

ANTIRETROVIRAL TREATMENT IN THE SPOTLIGHT:

The HIV epidemic and
continuum of care in
children in Latin America
and the Caribbean



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Abbreviations and acronyms

3TC	lamivudine
ABC	abacavir
AIDS	acquired immune deficiency syndrome
ART	antiretroviral treatment
ARV(S)	antiretroviral(s)
ATV	atazanavir
ATV/r	atazanavir/ritonavir
ddI	didanosine
EFV	efavirenz
FTC	emtricitabine
GRPR	Global AIDS Response Progress Reporting
HIV	human immunodeficiency virus
LA	Latin America
LAC	Latin America and the Caribbean
LPV/r	lopinavir/ritonavir
MOH	Ministry of Health
NNRTI	Non-Nucleoside Reverse Transcriptase Inhibitors
NRTI	Nucleoside Reverse Transcriptase Inhibitors
NVP	Nevirapine
PAHO	Pan American Health Organization
PLHIV	Persons living with the human immunodeficiency virus
PMTCT	Prevention of mother-to-child transmission
TDF	Tenofovir
UNAIDS	Joint United Nations Program on HIV/AIDS
VL	viral load
WHO	World Health Organization

Executive summary

This year's edition of Antiretroviral Treatment in the Spotlight includes a public health analysis of the HIV epidemic and the continuum of care and antiretroviral treatment for children (0-14 years old) living with HIV in Latin America and the Caribbean (LAC).

The main objective of this report is to identify progress, gaps and challenges in the response to children living with HIV. The aim is to contribute to a more focused, effective and accelerated response towards achieving the 90-90-90 targets on HIV diagnosis, treatment and viral load suppression among this vulnerable population by 2020.

The report includes an overview of estimates and trends for children living with HIV, children newly diagnosed, and HIV-related deaths. Additionally, the report includes key information on policies, and programmatic inputs, outputs and outcomes. The document is supported with secondary data from PAHO Member States from the UNAIDS Global AIDS Response Progress Reporting (GARPR) and the UNAIDS Spectrum Estimates.

The main findings show that since 2007, the number of children living with HIV in LAC has continuously decreased. This may be due to the reduction in new HIV infections achieved by interventions that prevent mother-to-child transmission (PMTCT), (which has overridden the concomitant reduction in the number of deaths) and to the fact that children who access pediatric care and treatment programs survive longer, and gradually transition to adult care (and therefore are no longer counted in estimates of children ages 0-14 living with HIV).

In 2014, approximately 22,000 children in the region received ART, an increase of 5% from 2013. Of all children with HIV who were receiving antiretroviral treatment (ART), 70% lived in six countries (Argentina, Brazil, Colombia, Ecuador, Haiti and Mexico). In LAC, ART coverage in children (49% [43%-57%]) continues to be higher than ART coverage in adults (46% [39.5%-55%]). When data is disaggregated by sub-region, ART coverage in children in Latin America is higher than ART coverage in children in the Caribbean.

During 2014 in the region, retention on ART at 12 months and virological response to treatment were lower in children 0-14 years old compared to adults and children older than 15. According to data from 12 countries in LAC, 73% of children with HIV were on treatment 12 months after ART was initiated. The percentage of children reported as virally suppressed presented a median of 61%, with an average of 73% (data from 10 countries in LAC).

In Latin America, the number of health facilities offering pediatric ART increased by 11% from 2013 to 2014. In the Caribbean, the number of health facilities offering pediatric ART remained steady.

In 2014, 60% of children on ART were on a first-line regimen, 37% on a second-line regimen and 3% on a third-line regimen. Of the children on first-line regimens, the vast majority (96%) were on WHO-recommended regimens (either preferred or alternative); of the children on second-line regimens, a little more than half was on WHO-recommended regimens.



WHO recommendations for pediatric treatment initiation have been adopted more slowly than the recommendations for treatment initiation in adolescents and adults. In 2014, 72% of 25 reporting countries had completed the national process of adopting the 2013 WHO consolidated guidelines on the use of ARV drugs for treating and preventing HIV infection in children; 24% reported the process as ongoing.

In the same year, thirty-eight percent (38%) of countries initiated ART irrespective of CD4 percentage/count or symptoms using an age cut-off of less than 1 year, and only one third of countries were using 5 years as the age cut-off for ART initiation. Eighty-nine percent (89%) of countries had fully implemented the use of viral load for monitoring children on treatment; 11 % were phasing-in.

This report identifies several challenges in the provision of HIV care in children in the region. The first is that many countries still do not report data disaggregated by major age groups. This is an impediment to adequately monitoring and performing a reliable and representative analysis for improving the HIV response

focused on specific population age groups—in this case, children and adolescents younger than 15. The second challenge is that countries need to accelerate the national adaptation and adoption of WHO recommendations. This is especially important in light of the recent release of the 2015 guidelines recommending a “treat all” approach—i.e., universal treatment for all children and adolescents, regardless of immunological stage and clinical symptoms. The third challenge is the need to improve retention, adherence and successful virological outcomes in children on ART. Optimizing pediatric treatment through the use of new formulations (oral pellets, scored and dispersible tablets) and fixed-dose combinations of ARV medicines may improve such outcomes. Finally, there is still an important gap in treatment: in Latin America and the Caribbean, more than half the children living with HIV are not receiving treatment.

The Region has made great advances in HIV response in children, but a more focused and optimized approach to care and treatment may accelerate progress towards achieving the 90-90-90 targets in this vulnerable population, thus contributing to ending AIDS by 2030.



1.

Introduction and objectives

Introduction

In 2012, PAHO published the first Antiretroviral Treatment in the Spotlight: an Analysis of Public Health in Latin America and the Caribbean [1], highlighting the progress achieved towards universal access to ART in LAC, as well as key aspects of ART program management and monitoring of the continuum of HIV care. This year's edition includes a public health analysis on the HIV epidemic and the continuum of care and antiretroviral treatment among children living with HIV in LAC.

Significant progress has been made in LAC towards achieving Fast Track care and treatment targets (named 90-90-90) by 2020 [2]. Nevertheless, children living with HIV continue to be some of the most vulnerable members of society and deserve special attention.

Countries in the region have made great progress reducing the number of new infections in children through mother-to-child transmission of HIV. Even so, every year there are approximately 2,500 new infections and an estimated 46,000 children younger than 15 are in need of care and treatment services [3].

Objectives

The main objective of this report is to identify progress, gaps and challenges in the HIV response in children in LAC and to contribute to a more focused, effective and accelerated response for achieving the 90-90-90 targets (for diagnosis, treatment and viral load suppression) in this population by 2020.

The report includes an overview of estimates and trends for children newly infected and living with HIV, children AIDS-related deaths, and key information on policies, inputs, outputs and outcomes of the programmatic response.

2.

Methodology

The information presented is based on secondary data reported from PAHO Member States through the UNAIDS Global AIDS Response Progress Reporting (GARPR) and the UNAIDS Spectrum Estimates. In this document, the age range to define children is based on the one used in the GARPR and the UNAIDS Spectrum Estimates for age disaggregate reporting of indicators and

estimates, respectively. Accordingly, children refer to both boys and girls 0-14 years old, unless otherwise noted. Data disaggregated by sex is currently unavailable; therefore, no gender analysis was performed. Analysis includes the regional, sub-regional and national levels based on availability of data. An account of sources is presented in Table 1.

Table 1. Data sources by indicator

INDICATOR	SOURCE
<ul style="list-style-type: none"> • Number of children newly infected • Number of children living with HIV • Number of children's AIDS-related deaths 	UNAIDS. How AIDS Changed Everything, 2015
<ul style="list-style-type: none"> • Children in HIV care 	UNAIDS Progress reports submitted by countries under the Global AIDS Response Progress Reporting, 2015
<ul style="list-style-type: none"> • Number of children living with HIV on ART, 2010-2014 • Number of adolescents and adults living with HIV on ART 	UNAIDS Progress reports submitted by countries under the Global AIDS Response Progress Reporting, 2010-2014
<ul style="list-style-type: none"> • Health facilities offering pediatric ART • HIV treatment (ART): 12 months retention • Viral load suppression • Undetectable viral load • Pediatric treatment centers • Policies related to HIV care 	UNAIDS Global AIDS Response Progress Reporting (GARPR) 2014
<ul style="list-style-type: none"> • Distribution of pediatric patients (0-10 years old) per line of ARV treatment, 2013-2014 • Percentage of first- and second-line regimens in select countries in LAC, 2014 • Percentage of children (0-10 years old) on more commonly used first- and second-line ART regimens in LAC, 2014 	WHO AIDS Medicines and Diagnostics Service (AMDS) Surveys, 2014-2015, submitted by countries to PAHO/WHO



3.

