

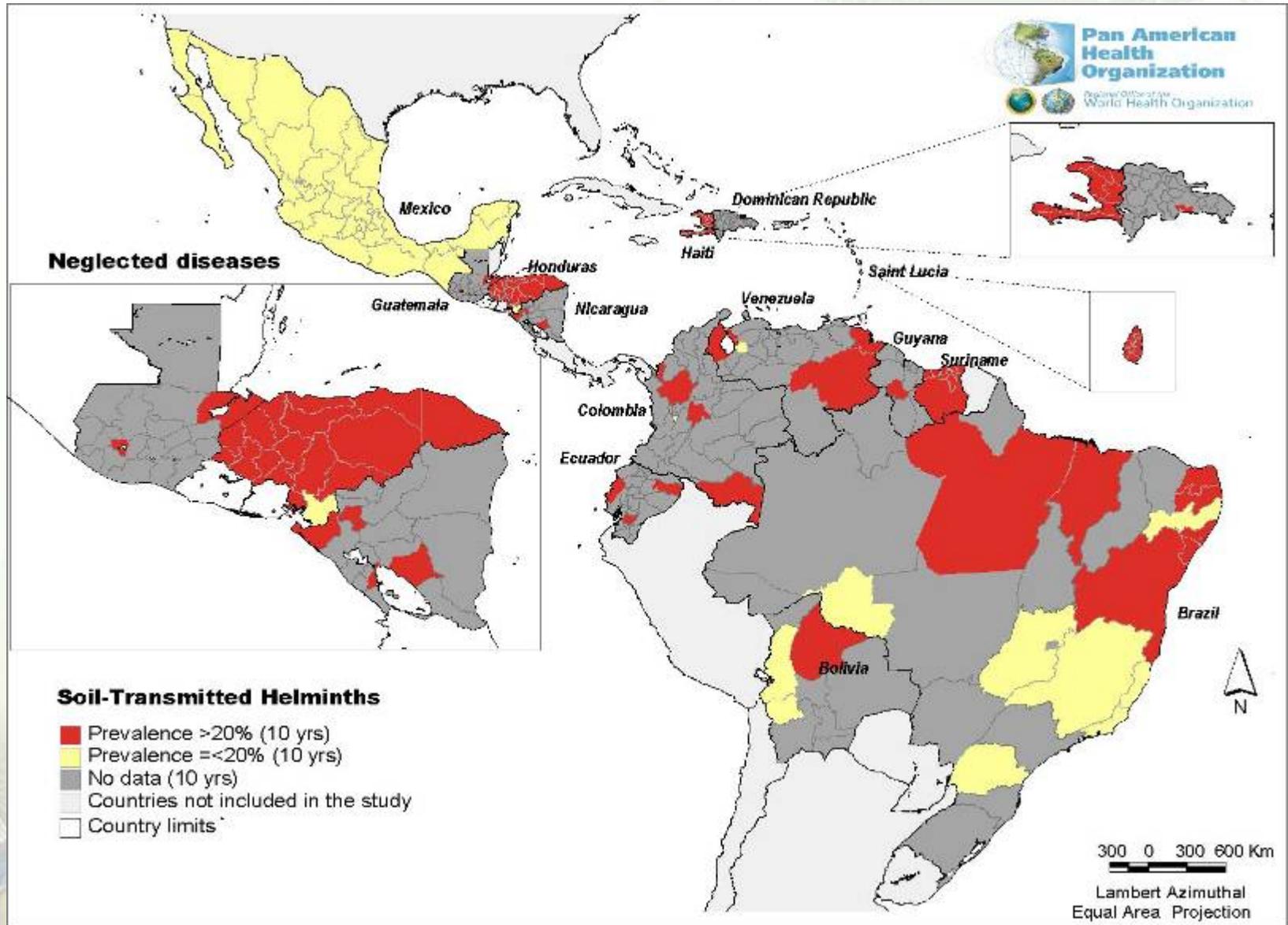
Elimination of Neglected Diseases and other Infectious Diseases related to Poverty

*Soil-transmitted helminths
(Geohelminthiasis)*



Soil-transmitted helminths

Prevalence according to available studies, 1998–2007



Soil-transmitted helminths

Epidemiology

- Present in all the countries in the Region
- 26 million school-age children (SAC) are considered to be at risk in the Region
- Surveys show that 71 administrative units at the first sub-national level show prevalences above 20%

Goal

To reduce the prevalence among SAC to less than 20% in areas of high (prevalence above 50%) or moderate (prevalence between 20 and 50%) risk

To achieve an 80% reduction in the intensity of infections (as measured by egg counts) in SAC

