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Cities & Citizens Series

**Urban Health
Inequities**

Manilla, Philippines

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Introduction

In today's world where one sixth of the global population lives in cities, the services these cities provide are of crucial importance. Cities should be capable of providing improved water and sanitation, durable housing, adequate living space and security of tenure to their residents. Unfortunately, not every city dweller has access to such services. Some are blessed with easy access to these amenities while others have to make do without them. A slum residence in an urban area is defined as one with inadequate housing, sanitation, tenure security, and no or few basic services (UN Habitat 2003).

This report analyzes and discusses various indicators of social well being for Manila. The report makes use of the Demographic and Health Survey data and discusses health indicators for Manila. The main focus of the report is to look at social conditions and the provision of services in the slums of these cities as compared to the better planned parts of the city.

Abstract

The purpose of this section is to investigate if awareness of major communicable diseases, incidence and treatment of childhood illnesses, access to immunization and maternal health care, child mortality, and child nutrition vary across slum and non-slum settlements of Manila. Descriptive analysis show that women in slum areas are equally aware of TB, the way it spreads, and that it can be cured as their counterparts in non-slum areas. But women in slum areas are less aware of malaria and dengue fever and how these diseases spread. There is also little awareness of the prevention mechanisms. The use of medical treatment in general and oral rehydration in particular is lower in slum residences. Essential vaccines are less accessible to children in slums. Consequently, children in slums are more likely to die sooner than non-slum children. Maternal care in terms of antenatal/prenatal care and assistance are less available to mothers in slums.

Awareness of disease

This section presents the levels of awareness of Malaria, TB, and Dengue in slum and non-slum parts of Manila.

TB

Tuberculosis (TB) is considered to be among the top public health problems in the Philippines. The 2005 EDHS obtained information from respondents (women age 15-49) about whether they had heard about TB and, if so, how it was transmitted. Respondents who knew about TB were also asked if they believed it could be cured and, to assess attitudes toward the illness, whether they would be willing to work with people previously treated for TB.

Table M1: Knowledge about TB and attitude towards people previously treated for TB: percent of respondents

	Ever heard of Tuberculosis	Can Tuberculosis be cured	Means of spreading TB:					Will to work with previously treated for TB
			through air/coughing	sharing eating utensils	touching	other	DK	
Non-slum	98	96	60	81	4	1	3	73
Slum	97	95	56	78	4	0	5	70
Group Total	98	96	59	80	4	1	4	72

N= is 2163 of which 26 percent were slum dwellers.

Table M1 shows that almost all respondents had heard about TB, and there was no marked difference in this across settlement types. Almost all of those who had heard about TB said that it can be cured, and that slum and non-slum residents were equally likely to believe so.

We also see in Table M1 that six in ten correctly identified that TB can be spread through the air when an infected individual coughs or sneezes, and awareness about this cause was greater among non-slum (60 percent) than among slum (56 percent) residents. Eight in 10 respondents wrongly believe that TB

can be contracted by sharing eating utensils with an infected person, and slum residence was less likely to be associated with this view than non-slum residence.

Social attitude towards people treated with TB was generally positive with more than seven in ten showing the will to work with previous TB patients, although slum residents were less likely to believe so than non-slum residents.

Table M2: Percent of respondents who were told they had TB

	Been told you had TB	Taken anti-TB
Non-slum	1	100
Slum	2	100
Group Total	1	100

Note: Sample total is 2162 of which 26 percent are slum dwellers.

Incidence of TB was very low with only one percent of respondents saying they were told they had TB, but the proportion of incidence was slightly higher in slum areas (See Table M2).

Malaria

Malaria is another public health issue in the Philippines. Table M3 shows that more than 8 in ten households have heard of malaria, but this was less so among slum residents. Almost seven in ten households responded that mosquito bite is the major cause of malaria, but slum residents were less likely to believe so (64 percent) than non-slum residents (72 percent). Respondents identified drinking contaminated water (12 percent) as the second major cause of malaria and in this and slum and non-slum residents were equally likely in believing so. Seven percent did not know what caused malaria.