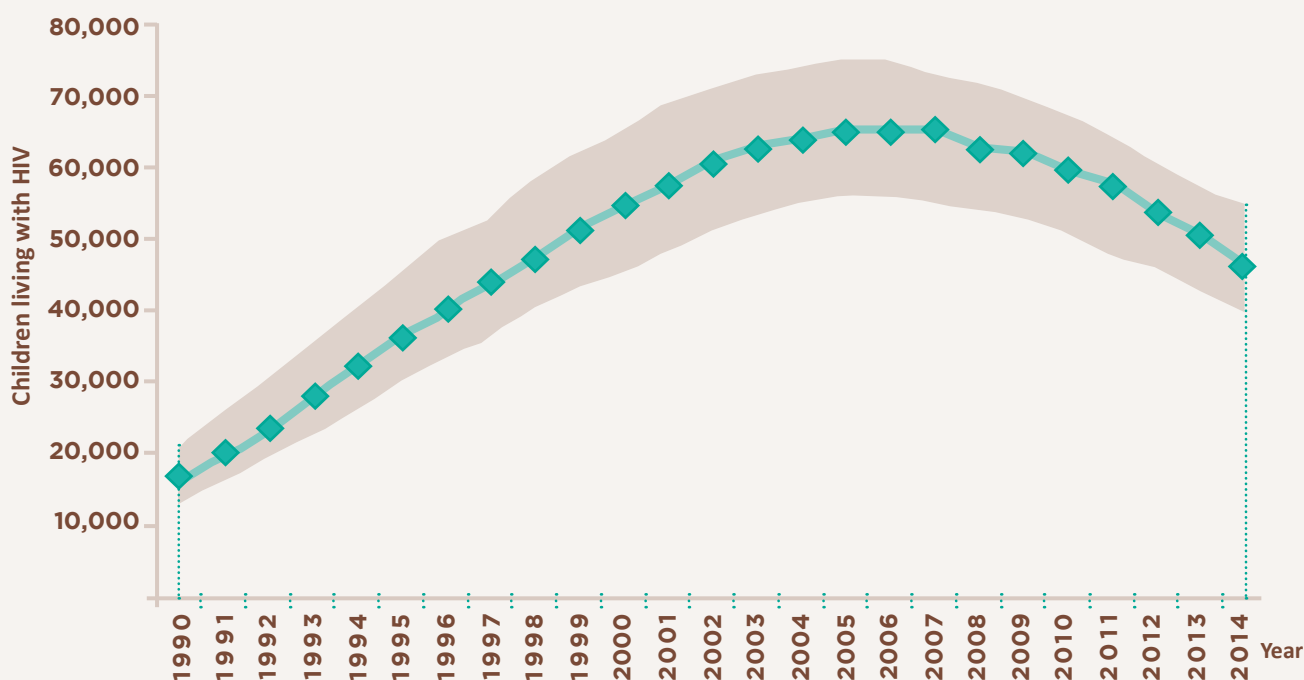
HIV epidemic in children in Latin America and the Caribbean

This section provides an overview of the HIV epidemic in children (0-14 years old) including current estimates, as well as temporal trends in the number of children living with HIV, new HIV infections and AIDS-related deaths in children in Latin America and the Caribbean.

Children living with HIV

- In LAC, the estimated number of children living with HIV in the region increased throughout the 1990s and the first half of the following decade, reaching a peak in 2005-2007. After 2007, this number continuously declined.
- In 2014 at regional level, 46,000 (40,000-55,000) children were estimated to be living with HIV. **(Figure 1).**
- In Latin America, approximately 33,000 (29,000-40,000) children were estimated to be living with HIV in 2014.
- In the Caribbean, approximately 13,000 (11,000-15,000) children were estimated to be living with HIV in 2014.
- In LAC, the estimated number of children living with HIV decreased substantially since the peak in 2005-2007 (Overall, the number dropped 28% between 2007 and 2014 – 25% in Latin America since the pick in 2005 to 2014, and 35% in the Caribbean since the pick in 2003 to 2014.)

Figure 1. Estimated number of children (0-14 years old) living with HIV in Latin America and the Caribbean, 1990-2014



Source: UNAIDS. "How AIDS Changed Everything," 2015

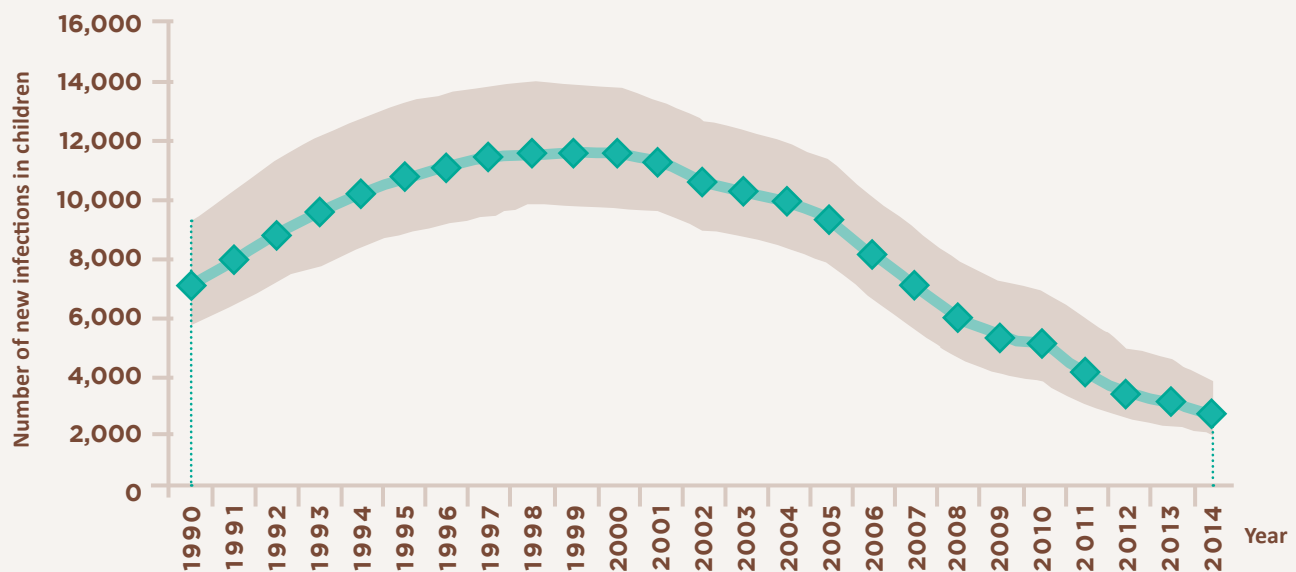
New infections among children in Latin America and the Caribbean

- In 2014, there were an estimated 2,500 (1,678-3,547) new HIV infections in children in LAC (14% decrease since 2013). **(Figure 2)**. Approximately 2,000 (1,325-2,871) were in Latin America; less than 500 (353-676) were in the Caribbean.
- The estimated number of children newly infected with HIV in LAC peaked and then plateaued between 1998 and 2001. After

2001, new infections steadily decreased through 2014 (78% decrease since the peak in 1999-2001).

- Regarding the sub-regions: in 2014, Latin America achieved 73% reduction in new infections since the peak in 2000. The total reduction in the number of new cases from 2013 to 2014 was 17%. In the Caribbean, figures decreased 88% from the peak in 1997-1999 to 2013, and data showed no reduction in these estimates between 2013 and 2014.

Figure 2. Estimated new HIV infections in children (0-14 years old) in Latin America and the Caribbean, 1990-2014



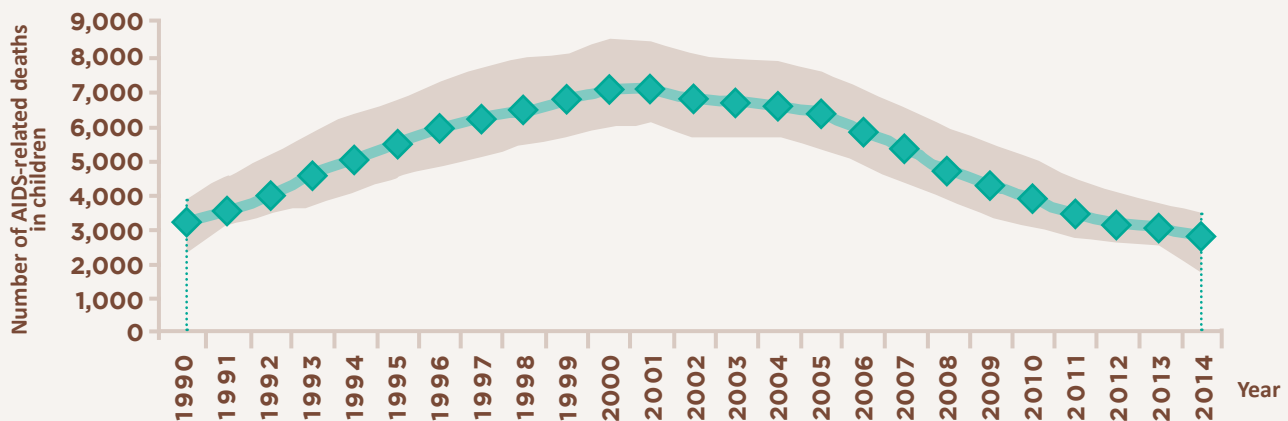
Source: UNAIDS. "How AIDS Changed Everything," 2015

AIDS-related deaths among children

- The estimated number of AIDS-related deaths in children in LAC increased throughout the 1990s, peaked and plateaued in 2000-2001 and then continuously decreased. From 2000 to 2014, the number has decreased by 60%.
- In 2014, the estimated number of AIDS-related deaths in children in LAC was 2,800 (1,800-3,500), a 7% decrease since 2013. **(Figure 3).**

- In Latin America, there were approximately 1,800 (1,300-2,500) estimated AIDS-related deaths among children; in the Caribbean, there were less than 1,000 (500-1,000).
- By 2014, in Latin America, AIDS-related deaths in children decreased 10% from 2013, and 60% from the peak in 2000-2001. In the Caribbean, by 2014 the number decreased 58% since the peak in 2000-2002.