Strategy

- Mass Drug Administration (MDA) to SAC with a minimum annual coverage of 75%.
- In high risk areas (prevalence > 50%) MDA 2x/year
- Increase access to drinking water and improved sanitation
- Health education

Resolution

- A 54.19 (2001)

Process indicators (school-based programs)

- **Number of schools enrolled in the program**
- **Percentage of schools enrolled in the program**
 - Numerator: total number of schools enrolled in the program
 - Denominator: total number of schools existing in the intervention area
- **Number of training sessions to teachers**
- **Percentage of schools with a trained teacher**
- **Number of tablets administered**
- **Number of tablets returned by the teachers.**
- **Coverage**
 - Numerator: number of school age children that received the treatment
 - Denominator: number of school age children in the intervention area
- **Percentage of classrooms that participated in at least one health education activity**

Parasitological Indicators

- Prevalence of infection in SAC below 20% (according to methodology proposed by WHO)
- Absence of SAC with either moderate or heavy infections (as measured by egg counts)

Thresholds of intensity for light, moderate and heavy *Ascaris lumbricoides*, *Trichuris trichiura* and hookworm uncinarias

Helminth species	Threshold of intensity		
	Light	Moderate	Heavy
<i>Ascaris lumbricoides</i>	1-4.999 epg	5.000-49.999 epg	≥ 50.000 epg
<i>Trichuris trichiura</i>	1-999 epg	1.000-9.999 epg	≥ 10.000 epg
Hookworm	1-1.999 epg	2.000-3.999 epg	≥ 4.000 epg

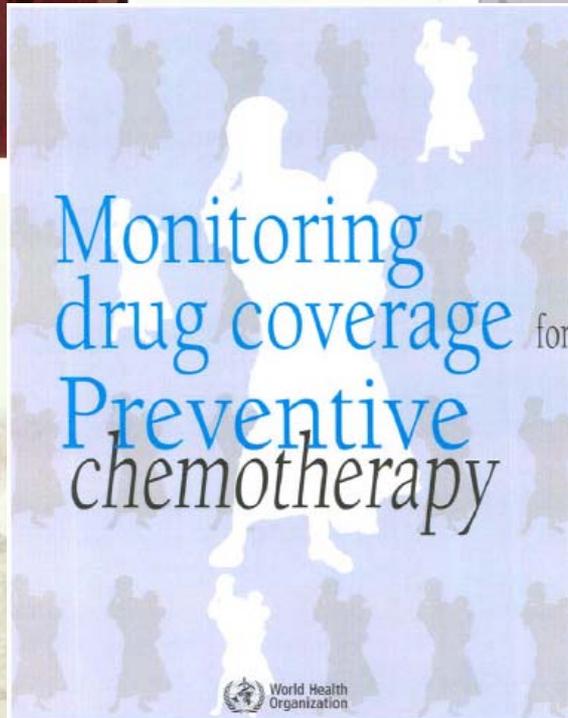
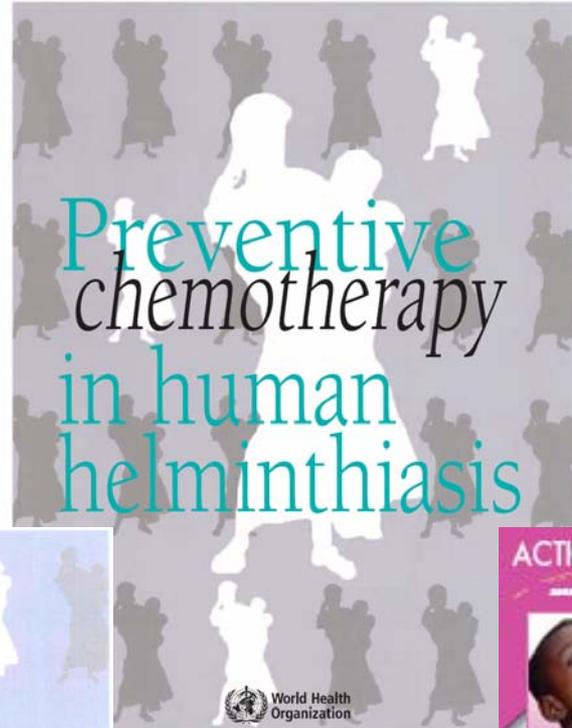
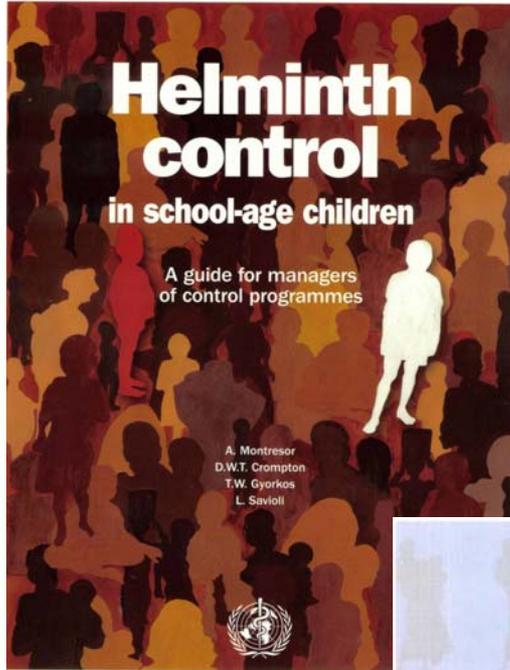
epg: eggs per gram of stools