Table M3: Awareness about malaria and its causes: percent of respondents

	Heard of malaria	Causes of malaria							
		contaminated water	inherited	mosquitoes	fatigue	parasites in blood	polluted air	other	DK
Non-slum	84	12	0	72	2	1	2	3	7
Slum	79	12	1	64	1	1	1	4	8
Group Total	83	12	0	69	2	1	2	3	7

N=1710, of which 28 percent are slum and 72 percent are non-slum dwellers.

Table M4 shows that more than 5 in ten households correctly identified mosquito bite as the main route of malaria transmission, but slum dwellers were less likely to believe so (49 percent) than non-slum dweller (56 percent). Respondents identified drinking contaminated water (12 percent) as the second major cause of malaria, and slum residents were more likely to believe so.

Table M4: Awareness about ways malaria spreads: percent of respondents

	polluted air	malaria patient	contaminated water	sour foods	mosquitoes	fatigue	other	DK
Non-slum	5	7	9	0	56	1	3	18
Slum	5	9	13	2	49	1	3	17
Group Total	5	8	10	1	54	1	3	18

N=1710, of which 28 percent are slum and 72 percent are non-slum dwellers.

Contact with malaria patient was also identified as the third major route of transmission, and this was more likely in slum than non-slum residence (9 versus 7 percent). About 2 in ten did not know at all how malaria is transmitted, and this was equally likely across settlement types.

Table M5: Awareness about ways malaria can be prevented: percent of respondents

	Malaria can be prevented	Ways malaria can be prevented								DK
		avoid certain foods	spray house	eliminate mosquito breeding p	stream clearing	mosquito coil	mosquito net	mosquito repellent	other	
Non-slum	77	11	24	59	6	2	6	3	6	2
Slum	72	9	19	50	7	3	11	2	6	4
Group Total	75	10	23	56	6	2	7	3	6	3

N=1710, of which 28 percent are slum and 72 percent are non-slum dwellers.

Table M5 presents respondents knowledge on how malaria can be prevented. More than seven in ten indicated that malaria can be prevented, but this was less likely in slum than in non-slum area (72 versus 77 percents). About six in ten believe that malaria can be prevented by eliminating mosquito breeding place, and slum residents believed less so than non-slum dwellers (50 versus 59 percent).

Dengue Fever

In the Philippine, reducing morbidity and mortality from dengue fever is an important health goal. Table M6 shows that almost all households heard of dengue fever and this was the same across settlement types. Almost 9 in ten believe that dengue fever is spread through mosquito, and there was no difference in this across slum and non-slum distinctions.

Table M6: Awareness about dengue and ways it spreads: percent of respondents

	Ways dengue is spread:								
	Heard of dengue fever	blood	dengue patient	water	airborne	mosquito	polluted air	other	DK
Non-slum	98	5	3	21	2	88	5	6	1
Slum	97	4	3	17	1	89	5	4	1
Group Total	98	5	3	20	2	88	5	5	1

N=1710, of which 28 percent are slum and 72 percent are non-slum dwellers.

Table M7 presents respondents knowledge on ways dengue can be prevented. Removing mosquito breeding places was cited as a way to prevent dengue by 81 percent of the respondent, but slum dwellers were less likely to believe so. Eliminating mosquitoes was cited by 51 percent and fumigation by 21 percent, and in both case slum residents were less likely to believe so. Mosquito net was cited by 8 percent, and slum residents were more likely to believe so. Small proportions have misconceptions on dengue prevention, like washing hands before eating (3 percent).

Table M7: Awareness about ways dengue can be prevented: percent of respondents

	Ways dengue can be prevented										
	Dengue can be prevented	eliminate mosquitoes	eliminate mosquito breeding pl	fumigation	stay away from dengue patient	medicine	mosquito coil	mosquito net	mosquito repellent	wash hands	other
Non-slum	98	53	83	21	3	1	2	7	5	3	4
Slum	96	47	76	19	3	2	3	11	5	2	5
Group Total	97	51	81	21	3	1	3	8	5	3	5

N=1710, of which 28 percent are slum and 72 percent are non-slum dwellers.

Correlations between selected indicators

Correlation coefficients in table M22 show that slum residents in Manila have limited access to information regarding communicable diseases. Slum residents are correlated with limited awareness about malaria and how it can be prevented.