Figure 3. Estimated AIDS-related deaths in children (0-14 years old) in Latin America and the Caribbean 1990 -2014



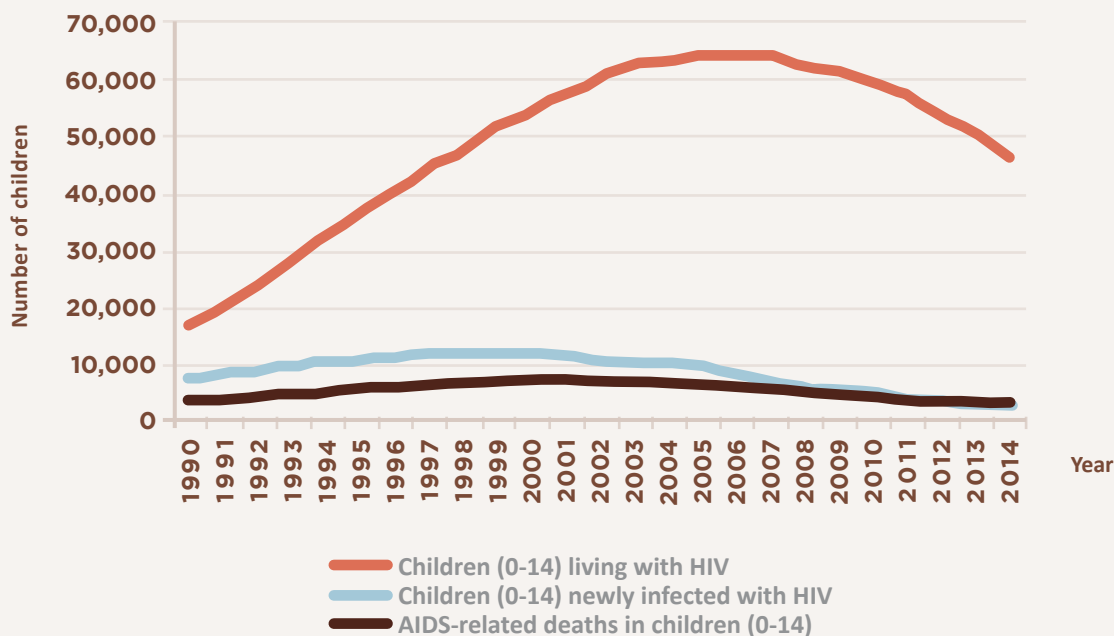
■ Source: UNAIDS. "How AIDS Changed Everything," 2015

In the 1990s, the estimates of children newly infected with HIV outnumbered AIDS-related deaths by 40 to 50%. Since 2000, the difference between new infections and AIDS-related deaths gradually decreased until the values converged in 2012. Since then, the number of AIDS-related deaths has exceeded the number of children newly infected with HIV. The trend is similar in both Latin America and the Caribbean.

After 2001, the estimated number of new HIV infections and AIDS-related deaths in

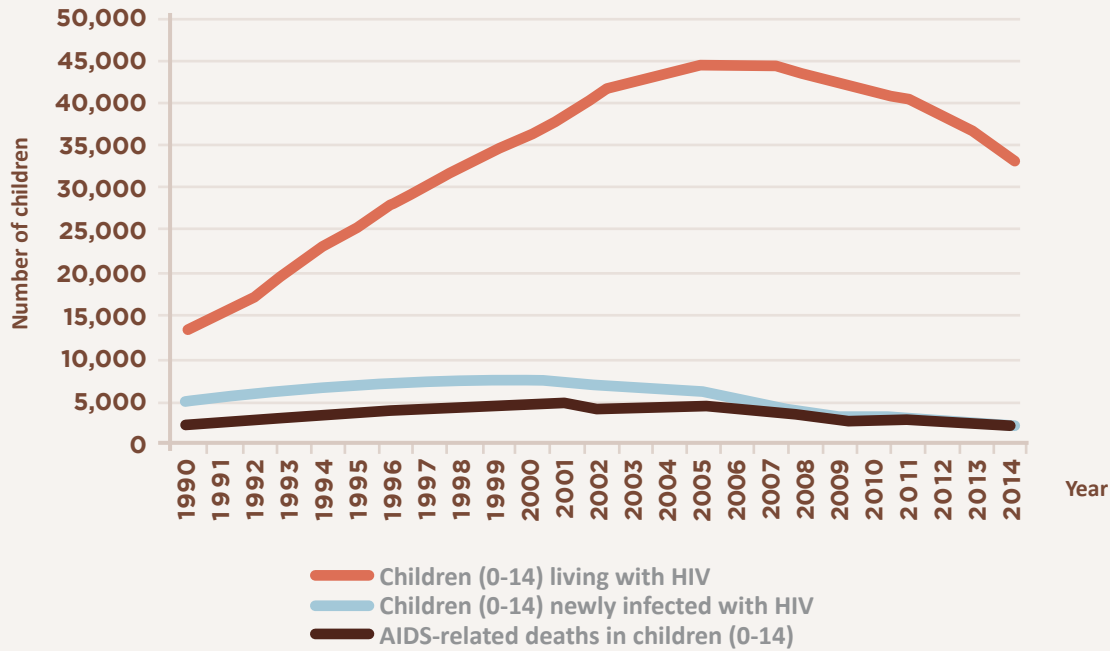
children in LAC continuously decreased through 2014. This decrease, which began after 2001 and picked up pace after 2005, was most likely due to the scale-up of interventions for the prevention of mother-to-child transmission (PMTCT), and HIV care and treatment programs [3]. **(Figures 4, 5 and 6)**. Thanks to these programs, fewer children were newly infected with HIV through vertical transmission; those who did become infected were put into pediatric HIV care and treatment programs and survived on ART.

Figure 4. Estimated number of children living with HIV, and new HIV infections and AIDS-related deaths in children (0-14 years old) in Latin America and the Caribbean, 1990-2014



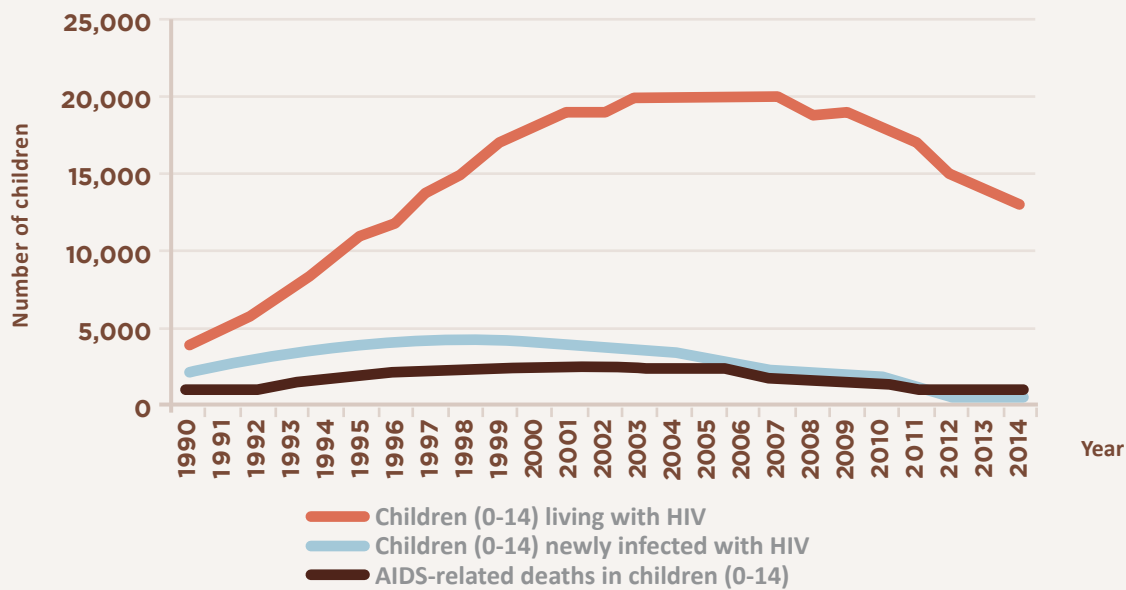
Source: UNAIDS. "How AIDS Changed Everything," 2015

Figure 5. Estimated number of children (0-14 years old) living with HIV, new HIV infections and AIDS-related deaths in Latin America, 1990-2014



Source: UNAIDS. "How AIDS Changed Everything," 2015

Figure 6. Estimated number of children (0-14 years old) living with HIV, new HIV infections and AIDS-related deaths in children in the Caribbean, 1990-2014



Source: UNAIDS. "How AIDS Changed Everything," 2015

The number of children younger than 15 living with HIV in LAC has continuously decreased since 2007. There are two likely reasons: (a) the scale-up of services aimed at preventing mother-to-child transmission resulted in fewer new HIV infections, and (b) children younger than 15 who received pediatric care and treatment services survived longer, transitioned into the next age group (older

than 15) and were therefore no longer included in estimates of children 0-14 year olds living with HIV.

(For a summary of the data presented in this section see **Appendix table 6.**)



4.

The continuum of HIV care in children in Latin America and the Caribbean

This section provides an overview of the current state of the continuum of HIV care and treatment in children (0-14 years old) in Latin America and the Caribbean. It focuses on access to antiretroviral treatment (ART), retention and viral suppression on ART, an updated analysis of the use of antiretroviral (ARV) medicines in children, as well as on opportunities for optimizing pediatric HIV treatment.

Health facilities offering pediatric ART

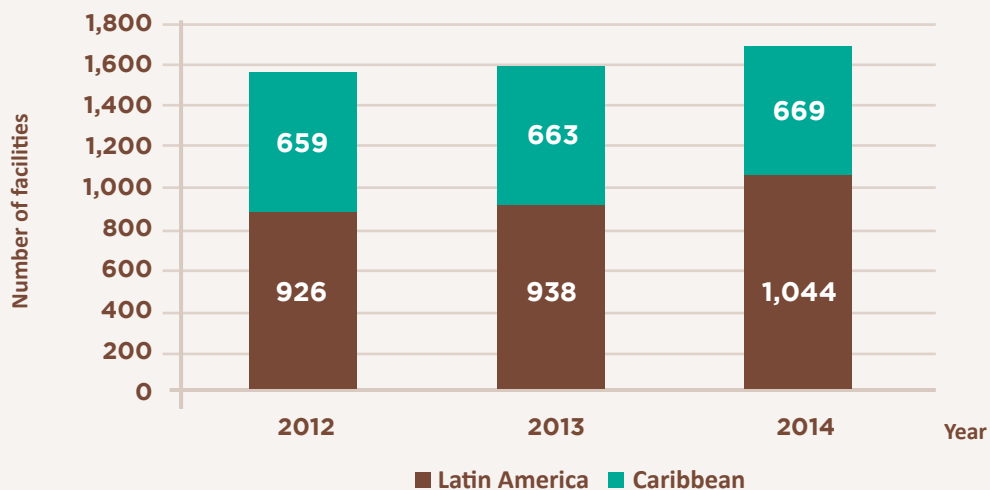
In 2014, there were approximately 1,700 health facilities offering HIV care and ART for children living with HIV in Latin America and

the Caribbean (an 8% increase since 2012). (Figure 7 and Appendix Table 1).