Morbidity Indicators

- Decrease in the prevalence of anemia in school-age children
- Weight and height gain in school-age children
- Decrease in school absenteeism



Key Documents



PPC NEWSLETTER

MDA Coverage Gap for Soil-Transmitted Helminths Latin America and the Caribbean, 2007

AMRO		Pre-school-age children at risk ϕ			School-age children at risk ϕ		
Country	Year	Total Pre-SAC Pop.	TOTAL Pre-SAC TREATED	TOTAL Pre-SAC not covered (GAP)	Total SAC Pop	TOTAL SAC TREATED	TOTAL SAC not covered (GAP)
Argentina	2007	237,786		237,786	606,901	1,320,000	0
Belize	2007	15,139		15,139	36,410	30,000	6,410
Bolivia	2007	526,478		526,478	1,224,791	39,000	1,185,791
Brazil	2007	3,457,661	8,535	3,449,126	8,191,313	20,219	8,171,094
Dominican Republic	2007	191,440	9,101	182,339	453,132	1,916,712	0
El Salvador	2007	235,288	4,000	231,288	575,222	58,255	516,967
Guatemala	2007	620,534	220,000	400,534	1,344,481	1,000,800	343,681
Guyana	2007	19,124	17,000	2,124	51,874		51,874
Haiti	2007	684,587	145,852	538,735	1,591,021	1,305,932	285,089
Honduras	2007	228,838		228,838	549,585	279,920	269,665
Nicaragua	2007	282,425	441,000	-158,575	726,106	1,248,821	0
Panama	2007	16,956	0	16,956	40,055	1,000	39,055
Peru	2007	834,912	0	834,912	2,137,144	109,900	2,027,244
Venezuela	2007	701,246	0	701,246	1,684,520	35,344	1,649,176
Rest of the 35 countries in the region §	2007	2,707,481	0	2,707,481	6,987,387	0	6,987,387
Total countries that reported	2007	8,052,414	845,488	7,206,926	19,212,555	7,365,903	11,846,652
Total AMRO pop§	2007	10,759,895	845,488	9,914,407	26,199,942	7,365,903	18,834,039

§ The remaining countries of the AMRO region did not report ϕ at risk defined as those without access to basic sanitation

Gaps

- In the period 2006-2008 only **three countries** achieved the minimum 75% coverage target of SAC
 - ✓ Dominican Republic, Ecuador, Nicaragua
- 32 countries did not reach the minimum coverage target
- Children without access to annual; deworming treatment:
 - ✓ 9.9 million of 10.7 million at risk pre-SAC I
 - ✓ 8.8 million of 26.2 million at risk SAC

Possible quick wins

- Inserting deworming into other delivery platforms
 - ✓ primary health care, maternal and child health care, IMCI, vaccination
 - ✓ list of options, best practices.
- Integration with MDA for:
 - ✓ schistosomiasis (with praziquantel) – Suriname, St. Lucia
 - ✓ lymphatic filariasis (with albendazole) – Haiti, Dominican Republic
 - ✓ onchocerciasis
- Integration with HIV/TB/Malaria control programs.
 - ✓ Use malaria diagnostic facilities for diagnosis of STH.
- Deworming integrated with water supply and improved sanitation programs.
- Piggy-backing of deworming with other control programs
 - ✓ Chagas disease and leishmaniasis control programs in Honduras
- Extend coverage to all Pre-SAC - Nicaragua
- Extend coverage to the whole country - Belize

Points for discussion

- Political will and advocacy for 2010
- Country-defined at risk populations:
 - ✓ National
 - ✓ First sub-national level
 - ✓ Municipal
 - ✓ Rural and urban
 - ✓ Gender and ethnicity
- Monitoring and evaluation
- Coordination with schistosomiasis: surveys and treatment in areas of geographical overlap

Thank you very much!