Table M22: Correlations between settlement indicators and awareness about communicable diseases: Manila

	slum	improved water	improved sanitation	structural quality	tenure	Heard of malaria	Malaria can be prevented	Heard of dengue fever	Dengue can be prevented
slum	1	-.295(**)	-.225(**)	-.867(**)	-.322(**)	-.060(*)	-.059(*)	-.024	-.041
Improved water	-.295(**)	1	.094(**)	-.005	-.037	.090(**)	.056(*)	.037	.028
Improved sanitation	-.225(**)	.094(**)	1	.178(**)	.264(**)	.060(*)	.097(**)	.035	.052(*)
Structural quality	-.867(**)	-.005	.178(**)	1	.059(*)	.057(*)	.062(*)	.027	.041
Tenure	-.322(**)	-.037	.264(**)	.059(*)	1	-.018	-.024	-.010	-.016
Heard of malaria	-.060(*)	.090(**)	.060(*)	.057(*)	-.018	1	.808(**)	.145(**)	.126(**)
Malaria can be prevented	-.059(*)	.056(*)	.097(**)	.062(*)	-.024	.808(**)	1	.137(**)	.130(**)
Heard of dengue fever	-.024	.037	.035	.027	-.010	.145(**)	.137(**)	1	.901(**)
Dengue can be prevented	-.041	.028	.052(*)	.041	-.016	.126(**)	.130(**)	.901(**)	1

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

Awareness about malaria is positively correlated with the indicators improved water, improved sanitation, structural quality and tenure. Awareness about Dengue fever, however, is not significantly correlated with indicators for slum and other settlements indicator.

Similarly as in La Paz and Alexandria, residents that are aware of one disease are also informed of the others. Residents that know about malaria also know about dengue fever.

Diarrhea and respiratory disease among under-five children

Diarrhea

This section describes the prevalence of diarrhea among children under the age of five during the two-week period before the survey, and ways and place of treatment by settlement type. We see in Table M8 that 9 percent of children under the age of five were reported to have been ill with diarrhea, and there was no marked difference in prevalence of the disease between settlement types.

Table M8: Incidence of diarrhea and treatment: percent of children

	Had diarrhea recently*	Received treatment**		Type of treatment				
		no treatment	medical treatment	Given oral rehydration	Given recommend. home solution	Given other pills or syrups	Given home remedy, herbal med.	Given other treatment
Non-slum	10	60	36	54	20	41	3	5
Slum	8	70	30	43	18	28	10	3
Total	9	64	34	51	20	36	6	5

*N=965, of which 37 percent were slum dwellers. ** N=89, of which 34 percent are slum dwellers

Table M8 shows less than 4 in ten of the diarrhea-ill children received medical treatment, and slum residence was associated with less likelihood of receiving medical treatment. More than 6 in ten did not receive any treatment at all, and the proportion of this was higher in slum areas. Five in one of the diarrhea-ill children were reported to have treated with oral rehydration, but oral rehydration was less likely to be used in slum areas (43 percent versus 54 percent). Use of home remedy, herbal medicine was observed more among slum than non-slum children.

As we can see in table M9, less than 2 in ten of diarrhea-ill children were taken to public or private health facility to receive treatment. This was true across slum and non-slum residences.

Table M9: Place Diarrhea treatment: percent of diarrhea-sick children

	Place for diarrhea treatment						
	government hosp.	govt health center	Barangay health station	private hosp/clin.	private pharmacy	private doctor	Other
Non-slum	5	12	5	9	2	5	2
Slum	7	17	0	7	0	0	0
Group Total	6	14	3	8	1	3	1

N=89, of which 34 percent are slum dwellers

To prevent dehydration, the amount of liquids given to the child should be increased during the diarrhea episode. As Table M10 shows, the amount of fluids to sick children at least remained the same in about 3 in ten cases, and the proportion was slightly lower among slum children. About one in ten of the sick children received somewhat less than the normal amount of liquids, and this proportion was higher among slum children. In six out of ten cases were children reported to have taken more fluid than normal, and this was more or less equally likely across settlement types.

