Diarrhea in a Family in a *Barangay* Community of Catarman, Samar

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ABSTRACT

Treating the health problems of the community will treat those of the family. Juan de la Cruz and his son can be made well after proper treatment of their diarrhea, but adequate, proper and continuing management of the environmental problems of *Barangay* Jose Abad Santos (JAS), related to the development of disease, would be the more lasting solution to this important and common community health problem.

Key Words: diarrhea, Samar, community health

Diarrhea in a Family: The Cruz Family of Barangay Jose Abad Santos

Juan de la Cruz is 24 years old, male, married, and residing along the riverside of *Barangay* Jose Abad Santos, Catarman, Northern Samar. He presented with a chief complaint of *uro-uro* (passage of loose to watery stools) of two days duration occurring more than three times a day.

He narrated his illness as follows, "*It was just like any other day. I woke up at 6 o'clock in the morning seeing the bright blue sky through the window of our little* nipa *(grass) hut. I found my wife and sons, age 2 years and 1 year, already at the table eating breakfast. I helped myself to a cup of coffee and a piece of* pan de sal *(salted bread) and prepared for work. My wife cleaned the table and then breastfed our 3 months old daughter, upon hearing her crying call of hunger.*

After kissing my wife and kids goodbye, I grabbed the plastic bottle, refilled with tap water from the public pump the night before. I dropped by my employer to fetch the pedicab that I drive daily. I brought my passengers to their destinations for a rate of three to five pesos each. It was quite hot and humid throughout the day, driving under the sun and through the dust from the road, but that did not stop me. I drank from my water bottle several times before lunch. I went home for lunch, giving my wife fifty pesos to buy sautéed vegetables from the store nearby. After eating, I refilled my water bottle from the public pump just before exiting our neighborhood to resume work. Before the end of the day, I noticed cramping pain over my abdomen. So I went home much earlier than usual. I passed loose to watery stools. I didn't take any medications for the pain and the diarrhea to avoid wasting the little money I earned today. I think I passed watery stools at least three times yesterday. The same thing happened to my son before and he was given antibiotics and treated for dehydration."

Juan de la Cruz was quite concerned not as much with having this *uro-uro* often but the disruption it created in his daily pedicab errands, as well as the absence of earnings for the whole day or even over several days, as he ventured, *"I was wondering if you will treat this health problem we often have in the family differently."*

Diarrhea in the Community: Jose Abad Santos, Catarman, Samar

Barangay (barrio) Jose Abad Santos (JAS) is one of the 55 community *barangays* of Catarman, the capital town of Northern Samar Province. Catarman was recently designated as a first class municipality and is considered the center of arts, education, and commerce of the province. Twenty-two *barangays* are located in the town center, including JAS. JAS has a land area of 5 hectares bounded on the north by Mabini Street, east by the Catarman Catholic Cemetery, west by *Barangay* Baybay, and south by the Catarman River.[1] Formerly known as *Cawayan*, it was under the supervision of the president of the community chapel for 22 years before a *barangay* captain became the local community leader.[1] Important community infrastructures such as the *barangay* hall, *barangay* health center and chapel are located in its center.

JAS had a total population of 2,456 with 492 households as of January 2010.[2] Half of the population belonged to the economically productive and reproductive age group, while only a fifth were 0 to 12 years old children. The female to male sex ratio was 100:93.[1] About 10% of the people of JAS were transient residents; most residents were unemployed. About 13% were employed in the local government offices and private establishments, while others owned *sari-sari* (small variety) stores and drove their own or a neighbor's *pedicab* (foot pedaled passenger tricycle) to earn a living.[1]

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JAS is subdivided into 7 *puroks* (barrio sub-divisions); middle- to high-income residents live close to the town center whereas the low income families reside along the riverside. Most JAS houses are built with lightweight materials especially those located near the riverside; houses along the riverside crowded each other. Most households get drinking water directly from public jetmatic pumps untreated or boiled. Most households had no toilets, no proper excreta disposal, no proper garbage disposal; waste water was usually disposed via open pits or canals.

The barangay health center in JAS was established in 2009 and is now manned by 15 *barangay* health workers (BHWs) and 1 *barangay* nutrition scholar (BNS). A visiting midwife was assigned to do immunizations and prenatal checkups. At present, limited health programs are offered such as Expanded Program on Immunization (EPI), *Garantisadong Pambata* (Children's Health Program), Maternal and Child Care. The *Botika ng Barangay* (Barangay Drug Store) sells generic medicines at low prices.

About 68% of JAS children were fully immunized according to the EPI program. The remaining 32% were not fully immunized because the parents believed that the vaccine would make their children sick or were unaware of the importance of vaccination. About 81% of all weighed preschool children in the community had normal weights for their age, 2% were above normal, 17% were below, and few very low weights. The BNS considered malnutrition as a common problem in the community. Breastfeeding was the main infant feeding practice in the community.