Background slides



Methodology for estimating the number of SAC at risk of soil-transmitted helminths in Latin America and the Caribbean

- We used the year by year United Nations population projections for country and for age for up to the year 2010.
- With this information we calculated the total population in the 5 to 14 age group for each country in the region for the year 2007.
- We used the “Health Situation in the Americas - Basic Health Indicators 2007” document, edited by the HSD/HA unit at PAHO, to estimate the number of SAC living in rural or urban areas in each country.
- We also used the information on this document regarding the percentage of people lacking proper sanitation facilities at the national level for each country, for both urban and rural areas.
- The SAC at risk population for STH in Latin America and the Caribbean Region was thus estimated at **26,199,942** for 2007.
- This figure should be used as the denominator for the coverage of anthelmintic treatment in the region.

Country	SAC Population	Percentage of the Total SAC AMRO population	SAC Urban	SAC High Risk Urban	SAC Rural	SAC High Risk Rural	Total SAC at Risk
Brazil	34,405,717	31.17%	29,313,671	4,983,324	5,092,046	3,207,989	8,191,313
Mexico	21,260,458	19.26%	16,264,250	1,463,783	4,996,208	2,947,763	4,411,545
Peru	5,723,472	5.19%	4,178,135	1,086,315	1,545,337	1,050,829	2,137,144
Venezuela	5,544,832	5.02%	5,212,142	1,511,521	332,690	172,999	1,684,520
Haiti	2,313,977	2.10%	927,905	398,999	1,386,072	1,192,022	1,591,021
Colombia	9,121,335	8.26%	6,685,939	267,438	2,435,396	1,120,282	1,387,720
Guatemala	3,591,989	3.25%	1,727,747	915,706	1,864,242	428,776	1,344,481
Bolivia	2,299,558	2.08%	1,497,012	598,805	802,546	625,986	1,224,791
Nicaragua	1,374,056	1.24%	821,685	361,542	552,371	364,565	726,106
Argentina	6,846,810	6.20%	6,189,516	495,161	657,294	111,740	606,901
El Salvador	1,511,833	1.37%	913,147	210,024	598,686	365,198	575,222
Honduras	1,810,346	1.64%	858,104	111,554	952,242	438,031	549,585
Dominican Rep	2,103,288	1.91%	1,434,442	272,544	668,846	180,588	453,132
Ecuador	2,847,666	2.58%	1,816,811	109,009	1,030,855	185,554	294,563
Paraguay	1,403,717	1.27%	838,019	50,281	565,698	220,622	270,903
Chile	2,712,618	2.46%	2,392,529	119,626	320,089	121,634	241,260
Jamaica	564,767	0.51%	303,280	27,295	261,487	81,061	108,356
Puerto Rico	586,092	0.53%	574,956	97,743	11,136	7,016	104,758
Costa Rica	821,561	0.74%	515,940	56,753	305,621	9,169	65,922
Guyana	158,919	0.14%	44,974	6,296	113,945	45,578	51,874
Panama	652,362	0.59%	472,310	9,446	180,052	30,609	40,055
Belize	69,223	0.06%	33,712	9,776	35,511	26,634	36,410
Cuba	1,448,256	1.31%	1,089,089	10,891	359,167	17,958	28,849
Guadeloupe	71,312	0.06%	71,169	25,621	143	56	25,677
Martinique	56,523	0.05%	55,393	9,417	1,130	712	10,129
French Guiana	45,221	0.04%	34,323	5,148	10,898	4,686	9,835
Netherlands A	28,240	0.03%	20,022	3,404	8,218	5,177	8,581
Aruba	15,077	0.01%	7,041	1,197	8,036	5,063	6,260
Suriname	89,511	0.08%	66,775	668	22,736	5,457	6,124
Saint Lucia	29,427	0.03%	8,151	897	21,276	2,340	3,237
Saint Vincent	22,380	0.02%	10,451	1,777	11,929	477	2,254
Grenada	24,303	0.02%	7,485	299	16,818	505	804
Uruguay	526,924	0.48%	485,824	0	41,100	411	411
Barbados	36,664	0.03%	19,762	198	16,902	0	198
Bahamas	60,473	0.05%	54,909	0	5,564	0	0
Trinidad and	190,286	0.17%	24,547	0	165,739	0	0
Total SAC AMRO Population	110,369,193	100.00%	84,971,168	13,222,457	25,398,025	12,977,486	26,199,942

MDA Coverage for Soil-Transmitted Helminths Latin America and the Caribbean, 2007