In Latin America between 2012 and 2014, the number of health facilities offering pediatric ART increased by 13%. During the same period, the number of pediatric ART sites increased in 69% of countries (11 of 16 reporting countries) but decreased in Chile, Ecuador, and Venezuela.

In the Caribbean between 2012 and 2014, the number of health facilities offering pediatric ART remained unchanged in 69% of reporting countries; increased in the Bahamas, the Dominican Republic, Guyana and Saint Lucia; and decreased (by three sites) in Haiti.

Figure 7. Number of health facilities in the Caribbean and Latin America offering pediatric ART, 2014



Source: UNAIDS/WHO. Global AIDS Response Progress Reports, 2013, 2014, 2015

These results show that most countries, especially in Latin America, are expanding access to HIV care and treatment for children by increasing the number of facilities that provide pediatric ART. Although the number of children living with HIV is expected to decrease, in those countries where HIV care and treatment are being gradually decentralized, the number of sites that offer pediatric HIV care and treatment may increase.

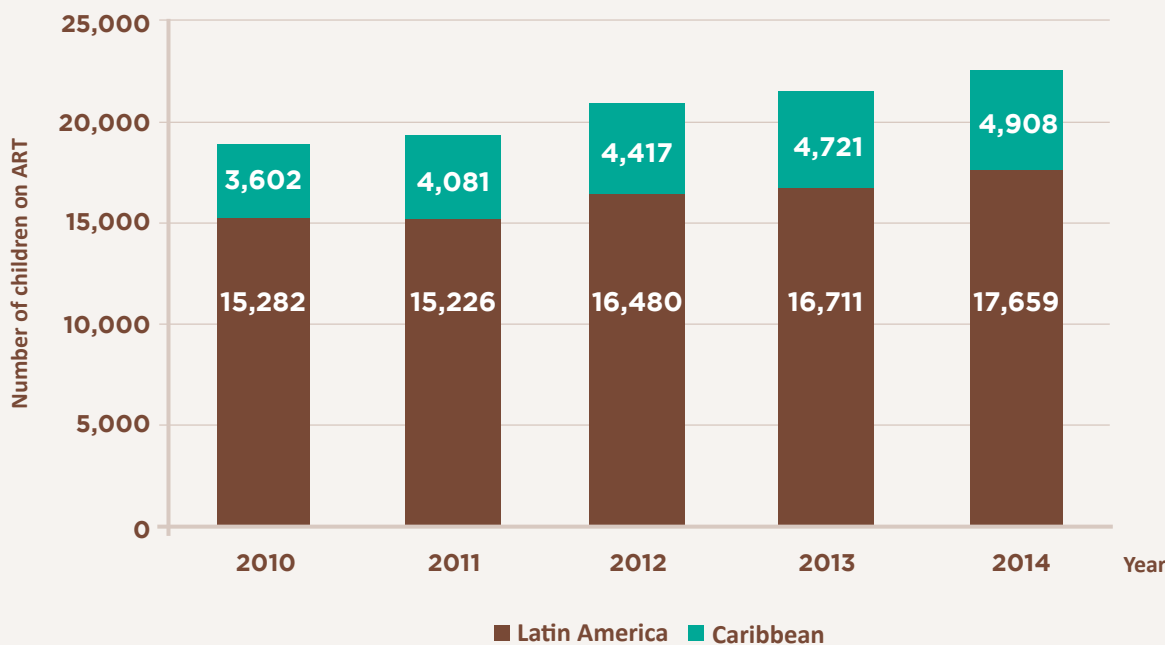
Children receiving ART and ART coverage

- The number of children on ART continues to increase in the region; in 2014, 22,567 children received ART in LAC (including

high-income countries), a 5% increase since 2013. **(Figure 8, Appendix Table 2).**

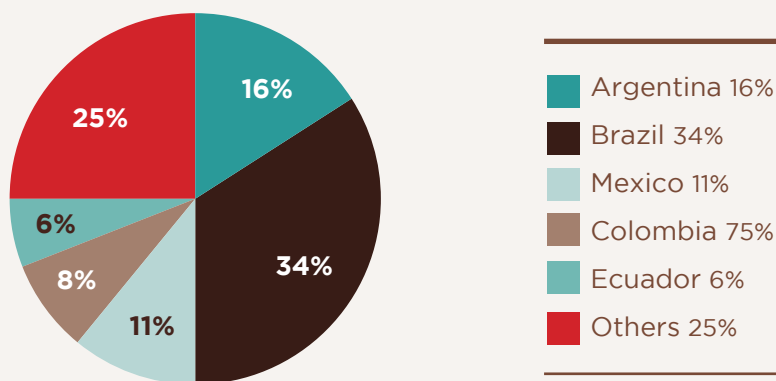
- In Latin America in 2014, 17,659 children received ART, a 6% increase since 2013; in the Caribbean, 4,908 received ART, a 4% increase since 2013.
- In 2014 in Latin America, 75% of children living with HIV on ART were from five countries: Brazil (34%), Argentina (16%), Mexico (11%), Colombia (8%) and Ecuador (6%). In the Caribbean in 2014, 91% of children living with HIV on ART were from three countries: Haiti (60%), the Dominican Republic (19%) and Jamaica (12%). **(Figures 9 and 10).**

Figure 8. Number of children (0-14 years old) on HIV ART in Latin America and the Caribbean, 2010-2014



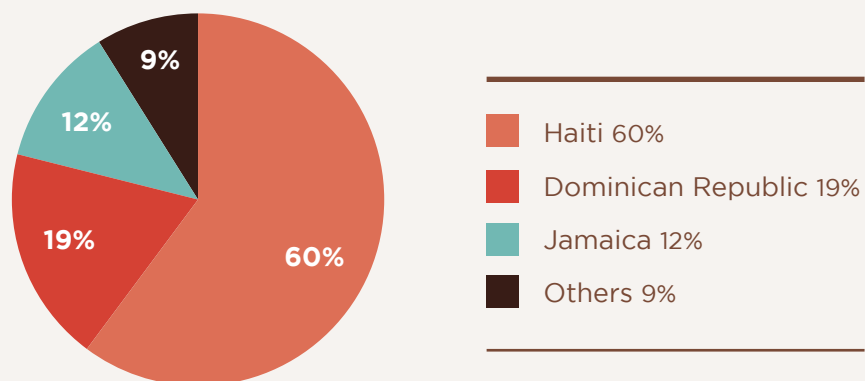
Source: UNAIDS Progress Reports submitted by countries, 2011-2015

Figure 9. Distribution of children (0-14 years old) living with HIV on ART by country in selected countries in Latin America, 2014



Source: UNAIDS Spectrum Estimates; UNAIDS Progress reports submitted by countries, 2015

Figure 10. Distribution of children (0-14 years old) living with HIV on ART by country in selected countries in the Caribbean, 2014



Source: UNAIDS Spectrum Estimates; UNAIDS Progress reports submitted by countries, 2015

Antiretroviral treatment coverage in children in LAC is similar to that of adults. In 2014, pediatric ART coverage was 49% (43%-57%), compared to 46% (40%-55%) in adults (Figure 11) – a 6% increase in pediatric ART coverage since 2013.

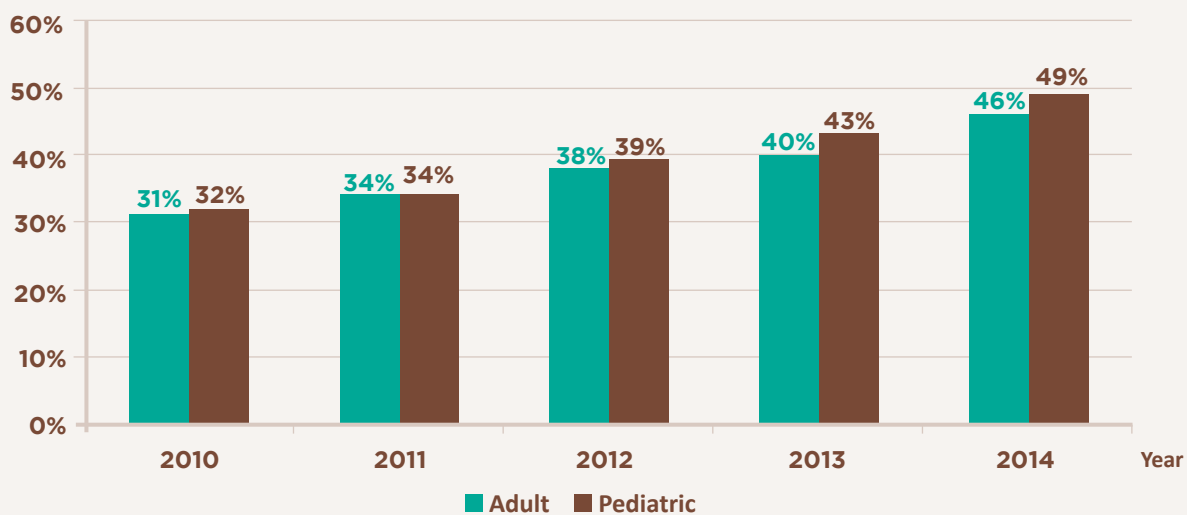
When disaggregated by sub-region, pediatric ART coverage in 2014 was 55% (46%-64%) in Latin America compared to 46% (40%-56%) in adults; in the Caribbean, pediatric ART coverage was 35% (32%-42%) compared to 42% (33%-54%) in adults. (Figures 12 and 13).