Hypertension, cancer, and accidents were the top three causes of mortality in the community, followed by diarrhea, pneumonia and poisoning.[1]

Treating the Community Treats the Family: Focus on Diarrhea

Diarrhea is defined as the passage of loose or watery stools of increased frequency[2], and it is considered acute if diarrhea is less than 2 weeks in duration. More often than not, acute diarrhea is caused by infectious agents derived from food or water contaminated by pathogens from animal or human feces.

In general, several household members in the JAS community defined factors that lead to development of disease, including something as simple as "*dahil sa dumi*" (because of dirt), while others specified factors like poor nutrition, low immunity, polluted environment, poor personal hygiene, changing weather, and emotional burden.

For diarrhea, several factors in the community have been identified that predispose both children and adults to the disease. One important factor is the unavailability of safe drinking water, which is being addressed in the Millennium Development Goal (MDG) 7, Target 10, which calls for reducing by half the proportion of people without sustainable access to safe drinking water by 2015.[3]

In the JAS community, 97% of households used jetmatic pumps. About 95% of households in the community used the water from the pumps for drinking without purification. Only 23% would boil water for 10-30 minutes, and 10% would use chlorination method.[1]

Regular water quality monitoring should be done to assess parameters such as total coliform levels from these communal pumps. Department of Health (DOH) recommends under the Philippine National Drinking Water Standards (PNDWS) that the frequency of water sampling for coliforms in Level I water systems such as public pumps be once every three months.[4]

Most pathogens that give rise to diarrhea are transmitted through the oral-fecal route and thus, proper excreta disposal is essential in its prevention. In JAS, most of the households have their own toilets, with about 18% sharing toilets with their neighbors, and 12% having no toilet at all. For households with toilets, more than a third have septic tanks, the other third water sealed, and the rest overhung, sanitary pits or *Antipolos* with seat cover.[1] Families without toilets urinate and defecate directly in the river or practice the "*balot* (wrap) system" , that is, the excreta is wrapped using newspaper or plastic bag and thrown into the river. This can contaminate water sources of deep-well pumps.

Other contaminants of drinking water may come from waste water draining from the households and industries in the community. In JAS, waste water drainage is either open or blind.[1] In blind drainage, waste water drains through a system of closed pipes eventually leading to an underground pit or covered canal. In open drainage, waste water is drained to creeks, open pits or canals; more than half of JAS households used this type of drainage. Open pits or canals often passed beneath houses built along the riverside. Water contamination is possible especially if water containers are not properly covered in these households.

Garbage is commonly placed in a designated area in the neighborhood where it is later collected into a garbage truck. Others disposed their garbage either by dumping in an open pit or in the river, or by burning. A study conducted on sources of drinking water in close proximity to the Payatas dumpsite in the Philippines showed that these water sources have very high total coliform level exceeding that of the PNDWS set by DOH.[5]

Further, poverty adds to the burden that these existing practices on excreta, sewage and garbage disposal pose on the availability of safe drinking water in JAS. A small portion of the population are employed in government offices and private establishments in the municipality, while others owned *sari-sari* stores and drove their own or their neighbor's *pedicab* to earn a living.[1] JAS is known as the "pedicab capital of Catarman" since most of the *pedicab* drivers and the *pedicab* in the municipality can be found in JAS. Juan dela Cruz belongs to the *pedicab* group of drivers

and earns just enough to somehow provide food for his family of five. He cannot afford to get sick since he cannot miss a day from work, nor can he afford to pay for health services. He and his family are constantly exposed to factors that predispose them to acquiring diseases such as diarrhea.

According to the World Health Organization (WHO), 94% of diarrheal cases can be prevented by interventions that will increase the availability of clean drinking water, and improve sanitation and hygiene.[6] Promotion of proper excreta and sewage disposal must also be encouraged in the community, as well as an efficient mode of garbage disposal and collection. Adequate information dissemination on diarrhea, particularly its causes and preventive measures should also be done.

Studies have shown that water quality interventions in the point-of-use level can reduce diarrheal morbidity by half.[6] These interventions include chlorination, solar disinfection, filtration, combined flocculation or disinfection system, boiling and safe storage, which are important components of what is being promoted by WHO as Household Water Treatment and Safe Storage (HWTS).[7] With its ability to address problems of availability of clean drinking water in the family, it is crucial that activities geared towards the promotion of such interventions in communities with uncertain drinking water safety such as JAS be incorporated in public health information campaigns.

Families thrive only if the whole *barangay* society cares enough to provide for them. Juan de la Cruz and his son can be made well after proper treatment of their diarrhea, but adequate, proper and continuing management of the JAS environmental problems related to the development of disease would be the more lasting solution to this important and common community health problem.

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