WHO; the World Bank, the European Union, and Belgium Cooperation also provide funds	9 national/regional and 8 district hospitals (August 2003)	11 national/regional and 21 district hospitals in 7 of 8 regions
Tanzania	Ministry of Health Reproductive and Child Health Services and Integrated Mangement of Childhood Illness Unit; WHO; Regional Medical Offices of Dar Es Salaam, Arusha, Manyara and Tanga regions; Council Health Management Teams in the 17 districts involved in the program; Joint Malaria Programme (Tanga Region)	5 hospitals in 3 regions (October 2004)	16 hospitals and 1 health centers in 6 of 25 mainland regions

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The Process

PHI Collaboratives (see Table 1) were implemented to meet the above objectives.

While each PHI Collaborative addressed emergency triage assessment and treatment and adaptation of WHO referral care guidelines, additional activities addressed specific problems:

- Nicaragua included an emphasis on essential newborn care, neonatal resuscitation, and prevention of mother-to-child transmission of HIV.
- Niger addressed nutritional recuperation of severely malnourished children in 15 sites.
- Tanzania emphasized improving pediatric AIDS care.

At the start of each collaborative, teams self-assessed their care and then began introducing site-specific improvements. They developed process indicators to measure compliance with standards, e.g., percentage of children triaged upon entry (number triaged divided by number entering, multiplied by 100).

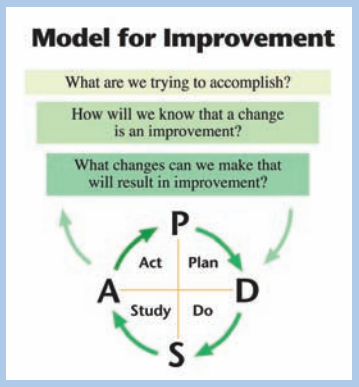
Teams met en masse at learning sessions four to six times over three years to acquire new knowledge and skills and share experiences in implementing changes. They also received coaching visits by local experts. High-performing teams provided peer coaching to slower ones.

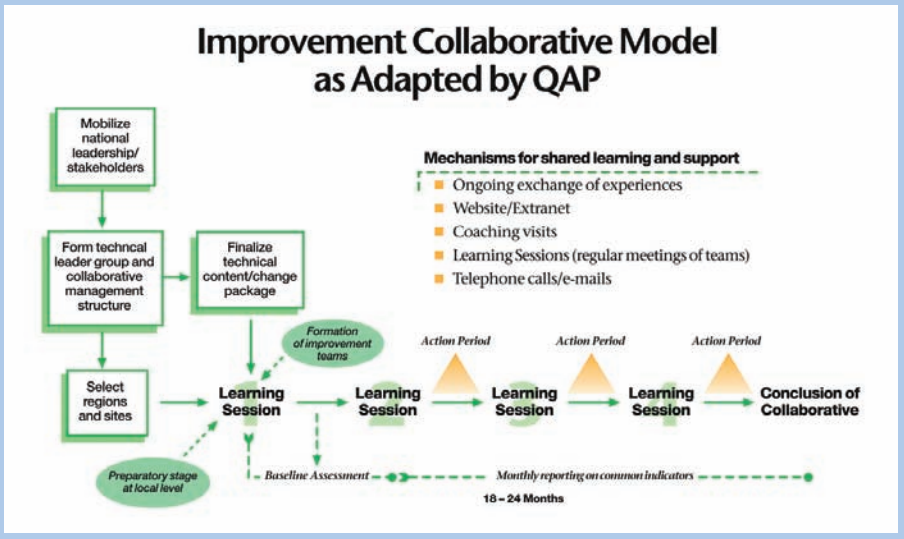
Teamwork and coaching help institutionalize the process, create local ownership, and facilitate faster spread of improvements.

Figure 1. Improvement Collaboratives

An Improvement Collaborative is an organized effort of shared learning by a network of teams to:

- Adapt to their local situations a known, best practice model of care for a priority health problem
- Achieve significant results in a short period, i.e., 12–24 months, reducing the gap between best and current practice
- Scale up the adapted model throughout the organization using an intentional spread strategy





Results

PHI Collaborative teams introduced improvements such as those in Table 2 and recorded the changes in their indicator measurements using run charts. The charts show gradual improvement over the course of the collaborative, although fluctuations occur, sometimes falling to quite low levels. Low levels in the run charts presented here were likely caused by staff absence or turnover resulting in untrained staff performing the service. Breaks in the data have known or unknown causes, which may range from a physicians' strike to a failure to collect data.

Chart 1 shows that Tanzania improved its percentage of cases where triage was performed from 65% to 95%; improvement was fairly consistent. Niger had no triage—or at least no measurement of triage—at the start of its PHI Collaborative, so triage started at 0% in the initial sites and improved rather erratically but steadily. The new sites started higher and achieved improvement at a smoother rate than the initial sites, perhaps having benefited from the experience of those sites. Data in this chart cover October 2003–February 2007 for Niger's initial sites, February 2005–February 2007 for Tanzania, and January 2006–February 2007 for Niger's new sites.