Table M10: Amount offered to eat and drink for children who were ill with diarrhea: percent of children

	Amount offered to drink			Group Total	Amount offered to eat				Group Total
	Somewhat less	About the same	More		Stopped food	Somewhat less	About the same	More	
Non-slum	8.5	32.2	59.3	100.0	1.7	27.1	54.2	16.9	100.0
Slum	10.0	30.0	60.0	100.0	6.7	16.7	66.7	10.0	100.0
Group Total	9.0	31.5	59.6	100.0	3.4	23.6	58.4	14.6	100.0

N=89, of which 34 percent are slum dwellers

Children with diarrhea should also receive adequate nutrients, and thus it is recommended that the solids given to a child be increased or at least stay the same during diarrhea episodes. In Table A11 we see that in more than seven in ten cases were the child given about the same to eat, and this was more likely in slum than in non-slum area. More than one in ten of the sick children were reported to have been offered to eat more and but this was less likely in the slum areas. Amount to eat was somewhat less than normal in more than two out of ten cases, and this was more likely in non-slum areas. Less than one in ten completely stopped eating, and this was more so in slum areas.

Cough/fever

The prevalence of ARI was estimated by asking mothers of all children under five years of age whether children had been ill with a cough or fever, and if short or rapid breaths followed cough in the two weeks before the survey. Table M11 shows 16 percent of children under age five had had fever and 19 percent had had cough during the two-week period before the survey. Cough was slightly more likely in slum areas whereas fever was equally likely across settlement types. Only in 2 out of ten cases of reported cough/fever were followed by short and rapid breaths, and this was almost three times as much likely in slum as in non-slum area.

Table M11: Incidence of fever and cough: percent of children

	Had fever in last two weeks*	Had cough in last two weeks*	Short, rapid breaths**
Non-slum	16	18	12
Slum	16	20	33
Group Total	16	19	20

*N=965, of which 37 percent are slum dwellers. **N=180 of which 39 percent were slum children.

In table M12 we see that more than four in ten of the children reported to be sick with cough/fever did not get medical treatment, and this was more prevalent in non-slum areas. Almost five in ten of the children with cough/fever were reported to have received medical treatment. Paracetamol was the most commonly used treatment for fever/cough (92 percent), and the proportion of Paracetamol users was higher in slum (95 percent) than non-slum area (91 percent).

Table M12: Treatment for fever/cough: percent of children

	Had treatment*		Type of treatment**					
	no treatment	medical treatment	Chloroquine	Aspirin	Ibuprofen/acetaminophen	Paracetamol	Other	Nothing
Non-slum	48	44	0	2	2	91	8	6
Slum	36	55	2	4	0	95	4	2
group total	43	48	1	3	1	92	7	5

* N=236, of which 37 percent are slum children. **N=150 of which 37 percent are slum children.

Table M13 shows place of treatment for cough/fever. Of those children ill with cough/fever, 16 percent were taken to government health center, 3 percent to government hospital, 7 percent to health station, 14 percent to private hospital, 3 percent to private pharmacy, and 8 percent to private doctor.

Table M13: Place of treatment fever/cough: percent of children

	Place of treatment												
	Govt. hosp.	govt health ctr	comm. health wrkr	Barangay health station	private hosp/clin	private pharmacy	private doctor	NGO	industry-based clinic	shop	Friends /relatives	church	other
Non-slum	2	13	1	6	11	4	10	1	1	0	4	0	1
Slum	3	21	0	8	17	2	6	0	0	2	7	1	0
group total	3	16	0	7	14	3	8	0	0	1	5	0	1

N=236, of which 37 percent are slum children.

Slum residence was associated with greater use of both public health facility and private hospital/clinic. Use of private doctor was more prevalent in non-slum areas.

Access to maternal and child health

Antenatal and prenatal care and coverage

Early and regular checkups by trained medical providers are very important in assessing the physical status of women during pregnancy. A birth is considered to have received regular care if the mother said that she had made at least four antenatal care visits, i.e., visits to a trained medical provider for care for the pregnancy. The results in Table M14 indicate that 80 percent of the births during the five-year period before the survey had received regular antenatal care from a medical provider, and births in slum area were less likely to receive antenatal care (76) than births in non-slum areas (83).

Table M14: Percent of mothers who received four or more antenatal visits

	four or more antenatal visits*	Person who provided Antenatal care**	
		nurse	midwife
Non-slum	82.88	7	24
Slum	75.77	4	27
group Total	80.48	6	25

N=671, of which 34 percent are slum dwellers. ** N=673, of which 34 percent are slum dwellers.