Countries with the highest pediatric ART coverage include Belize (85%) and Jamaica

(80%) in the Caribbean, and El Salvador (63%) and Mexico (63%) in LA. Countries with the lowest coverage include the Dominican Republic (28%) and Haiti (35%) in the Caribbean, and Bolivia (21%), Venezuela (33%), Nicaragua (35%) and Guatemala (35%) in LA.

The data highlight that the gap in access to treatment for children is much higher in the Caribbean than in Latin America; the difference is due mainly to the low rate of coverage in the Dominican Republic and Haiti, where an estimated 89% of all HIV-infected children in the Caribbean live.

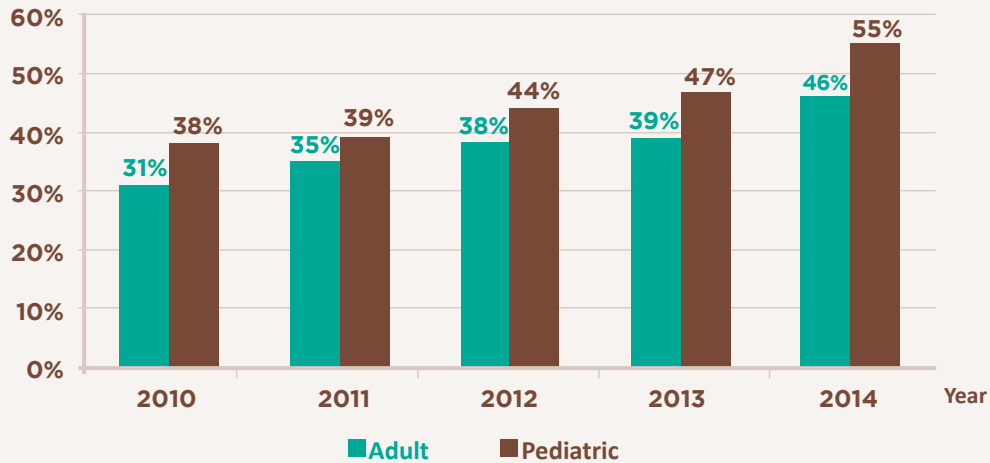
Figure 11. Proportion of adult and pediatric ART coverage in Latin America and the Caribbean, 2010-2014



Source: UNAIDS Spectrum Estimates, 2015

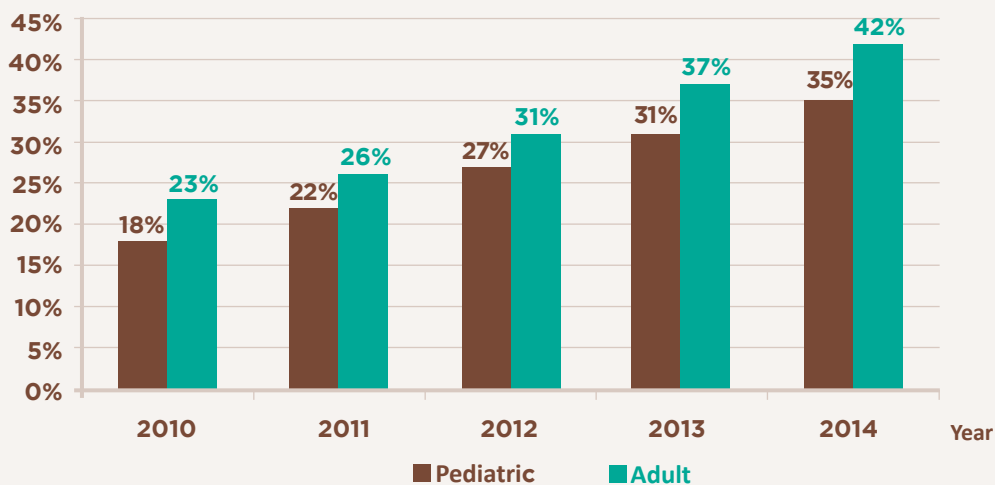
Note: Pediatric ART coverage is among 0-14 year olds. Adult ART coverage is among 15 year olds and older.

Figure 12. Proportion of adult and pediatric ART coverage in Latin America, 2010-2014



■ **Source:** UNAIDS Spectrum Estimates, 2015
 ■ **Note:** Pediatric ART coverage is among 0-14 year olds. Adult ART coverage is among 15 year olds and older.

Figure 13. Proportion of Adult and pediatric ART coverage in the Caribbean, 2010-2014



■ **Source:** UNAIDS Spectrum Estimates, 2015
 ■ **Note:** Pediatric ART coverage is among 0-14 year olds. Adult ART coverage is among 15 year olds and older.

Children in HIV Care

In Latin America and the Caribbean, most HIV-positive children are infected by vertical transmission during pregnancy, childbirth or breastfeeding [4] [5] [6]. HIV is more aggressive in children; half of them die before the age of two if no intervention is provided [7] [8]. Better prevention of mother-to-child transmission of HIV (PMTCT) has helped to reduce the number of HIV infections in children, but there are still gaps in access to proper HIV diagnosis, care and treatment.

Limited data is available on children in care in 2014 (**Table 2**) since only 13 countries reported this indicator disaggregated by age. In addition, the quality of this data may pose obstacles. Challenges include the use of different operational definitions based on clinical, pharmacy or laboratory criteria to enroll children in care, double counting of children and lack of updated databases. Available data show that some LA countries (e.g., Brazil, Mexico and Paraguay) have the lowest proportion of children on ART among all HIV-positive children in care in country.

Table 2. Proportion of children in care receiving antiretroviral treatment in reporting countries from Latin America and the Caribbean, 2014

COUNTRY	NUMBER OF CHILDREN LIVING WITH HIV	NUMBER OF CHILDREN IN CARE (TOTAL ENROLLED)	NUMBER OF CHILDREN IN CARE RECEIVING ART	PROPORTION OF CHILDREN IN CARE RECEIVING ART
Bahamas (the)	--	70	53	76%
Cuba	--	31	28	90%
Trinidad and Tobago	--	119	113	95%
Brazil	11,000-17,000	18,667	5,768	31%
Chile	--	250	171	68%
Honduras	1,900 (1,700 – 2,200)	700	700	100%
Mexico	2,900 (2,200 – 3,800)	5,934	1,815	31%
Panama	<500 (<500 - <500)	276	159	58%
Paraguay	<500 (<500 - <1,000)	467	187	40%

■ **Source:** UNAIDS/WHO Country Global AIDS Response Progress Reports, 2015

■ **Notes:** The table shows data from only 9 of the 13 reporting countries; data from the remaining 4 countries is not showed due to inconsistency.

The number of children in HIV care in Brazil and Mexico reported in GARPR is higher than the number of children living with HIV reported in Spectrum.

Pediatric ART retention

In LAC, data on retention of pediatric patients who are on treatment 12 months after initiating ART is available from just 12 countries (Table 3). In 2014, approximately 73% of children who began ART remained on treatment after

12 months, compared to 75% of adults in the same subset of countries. Most countries show fair to high retention rates (greater than 70%). Exceptions are Suriname (36%), Mexico (58%) and Belize (63%). Overall, the retention rate decreased between 2011 and 2014.

Table 3. Pediatric 12-month ART retention in reporting countries from Latin America and the Caribbean, 2011-2014

COUNTRY	2011			2012			2013			2014		
	N	D	%	N	D	%	N	D	%	N	D	%
Caribbean												
Belize	NR	NR	NR	NR	NR	NR	NR	NR	NR	5	8	63%
Cuba	3	3	100%	2	2	100%	0	1	0	5	6	83%
Guyana	18	22	82%	29	31	94%	10	16	63%	20	22	91%
Suriname	7	9	78%	7	14	50%	NR	NR	NR	5	14	36%
Trinidad and Tobago	NR	NR	NR	5	6	83%	3	3	100%	3	3	100%
Latin America												
Brazil	788	910	87%	736	863	85%	756	911	83%	738	979	75%
El Salvador	17	20	85%	NR	NR	NR	15	19	79%	13	17	76%
Honduras	51	60	85%	27	28	96%	38	46	83%	34	36	94%
Mexico	175	203	86%	197	211	93%	335	363	92%	149	257	58%
Nicaragua	8	8	100%	15	21	71%	16	16	100%	17	18	94%
Paraguay	NR	NR	NR	NR	NR	NR	NR	NR	NR	20	23	87%
Uruguay	2	4	50%	9	10	90%	12	12	100%	6	6	100%
Totals*			86%			86%			85%			73%

2014 Retention in children: Median= 85%; Average=73%

2014 Retention in adults: Median=79%; Average=75%

Source: UNAIDS/WHO Country Global AIDS Response Progress Reports, 2012-2015

Note: ART retention is defined as the percentage of children with HIV known to be on treatment 12 months after initiation of antiretroviral therapy.

N (numerator) is the number of children who are still alive and on antiretroviral therapy at 12 months after initiation of antiretroviral therapy.

D (denominator) is the total number of children who initiated ART who were expected to achieve 12-month outcomes within the reporting period; it includes those who died since starting antiretroviral therapy, those who stopped antiretroviral therapy, and those recorded as lost to follow-up at month 12.

NR: not reported.

*Totals have been calculated imputing figures for missing years for those countries with information available for at least one year.

Viral load suppression among children on ART

The WHO 2015 Consolidated ARV guidelines recommend periodic measurement of plasma HIV viral load as the preferred laboratory monitoring approach to assess the effectiveness of treatment, as well as to detect and confirm virological treatment failure. **Viral suppression** is considered ≤ 1000 copies/ml.

In LAC, data on suppressed and undetectable viral loads (values below the limit of detection used as a reference in the country) in children under 15 receiving ART is still limited. In 2014, only 10 countries reported on viral suppression and 7 on **undetectable viral loads** during ART. In reporting countries, the average proportion of children under 15 years old on ART who were tested for viral loads and who were virally suppressed was approximately 73%, with a median of 61%; for children older than 15 and adults on ART, the average was 87%. In the same year, the average proportion of children under 15 on ART with undetectable

viral loads was 58% with a median of 57%. (**Appendix Tables 3-4**).

In summary, many countries do not report data disaggregated by major age groups. Available data in the region indicates that levels of ART coverage are similar among children and adults. However, data disaggregated by sub-regions shows that ART coverage is higher in Latin America than in the Caribbean for both children and adults. In Latin America, levels of ART coverage are 7% higher among children than among adults. In contrast, in the Caribbean, ART coverage is 8% lower in children than in adults. At regional level, treatment retention at 12 months was 2% lower in children than in adults. Children younger than 15 have suppressed viral loads that are 14% lower than loads in children older than 15 and adults. The percentage of undetectable viral loads in children younger than 15 was 58% in the region.

(For a summary of the data presented in this section see **Appendix Table 6**.)



El Salvador's analysis of the continuum of HIV care cascade in children and adolescents (0-18 years old)

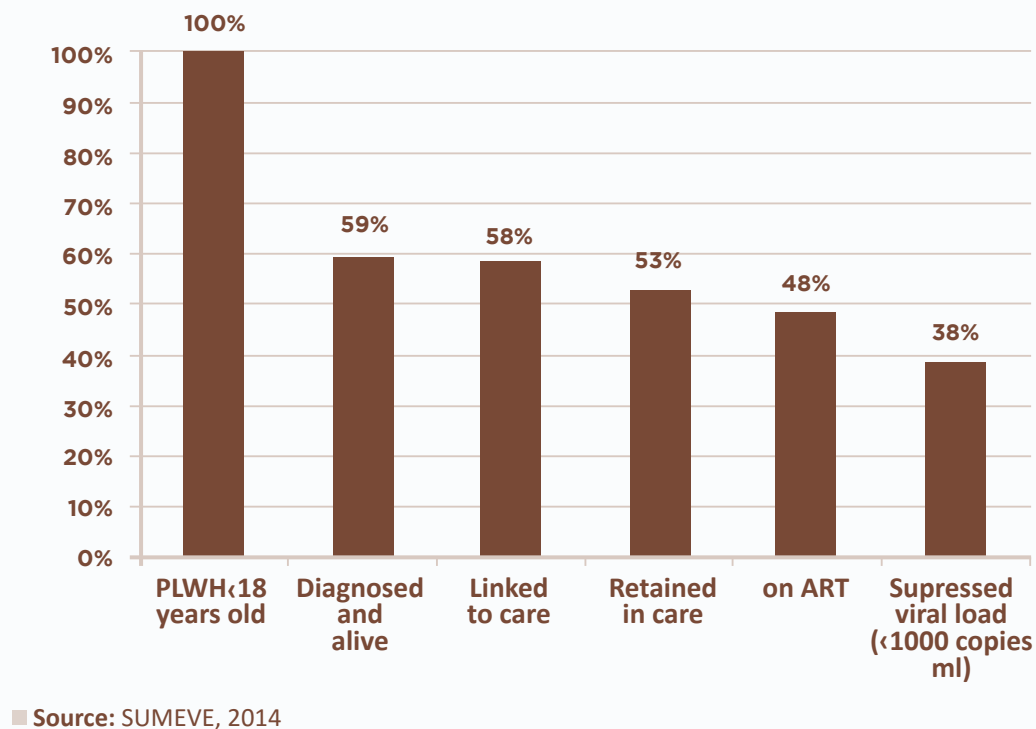
In 2014, El Salvador used clinical monitoring data from public health centers providing ART to conduct an assessment of the HIV care cascade in children. This information is compiled in the Unified HIV Monitoring, Evaluation and Epidemiological Surveillance System (SUMEVE, for its initials in Spanish).

Data regarding children and adolescents less than 18 years of age with HIV was analyzed and disaggregated in two groups according to

the health facility providing HIV care. The first group was data from the National Children's Hospital "Benjamin Bloom", the referral center for pediatric care serving the largest number of children with HIV in the country. The second group was data from the remaining centers providing pediatric HIV care.

The national continuum of care cascade shows that of the estimated 806 children and adolescents less than 18 years of age living with HIV, 59% were diagnosed, 58% were linked to care, 48% were on ART, and the 38%, (the majority [79%] of those receiving ART) were virally suppressed. **(Figure 14)**

Figure 14. HIV care cascade in El Salvador among children and adolescents (0 -18 years old), 2013

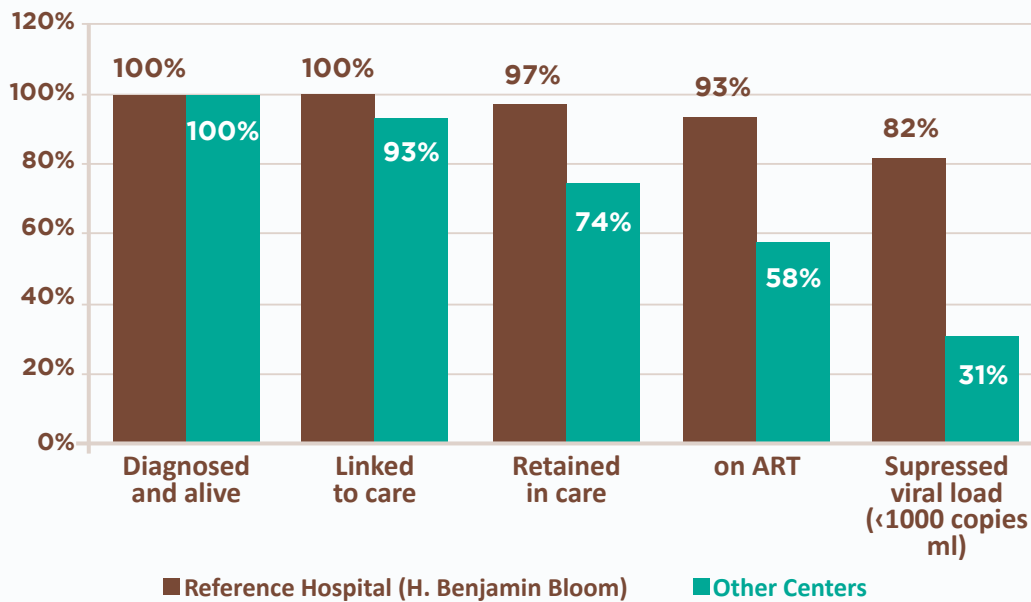


Disaggregated analysis shows differences in the quality of care depending on the providing center, with better results in the referral hospital (**Figure 15**).

This type of analysis helps identify gaps in care than can lead to corrective measures at the local level.

This is a good example that other countries in Latin America and the Caribbean can use to monitor access to HIV care and HIV care outcomes in the pediatric population and to define areas of improvement.

Figure 15. Pediatric HIV continuum of care cascade in (0 - 18 years old), by healthcare center in El Salvador, 2013



Source: Castañeda L. et al. 2014. Unpublished.

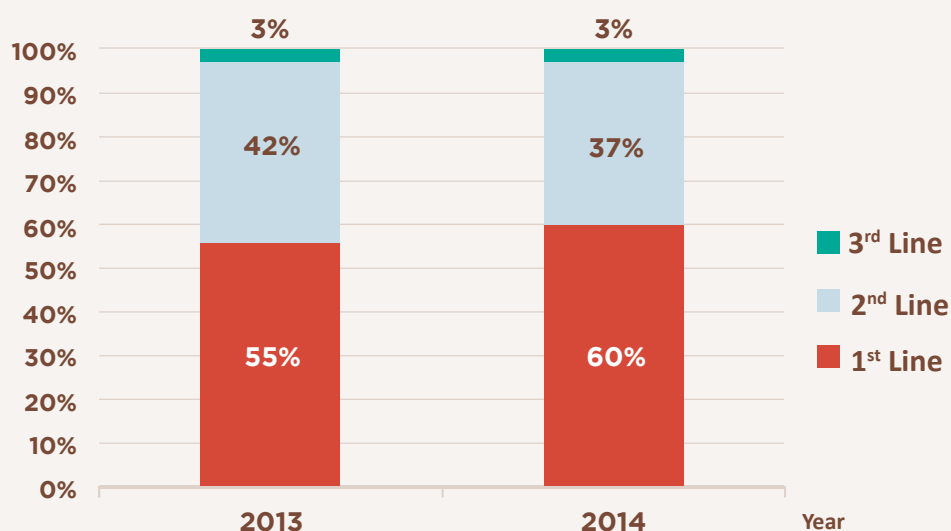


5.

