

## Community environmental health assessment strengthens environmental public health services in the Peruvian Amazon

Brian Hubbard<sup>a,\*</sup>, Richard Gelting<sup>a</sup>, Virginia Baffigo<sup>b</sup>, John Sarisky<sup>a</sup>

<sup>a</sup>Centers for Disease Control and Prevention, National Center for Environmental Health, 4770 Buford Highway, NE, Mail Stop F-28, Atlanta, GA 30341-3724, USA

<sup>b</sup>CARE Perú, Urban Environmental Health Project, Lima, Peru

### Abstract

In December 1999, the Centers for Disease Control and Prevention (CDC) and the Cooperative for Assistance and Relief Everywhere, Peru Country Office (CARE Peru), initiated the Urban Environmental Health Project (SAU, in Spanish) to strengthen environmental public health services in urban and periurban settlements in Peru. The project received funding from the Woodruff Foundation as part of the CARE-CDC Health Initiative (CCHI). The “Protocol for Assessing Community Excellence in Environmental Health” (PACE EH) guided the development of a community environmental public health assessment (CEHA) process in Cardozo, a settlement in Iquitos, Peru. The project developed a three-phase process that merged scientific understanding and community perception about local environmental health problems. In phase 1, local environmental health technicians assisted the community in understanding environmental health conditions in Cardozo and selecting priorities. During phase 2, local technicians assessed the community-selected priorities: water and sanitation. Results from recent water quality assessments revealed that 82% (9 of 11) of samples from shallow dug wells, 18% (2 of 11) from deeper drilled wells, and 61% (11/18) from household drinking containers were positive for thermotolerant coliforms. Phase 3 activities produced an action plan and an intervention to mitigate health problems associated with inadequate water and sanitation services in the Cardozo community. As a result of the CEHA process, CARE Peru obtained funding from the United States Agency for International Development (USAID) to develop and implement an environmental health risk monitoring system and the proposed water and sewage intervention in the settlement. CDC continues to provide technical assistance to the local environmental health services groups in Iquitos through an agreement with CARE Peru as part of the USAID-funded Urban Environmental Health Models Project (MUSA). Technical assistance activities and the development of the environmental health risk monitoring system have helped to strengthen the local environmental public health services delivery system.

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### Introduction

In December 1999, the Centers for Disease Control and Prevention (CDC) and Cooperative for Assistance and Relief Everywhere in Peru (CARE Peru) launched

\*Corresponding author. Tel.: + + 7704887098;  
fax: + + 7704887310.

E-mail address: [bnh5@cdc.gov](mailto:bnh5@cdc.gov) (B. Hubbard).

the Urban Environmental Health (Salud Ambiental Urbana [SAU], in Spanish) Project. The SAU Project was one of seven CARE-CDC Health Initiative (CCHI) projects funded by the Woodruff Foundation of the United States. The objective of the SAU Project was to strengthen the capacity of the municipal government and public and private organizations to understand and resolve local environmental public health problems in selected urban and periurban Peruvian communities. Additionally, as in other successful models, the SAU Project sought to improve local environmental health services by increasing community collaboration in the identification, prioritization, and resolution of environmental public health issues (Spengler and Falk, 2002). CDC provided technical assistance on assessing community environmental health problems in Cardozo to CARE Peru, and the regional environmental health and health directorates (DESA and DISA, respectively, in Spanish). CDC and CARE Peru used the “Protocol for Assessing Community Excellence in Environmental Health” (PACE EH) to guide the community environmental health assessment process. The development of this 13-task protocol was a cooperative effort between CDC, local environmental health practitioners and the National Association of County and City Health Officials (NACCHO) in the United States. The PACE EH process assists environmental health agencies and communities build collaborative methods needed to understand and resolve environmental health issues (NACCHO, 2000). The implementation of the PACE EH methodology in Cardozo, Peru, was the first application of this community environmental health assessment (CEHA) process outside the United States (Baffigo et al., 2001).

## Background

Iquitos, the capital of the province of the Maynas located in northeastern Peru, rests at the confluence of the Itaya and Amazon rivers in the Amazonian forest. In the Loreto region of Peru, 79% (377,304 of 477,601 people) of the provincial population lives in the city. Rapid urbanization in Iquitos has led to the establishment of settlements on the periphery of the city. Growth of settlements has been particularly rapid along the Iquitos–Nauta highway in the southernmost zone of the city. The settlement of Manuel Cardozo Davila, which lies in the districts of San Juan and Belén, borders the banks of the Itaya River. The population of the settlement is approximately 4750. Settlement residents suffer from overcrowding, poverty, and poor environmental conditions that affect human health. Needed sanitary infrastructure (water supply, wastewater disposal, solid-waste management) has not kept pace with

the growth around the city. In fact, connections to the municipal water and sewer systems do not exist in the human settlements. Although the settlement formed 25 ago, many residents still do not have legal title to the land on which they live. Poor and nonexistent environmental public health services typify the Manuel Cardozo Davila settlement. The water supply system consists of community ground water wells with elevated storage tanks and an undetermined number of shallow dug wells and private groundwater wells. Sewage flows freely in the settlement streets, which are prone to flooding from the tropical rains. Solid-waste collection services are erratic because of the mud-clogged streets that are impassable by larger trucks.

Participatory processes in urban and periurban areas in Peru focusing on environmental health issues require a great deal of creativity. Most residents and their elected authorities or representatives do not perceive environmental health issues as a vital concern. This is not unique to Peru; benefits from environmental health improvements are more subtle than direct monetary benefits and are spread out over a number of people. Therefore, they do not immediately affect a person’s economic well-being in the short run. This attitude is even more pronounced among residents of periurban areas where the main priorities involve satisfying basic subsistence and housing needs. However, once environmental health issues are placed into a larger perspective for local residents through a process such as the one described here, those perceptions often are modified and environmental health becomes a priority.

## Materials and methods: PACE EH community assessment

To address the environmental health issues in the settlement and to create awareness of those issues, CARE Peru and CDC developed an assessment process using PACE EH. The objectives of the process were to

- identify environmental public health problems,
- select environmental public health priorities,
- develop and initiate plans of action, and
- monitor performance of the project activities.

The assessment process endeavored to apply the 13 tasks recommended in the PACE EH guidebook (Table 1). The PACE EH methodology is flexible and adaptable to different communities, environmental situations, and cultural settings. Likewise, the Peruvian application of PACE EH proved an adaptable process. Sometimes the order of the recommended tasks in PACE EH changed, or tasks were omitted. However, the SAU Project used the most appropriate and important tasks recommended in PACE EH to drive

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