Tetanus toxoid injections were given to women during pregnancy to prevent deaths from neonatal tetanus. Table M15 shows that about five in ten mothers did not receive tetanus toxoid vaccination injection before birth, and this was more likely among slum than non-slum mothers. More than 3 in ten indicated they had one or more injection, and this was less likely in slum than in non-slum residence (23 versus 29 percent). Nearly in three in 10 received two or more doses, and this was equally likely across settlement types.

Table m15: Tetanus toxide coverage: percent of mothers

	number of tetanus toxide doses before this birth			group Total
	None	one dose	two doses or more	
Non-slum	44.8	29.1	26.1	100.0
Slum	52.1	22.7	25.2	100.0
group Total	47.5	26.7	25.8	100.0

N=965, of which 37 percent are slum dwellers.

The results in Table M16 indicate that women in manila received prenatal care from a doctor in five out of ten cases and from nurse/midwife in two out of ten cases. And slum residents were more likely to have received prenatal care from a doctor and nurse/midwife. More than six in ten and nearly 4 reported that they received assistance form doctor and nurse/midwife, respectively, and in both cases the proportion was was lower in slum residences. Use of traditional birth attendants was more common in slum than in non-slum areas although this was low in general.

Table M16: Person who provided prenatal and assistance service: percent of women

	Prenatal				Assistance		
	doctor	nurse/midwife	trad.birth attendant	no one	doctor	nurse/midwife	trad.birth attend.
Non-slum	52	21	3	3	64	40	12
Slum	44	19	5	4	59	37	14
group Total	49	20	4	3	62	39	13

N=965, of which 37 percent are slum dwellers.

Delivery care and place of delivery

Hygienic conditions and proper medical assistance at the time of delivery can reduce the risk of complications and infection for both the mother and the child. For all births in the five-year period before the survey, information was collected on where the delivery occurred, and whether delivery was assisted by trained medical personnel and so on. Table M17 shows that most deliveries occurred at Private health facilities (42.5 % in total), followed by urban and other public hospital (22 % in total), and respondents home and other home (15 %). The proportion of delivery at home or in public health facility was greater in slum areas whereas most deliveries in non-slum areas occurred in private health facilities.

Table M17: Place of delivery: percent of children

	Place of delivery*						Group Total	Delivery by cesarean section**
	Respondents home	Other home	Govt. hospital	Govt. health center	Private hosp/clinic			
Non-slum	27.8	2.0	33.9	3.1	33.1	100.0	12	
Slum	34.9	1.4	42.6	2.3	18.8	100.0	8	
Group Total	30.4	1.8	37.1	2.8	27.8	100.0	11	

N= 957, of which 37 percent are slum dweller. ** N= 965, of which 37 percent are slum dweller.

A caesarean section delivery might be advised and performed in certain situations, especially when a vaginal delivery would put the baby's or mother's life or health at risk; although in recent times it has been also performed upon request. In Table M17 we see that less than 4 in ten deliveries were by caesarean section, but caesarean section deliveries were more likely in non-slum areas (35 percent) than in slum areas (18 percent).

Table M18: Birth size: percent of children

	Size of child at birth						Group Total
	Very large	Larger than average	Average	Smaller than average	Very small	DK	
Non-slum	3.3	15.2	66.1	10.1	5.1	.2	100.0
Slum	3.4	17.9	61.9	13.1	3.7		100.0
Group Total	3.3	16.2	64.6	11.2	4.6	.1	100.0

N= 957, of which 37 percent are slum dweller.

Table M18 shows that most children (65 percent) had average weight at birth, but this was less so in slum areas. Similarly, cases with smaller than average and very small birth sizes were generally low, and were equally likely across slum and non-slum areas. Birth sizes larger than average or very large were observed in about two in ten births, and were slightly higher in slum than in non-slum areas.

Table M19: Person who provided assistance at delivery: percent of mothers

	Assistance at delivery	
	nurse	midwife
Non-slum	13	29
Slum	9	31
Group Total	12	30

N=960, of which 37 percent were slum dwellers.

Table M19 presents the percent of deliveries assisted by skilled medical personnel. Assistance during delivery by nurses was reported in 12 percent of the births, but this was less so in slum areas. Delivery assistance by midwife was reported for 30 of the births, and this slightly higher in slum areas.

Immunization of children

World Health Organization guidelines for childhood immunizations call for all children to receive BCG vaccination against tuberculosis; three doses of the DPT vaccine to prevent diphtheria, pertussis, and tetanus; three doses of polio vaccine; and a measles vaccination during the first year of life. Table M18 shows the proportions of children who were immunized with the specific vaccination at any age up to the time of the survey.

Table M20: Immunization rate: percent of children

	Ever had vaccination	Received								Full immunization rate	Hepatitis B vaccine	Vitamin A in last 6 months
		BCG	DPT 1	DPT 2	DPT 3	POLIO 1	POLIO 2	POLIO 3	MEASLES			
Non-slum	69	91	88	84	75	89	84	76	76	66.99	68	79
Slum	61	87	85	81	73	86	82	73	71	63.46	61	72
group Total	66	90	87	83	74	88	83	75	74	65.70	65	76

N=965, of which 37 percent are slum dwellers.

The results in Table M20 show that immunization coverage levels were 74 percent for measles, 90 percent for BCG, and between 74 and 87 percents for the three doses of the DPT, and between 75 and 88 percents for the three doses of polio vaccines. Overall, however, only 66 percent of children were considered immunized against all of these preventable diseases, i.e., they have received a BCG and measles vaccination and three doses of the DPT and polio vaccines. And this was more often in non-slum (67 percent) areas than in slum area (63 percent). Regarding vitamin A, at least 51 percent have received Vitamin A in the six-month period before the survey.

Child mortality

This section describes the levels of mortality among age under-five children and examines if it varied across settlement types. Table M21 shows under-five mortality for the five-year period before the survey was 26.98 deaths per 1,000 births. At this level, one in about 37 children born in manila would die before the fifth birthday. When distributed across slum non-slum settlements, we see that the probability of dying before the age of five for children born in slum area was 1.08 as much as for children born in non-slum area.

Table M21: Under five mortality rate: per 1000 births

	Under five child mortality rate
Non-slum	26.14
Slum	28.33
Group Total	26.98

Summary of findings

The results of this report in terms of variation in health outcomes across slum and non-slum distinction is mixed. The application of the UN-habitat definition of slum dweller on data for manila resulted in 28 of the household population classified as slum dwellers. Of the under-five children, for example, 37 percent were considered as slum residents, and of the ever married women respondents only 26 percent were identified as slum residents. The distribution of respondents into slum and non-slum was therefore relatively sufficient for analysis. But even with this, results were sometimes counterintuitive. The following summary is based on conclusive results.

1. Awareness about TB, the way it spreads, and that it can be cured is generally high among residents of manila, and there is no marked difference in this across settlement types. Non-slum residents were, however, more positive towards people previously treated with TB than slum residents.
2. Awareness about malaria is also high, but there is difference in this across settlement types with slum dwellers being less knowledgeable about mosquito being the main route of transmission.
3. Awareness about dengue fever and ways it can be spread and prevented was high among residents, but non-slum residents were more aware that the diseases can be prevented.
4. The incidence of diarrhea among under-five children was equally likely in slum and non-slum areas. The use of public and private health facilities for treatment of diarrhea was generally very low, but slum residents appeared to depend more on public health facility for treatment of diarrhea than non-slum residents. Non-slum residents were more likely to use private health facilities than slum residents. The use of medical treatment was very low and even lower for slum children. The use of oral rehydration and pills or syrups in particular was low and even lower in slum residences.
5. The incidence of fever/cough was more or less equally likely in slum and non-slum areas, but cough followed by short and rapid breaths was more prevalent among slum children. The use of

health facilities was generally low. As with diarrhea, slum residents appeared to depend more on Public health facility for treatment than non-slum residents.

6. Mothers in slum area had less access to antenatal and prenatal care and assistance.
7. Mothers in slum areas were more likely to have their births at home or in public health facilities than their counterparts in non-slum areas. Births in slum areas were less likely to happen in private hospital/clinic.
8. Children in slum areas had less access to essential vaccines than their counterparts in non-slum areas, and subsequently face higher mortality rates than their counterparts in non-slum areas. Child mortality was higher in slum areas.
9. Access to vitamin A doses was also lower for slum children.