Optimization of antiretroviral treatment in children

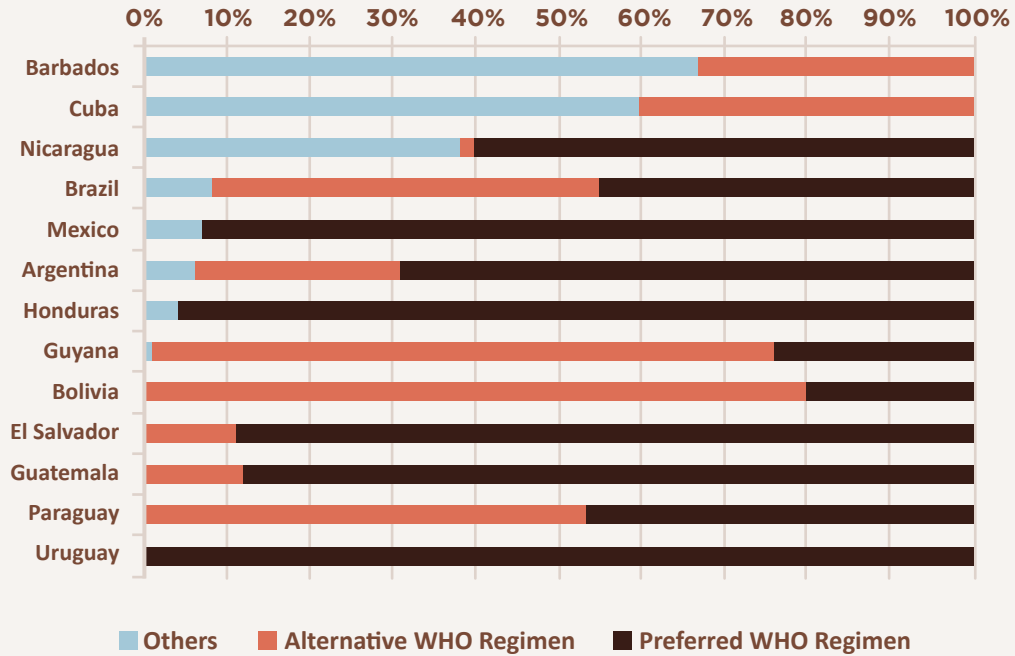
- Data on ART regimens are available from 13 LAC countries for 6,834 children (0-10 years old) on ART in 2014.
- In 2014, 60% of children (0 -10 years old) on ART were receiving a first-line regimen, 5% more than in 2013; another 37% were receiving a second-line regimen and 3% were receiving a third-line regimen. Thus, 40% of children likely experienced a treatment failure and are carrying a drug-resistant virus. **(Figure 16).**
- The median number of first-line regimens in use in 2014 was 4, similar to 2013.
- In 2014, 96% of pediatric patients on first-line regimens were receiving either a preferred or alternative WHO-recommended regimens, **(Figure 17)**, based on WHO 2013 guidelines. The most commonly used regimens were AZT+3TC+EFV (37%), AZT+3TC+LPV/r (25%) and AZT+3TC+NVP (23%). **(Figure 18).**
- In contrast, approximately 54% of children in 2014 received a WHO-recommended second-line regimen, either preferred or alternative; ABC+3TC+LPV/r (38%) and AZT+3TC+LPV/r (19%) were the most commonly used regimens. **(Figure 19).**
- Obsolete and non-recommended drugs (ddl and d4T) are in the process of being phased out; only approximately 2% of children on ART in the region are still receiving regimens containing obsolete drugs. In 2014, only four countries (Cuba, Guatemala, Honduras and Nicaragua) still reported using ddl or d4T in pediatric patients; those were generally for second- and third-line regimens.

Figure 16. Distribution of children (0-10 years old) per line of ARV treatment in Latin America and the Caribbean, 2013-2014



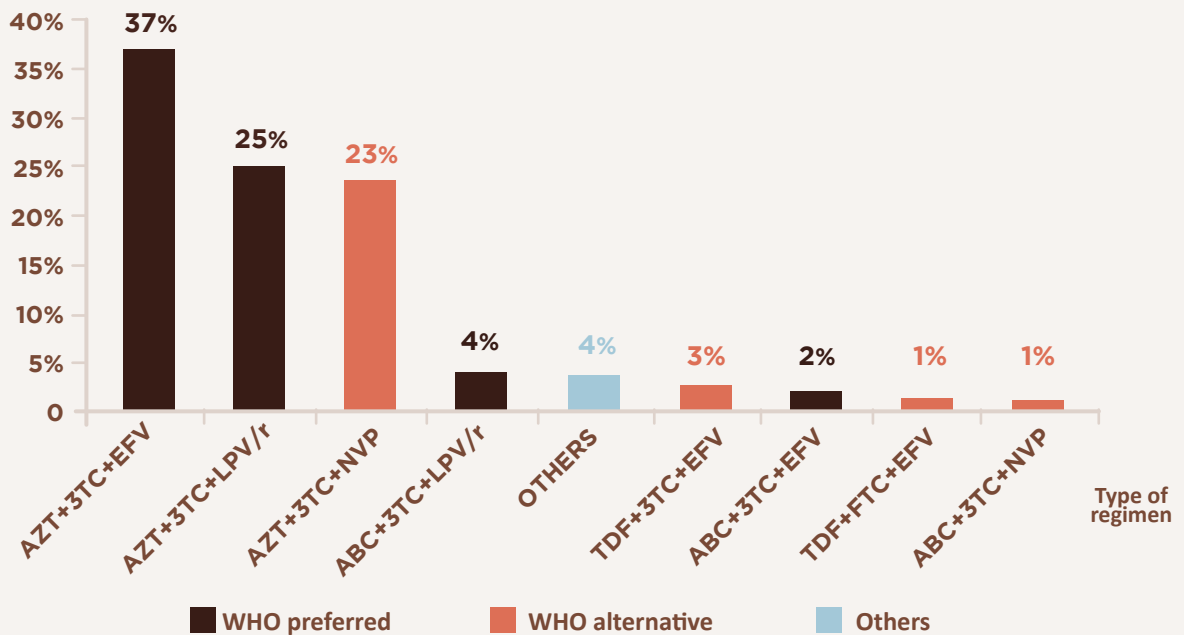
■ Source: WHO AIDS Medicines and Diagnostics Service (AMDS) Surveys, 2015

Figure 17. Percentage of children (0-10 years old) on first-line ARV regime in selected countries in Latin America and the Caribbean, 2014



Source: WHO AIDS Medicines and Diagnostics Service (AMDS) Surveys, 2015

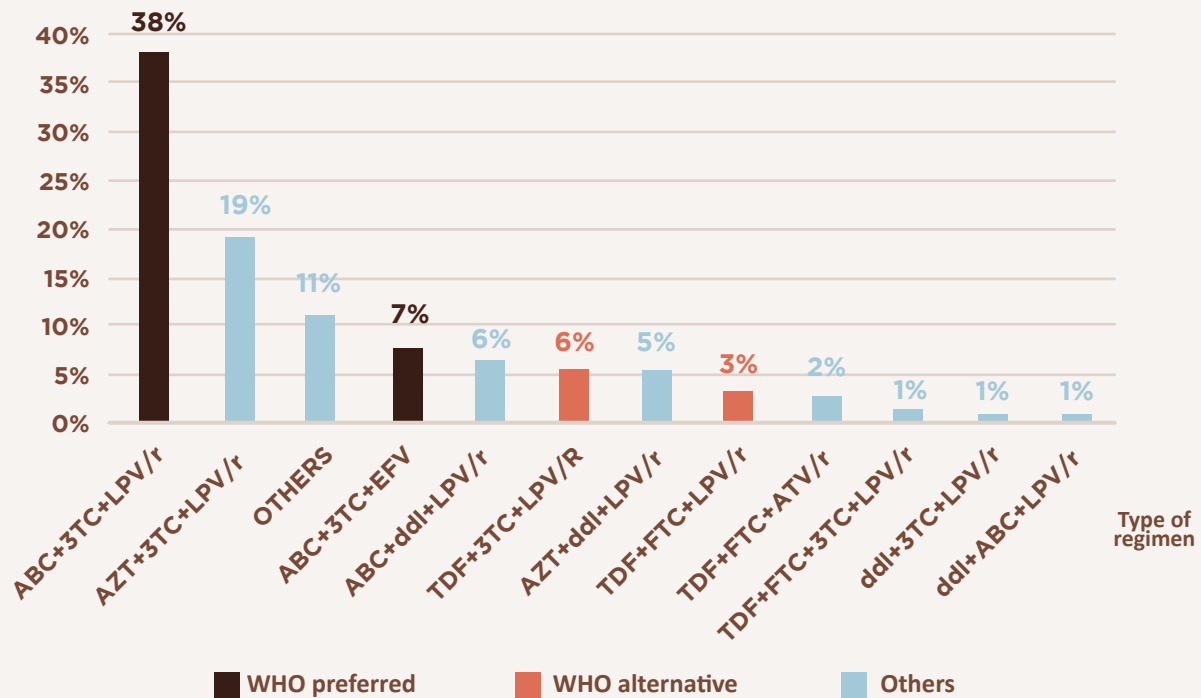
Figure 18. Distribution of children (0-10 years old) on first-line ARV regime in Latin America and the Caribbean, by type of regimen, 2014



Source: WHO AIDS Medicines and Diagnostics Service (AMDS) Surveys, 2015

Note: Distribution based on data from 13 countries

Figure 19. Distribution of children (0-10 years old) on second-line ARV regimen in Latin America and the Caribbean, by type of regimen 2014



Source: WHO AIDS Medicines and Diagnostics Service (AMDS) Surveys, 2015
 Note: Distribution based on data from 13 countries

In summary, WHO-recommended ART regimens are very commonly used for children initiating first-line treatment but are used significantly less often for children on second-line regimens after treatment failure. This may be due to the limited availability of palatable and user-friendly pediatric formulations of some recommended drugs (e.g. LPV/r; ATV/r), and to the limited access to pediatric formulations of new classes of ARV medicines (DRV, RAL).

Optimizing pediatric treatment with the use of new formulations (oral pellets, scored and dispersible tablets) and fixed-dose combinations of ARV medicines may improve retention and the viral suppression outcomes presented in the previous section.

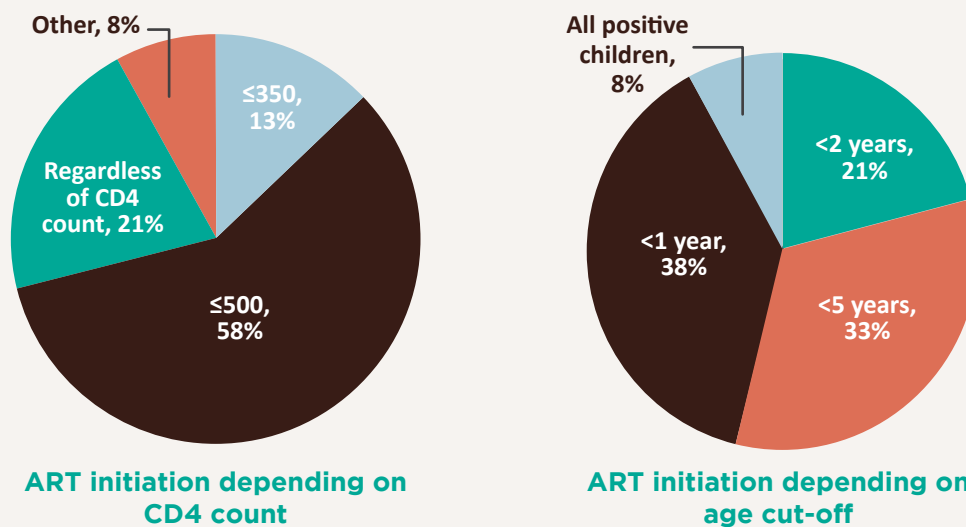
(For a summary of the data presented in this section see **Appendix Table 6.**)

6.

Policies related to pediatric ART

- In 2015, WHO released the new “Guideline on when to start antiretroviral therapy and on pre-exposure prophylaxis for HIV” which includes a recommendation to start ART in all children with HIV, irrespective of age or immune status [9].
- Of 25 countries reporting in 2014, 72% (18 countries) reported having completed the adoption of recommendations for pediatric treatment of the 2013 “WHO consolidated guidelines on the use of ARV drugs for treating and preventing HIV infection”; 24% (6 countries) were still in the process of adopting the guidelines.
- Regarding the age cut-off to initiate treatment in all children living with HIV irrespective of immunological status (CD4 count or percentage CD4) and symptoms: of 24 reporting countries, nine countries (38%) used an age cut-off of less than 1 year; five countries (21%) used less than 2 years as their cut-off; eight countries (33%) used less than 5 years as their cut-off (the 2013 WHO recommendation); and two countries (the Bahamas and Jamaica) reported giving treatment to all HIV-positive children. **(Figure 20)**. Therefore, if we consider the new 2015 WHO recommendation, the gap in adaptation and adoption of policies on treatment criteria is even higher.
- Of 24 reporting countries, the CD4+ cell count thresholds for initiating ART in children 5 and older who are asymptomatic was reported to be as follows: ≤ 500 in 14 countries (58%); “regardless of CD4 count” in 5 countries (21%); and ≤ 350 in 3 countries (13%). **(Figure 20)**.
- In 2014, of 19 reporting countries in LAC, 11 countries (58%) had national guidelines recommending LPV/r based-regimens as the preferred first-line treatment option for all infants and children less than 3 years old. In the same year, 3 countries (16%) had national guidelines that made the same recommendation for only NNRTI-exposed infants. With the availability of new, more palatable and heat-stable formulations of LPV/r, it is likely that the adoption of the WHO recommendation and the use of LPV/r in infants and children younger than 36 months will increase.
- In addition, 50% of countries (11 of 22) reported that zidovudine was their preferred NRTI backbone for treatment initiation in children younger than 3 with HIV; 23% (5 of 22 countries) reported abacavir as the preferred NRTI; and 27% reported “other preferred NRTI.” Use of abacavir is likely to become more frequent due to the 2015 WHO guidelines, its availability in new, dispersible, fixed-dose combinations, and better data on its safety profile in children [10].
- Efavirenz was recommended as the preferred NNRTI for treatment initiation in children 3 years and older in 71% of countries (15 of 21 reporting countries).
- In 2014, 89% of countries (16 of 18) reported having fully implemented a viral load policy for children, while 11% (2 of 18) were still phasing-in. **(Appendix table 5)**.

Figure 20. Policies regarding ART initiation in children in Latin America and the Caribbean, depending on CD4 cell count threshold and age cut-off, 2014



■ **Source:** UNAIDS/WHO Country Global AIDS Response Progress Reports, 2015
 ■ **Note:** Data from 24 reporting countries

(For a summary of the data presented in this section see **Appendix Table 6.**)





Appendix Tables

Appendix Table 1. Health facilities in the Caribbean and Latin America offering pediatric ART, 2012-2014

COUNTRY	2012	2013	2014
Caribbean			
Antigua and Barbuda	1	1	(1)
Bahamas	4	7	7
Barbados	1	1	(1)
Belize	11	11	(11)
Cuba	476	476	(476)
Dominica	(1)	1	1
Dominican Republic	32	32	44
Grenada	1	1	(1)
Guyana	20	21	22
Haiti	85	82	(82)
Jamaica	12	12	(12)
Saint Kitts and Nevis	2	2	(2)
Saint Lucia	2	5	3
Saint Vincent and the Grenadines	1	1	1
Suriname	(5)	(5)	5
Trinidad and Tobago	5	5	5
Total for the Caribbean	659	663	669
Latin America			
Argentina	(50)	50	73
Bolivia	14	16	17
Brazil	454	470	473
Chile	32	32	29
Colombia	NR	NR	NR
Costa Rica	1	1	1
Ecuador	11	9	2
El Salvador	1	1	(1)
Guatemala	11	14	16
Honduras	20	21	22
Mexico	(180)	180	218
Nicaragua	30	42	43
Panama	4	9	10
Paraguay	6	7	8
Peru	41	34	75
Uruguay	2	NR	4
Venezuela	69	52	(52)
Total for Latin America	926	938	1,044
Total LAC	1,585	1,601	1,713

■ **Source:** UNAIDS/WHO Country Global AIDS Response Progress Reports, 2015

■ **Note:** Figures in parenthesis indicate data reported from previous years. NR=not reported. Data from the Bahamas, Belize, Guyana, Saint Lucia, Suriname, Trinidad and Tobago, Ecuador and Guatemala include both, public and private, sector facilities.

Appendix Table 2. Number of children (0-14 years old) living with HIV on ART in selected countries in Latin America and the Caribbean 2010-2014

COUNTRY	2010	2011	2012	2013	2014
Caribbean					
Bahamas	65	52	39	49	53
Barbados	11	10	10	10	8
Belize	88	93	95	96	90
Cuba	22	14	24	25	36
Dominican Republic	950	1,022	1,083	1,000	896
Guyana	177	201	201	184	174
Haiti	1,558	1,965	2,265	2,625	2,879
Jamaica	436	462	457	515	588
Suriname	79	83	85	71	71
Trinidad and Tobago	216	179	158	146	113
Total for Caribbean	3,602	4,081	4,417	4,721	4,908
Latin America					
Argentina	2,381	2,664	2,596	2,674	2,722
Bolivia	61	59	86	104	112
Brazil	5,906	5,215	6,150	5,880	5,768
Chile	206	199	173	168	171
Colombia	797	752	705	657	1,414
Costa Rica	62	63	63	64	63
Ecuador	403	621	550	859	1,064
El Salvador	338	390	335	308	344
Guatemala	661	935	1,024	951	990
Honduras	822	736	783	725	700
Mexico	1,495	1,620	1,781	1,805	1,815
Nicaragua	90	95	104	112	115
Panama	250	256	260	224	159
Paraguay	106	167	181	197	187
Peru	539	494	596	901	923
Uruguay	114	118	121	106	113
Venezuela	1,051	842	972	976	999
Total for Latin America	15,282	15,226	16,648	16,711	17,659
Total for LAC	18,884	19,307	20,897	21,432	22,567

■ Source: UNAIDS progress reports submitted by countries

Appendix Table 3. Selected countries in Latin America and the Caribbean with percentage of children (0 -14 years old) on ART tested for viral load (VL) who were virally suppressed in the reporting period, 2014

COUNTRIES	% children virally suppressed	Numerator	Denominator
Bahamas	31.8	14	44
Brazil	73.2	2,339	3,180
Cuba	100	2	2
Jamaica	27.6	24	87
Saint Lucia	100	1	1
El Salvador	40	2	5
Mexico	80.2	1,076	1,341
Nicaragua	59.7	46	77
Paraguay	61.5	96	156
Uruguay	56.6	64	113

■ **Source:** UNAIDS/WHO Country Global AIDS Response Progress Reports, 2015

■ **Note:** Numerator is defined as number of children on ART tested for viral load in the reporting period who had suppressed viral load (i.e. ≤ 1000 copies/ml). **Denominator** is defined as number of children on ART tested for viral load in the reporting period.

Appendix Table 4. Selected Latin America and the Caribbean countries with percentage of children under 15 years old on ART tested for viral load (VL) with undetectable viral load in the reporting period, 2014

COUNTRIES	% on children on ART tested and with undetectable VL	Numerator	Denominator
Bahamas	25%	11	44
Cuba	100%	2	2
Jamaica	35%	21	60
Saint Lucia	100%	1	1
Brazil	57%	1,799	3,180
Mexico	62%	872	1,396
Nicaragua	25%	2	8
Paraguay	56%	87	156

■ **Source:** UNAIDS/WHO Country Global AIDS Response Progress Reports, 2015

■ **Note:** Numerator is defined as the number of children on ART tested for viral load in the reporting period with undetectable viral load (i.e. ