

A Tale of Two Cities: Comparison of Rural Versus Urban Honduran Pharmaceutical Needs

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INTRODUCTION

- Shoulder-to-Shoulder is a private, not-for-profit, non-governmental organization founded in 1990 which is based on a community-oriented primary care model.
- An interdisciplinary team consisting of physicians, pharmacists, and medical students travels to Honduras regularly to provide medical care and to assist the community with sustainable healthcare services.
- Two pharmacists were responsible for the medication delivery system in an urban health clinic in Santa Lucia, Honduras in February, 2008.
- Other pharmacy responsibilities included development of a diabetes management clinic.
- A previous study of pharmacotherapy needs in a rural health clinic was conducted in Colomarigua, Honduras in September, 2007.

OBJECTIVES

- To compare medication use patterns in two different international health clinics in rural and urban Honduras.

METHODS

STUDY DESIGN

- Prospective, descriptive study

PATIENTS

- All patients were residents of the Honduran villages where medical and pharmaceutical services were provided
- All patients seen in the pharmacy over a six day period were included

Inclusion criteria

- Patients seen in clinic who received at least one medication

Exclusion criteria

- Patients seen in clinic who did not receive any medications

DATA COLLECTION

- Information collected included the following:
 - Demographic data: gender and age
 - Diagnosis
 - Medications prescribed
 - Medication availability
 - Therapeutic substitution availability
 - Medication supply deficiencies

RESULTS

DEMOGRAPHICS

	SANTA LUCIA N = 292	COLOMARIGUA N = 429
GENDER	N (%)	N (%)
Male	79 (27.1)	186 (43.4)
Female	213 (72.9)	243 (56.6)
AGE	N (%)	N (%)
Range (years)	6 months - 87	2 months - 88
Mean (years)	34.8 +/- 23.7	24.9 +/- 20.5
0-14	76 (27.3)	195 (45.2)
15-64	161 (57.9)	215 (49.9)
≥65	41 (14.8)	21 (4.9)



Above: Parents often sent their children to clinic alone to receive multivitamins, anthelmintics, and dental varnishing.

Below: Patient counseling at the Santa Lucia pharmacy



Left: The children are very curious and request to have their pictures taken

Right: Patients eagerly wait to see a doctor in Santa Lucia

DIAGNOSES ENCOUNTERED

DIAGNOSED ILLNESSES	SANTA LUCIA N (%)	COLOMARIGUA N (%)
Respiratory	17 (3.7)	36 (6.0)
Dermatologic	20 (4.3)	66 (11.1)
Parasite	8 (1.7)	26 (4.4)
Helminth	67 (14.5)	118 (19.8)
GERD	39 (8.5)	27 (4.5)
Neuro/Psychotic	10 (2.2)	4 (0.7)
Pain	125 (27.1)	181 (30.3)
Acute Injury	2 (0.4)	3 (0.5)
Other	173 (37.5)	136 (22.8)
Hypertension	33 (19.1)	*
Diabetes	28 (16.2)	*
Prenatal Visits	28 (16.2)	*
Malnutrition	15 (8.7)	*

* = Unknown

MEDICATION INVENTORY

MEDICATION CATEGORIES	SANTA LUCIA N (%)	COLOMARIGUA N (%)
	N = 649	N = 741
Antibiotic	33 (5.1)	36 (4.9)
Topical Agent	33 (5.1)	78 (10.5)
Anthelmintic	77 (11.9)	122 (16.5)
Antiparasitic	8 (1.2)	13 (1.8)
Antipsychotic	1 (0.2)	1 (0.1)
Antidepressant	5 (0.8)	1 (0.1)
Analgescic	136 (21.0)	165 (22.3)
Oral Inhaler	8 (1.2)	8 (1.1)
Oral Steroid	2 (0.3)	2 (0.3)
Acid Relief	44 (6.8)	30 (4.0)
Vitamins	120 (18.5)	186 (25.1)
Other	182 (28)	99 (13.4)
Antihypertensives	57 (31.3)	*
Diabetes Medications	40 (22.0)	*
Aspirin	33 (18.1)	*

* = Unknown

MEDICATION AVAILABILITY

	SANTA LUCIA N (%)	COLOMARIGUA N (%)
In Stock	608 (93.7)	702 (94.7)
Out of Stock	41 (6.3)	39 (5.3)
Substitution available	39 (95.1)	25 (64.1)
No substitution available	2 (4.9)	14 (35.9)

MEDICATION DEFICIENCIES	SANTA LUCIA N (%)	COLOMARIGUA N (%)
	N = 41	N = 39
Supply Depleted	2 (4.9)	7 (17.9)
Different Dose Administered	24 (58.5)	*
Therapeutic Substitution Administered	15 (36.6)	*
Never in Stock	0 (0.0)	32 (82.1)

* = Unknown



Above: The well-established Santa Lucia health clinic pharmacy

CONCLUSIONS

- Although the two cities differ in size and the availability of an established health clinic, most patients received anthelmintics, analgesics, and vitamins.
- More older adults were seen in Santa Lucia.
- More chronic disease states, such as diabetes and hypertension, were encountered in Santa Lucia.
- The supply of children's vitamins with iron was depleted at both sites.
- FUTURE IMPACT**
 - Recommendations about what medications to stock for both rural and urban brigades based upon medication use patterns are being developed.
 - A diabetes treatment algorithm that is specific to the needs of Hondurans and readily available treatments is being developed.
 - Diabetes management classes will continue to be provided at the Santa Lucia health clinic by future brigades.



Above: Pharmacist-taught diabetes education class at the Santa Lucia health clinic



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