Chart 2 shows changes in case management of children needing emergency care for Nicaragua and Niger. Nicaragua's data cover January 2004–December 2006; the longer break in the data reflects a physicians' strike. The Niger data cover January 2006–September 2007 and include both initial and new sites: this indicator was reformulated when the new sites joined the collaborative in 2006, so the data for both were monitored collectively.

Chart 3 presents changes in case management of children with pneumonia in all three PHI countries. Nicaragua's data collection for this indicator started in January 2004 and ended in December 2006, again with a break due to the physicians' strike. Niger's data cover both initial and new sites and extend from January 2006–September 2007, while Tanzania's data run from January 2006 to February 2007.

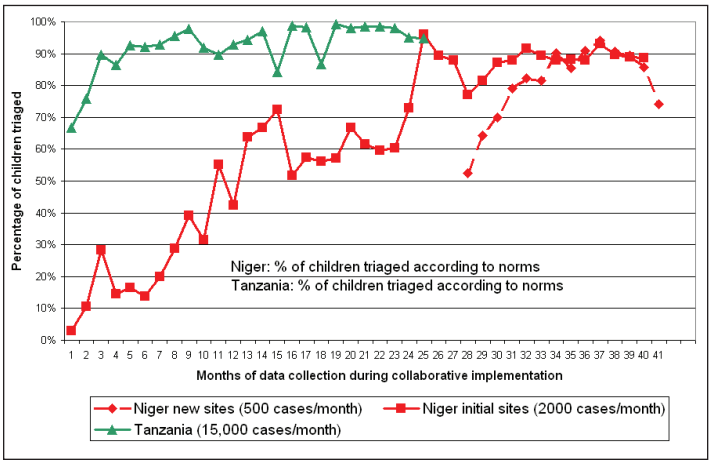
Chart 4 presents data on case management of dehydration in children in Niger (initial and new sites) from January 2006–September 2007 and in Nicaragua from January 2004–September 2006.

Table 2. Key Areas of Pediatric Service with Specific Improvements Introduced by Teams

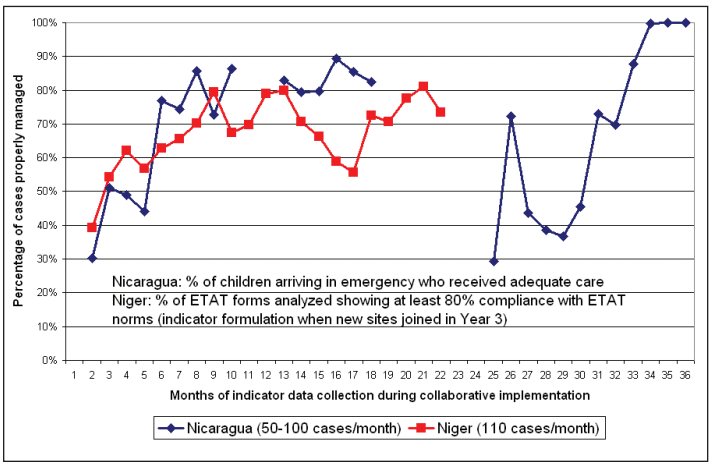
National clinical standards and guidelines
Adapted international clinical standard guidelines (WHO Referral Care Manual) to national situation
Trained staff in the use of the Manual
Displayed chart booklets and laminated charts to remind staff of the Manual's guidelines while they worked
The Manual is available in all service areas
Emergency triage assessment and treatment
Designated triage personnel to undertake triage immediately on arrival of ill child
Instituted triage assessment 24 hours, 7 days a week
Designated emergency care areas and fully stocked emergency trays with drugs and equipment
Assigned escorts to very sick patients
Introduction and use of job aids
HIV screening algorithm in all child care service areas, including outpatient department, maternal and child health clinics, wards
Charts from Referral Care Manual in all care areas
Counseling cards for prevention of mother-to-child transmission of HIV in Antenatal Care and HIV Counseling and Testing Centers
Infant and child nutrition guidelines in the recuperation and malnutrition wards/units
Reducing waiting time
Documenting arrival and discharge times for patients (to monitor duration of stay)
Escorting those who are very sick to care areas
Calling and informing wards of incoming patients
Bringing lab services to outpatient departments
Using rapid diagnostic tests
Improving patient flow at each provider-patient contact
Monitoring compliance with standards of care and treatment
Introducing critical care pathways or care monitoring charts for all admitted patients
Reviewing case notes every month for major common conditions
Recording death audits monthly
Monitoring trends in mortality and case fatality monthly
Referral systems
Mapping of referral networks throughout the continuum of care
Developed referral forms and guidelines
Working with community-based organizations to improve linkages between facilities and community services
Representing each service area on the Quality Improvement team
Baby and child friendly services
Toys and other stimulation equipment available
Collaborative sites certified and recertified as baby and child friendly
Rooming-in services for newborns and their mothers
Availability of commodities and essential drugs
Regular use of Reporting and Requesting system to avoid stock-outs
Maintaining an up-to-date inventory of commodities, drugs, and equipment
Using check lists at handover
Including pharmacy and procurement staff on the hospital Quality Improvement team

Results from PHI Collaboratives 2003–2007

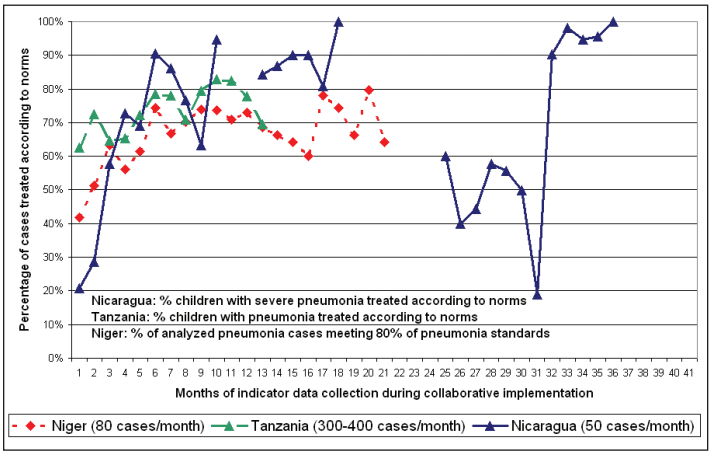
1. Percentage of Children Who Were Triaged upon Entry to the Hospital in Niger and Tanzania



2. Correct Treatment/Case Management of Children Seen in the Emergency Room in Nicaragua and Niger

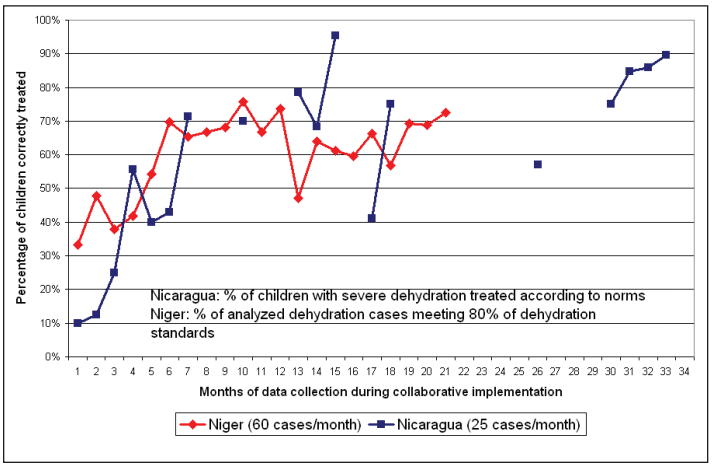


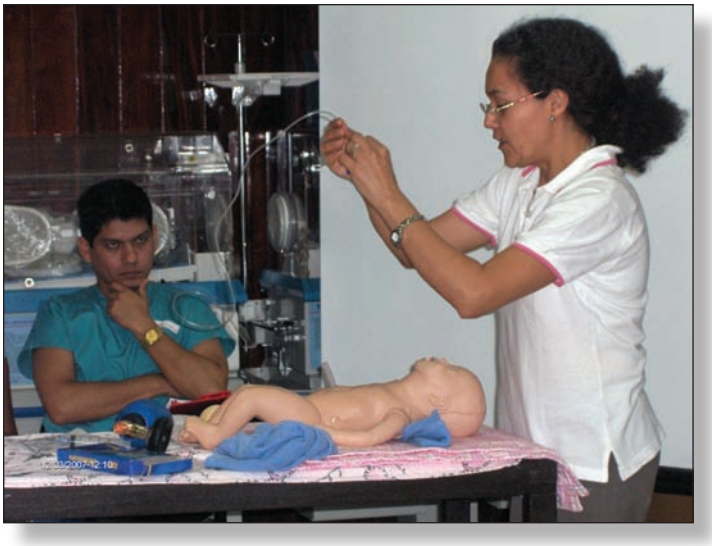
3. Correct Case Management of Pneumonia in Nicaragua, Niger, and Tanzania



Results from PHI Collaboratives, 2003–2007

4. Correct Case Management of Dehydration in Niger and Nicaragua





A health worker in Nicaragua is trained in neonatal resuscitation using anatomical models.

Conclusions

Our experience with PHI Collaboratives in these countries leads us to these conclusions:

- Health care improvement collaboratives in developing countries can improve the quality of pediatric services in district hospitals.
- System improvements include the application of standard care and treatment guidelines, building capacity of providers in continuous quality improvement, and monitoring changes in care quality over time.
- Improvements achieved in demonstration sites can be spread to new sites, where improved outcomes can often be achieved more rapidly than in the original sites.
- The collaborative approach is an effective way to introduce standards of care, apply them, and rapidly increase compliance with these standards.
- The PHI Collaboratives have helped to coordinate key partners at national and district levels, a process that contributed to institutionalization of evidence-based standards of care.

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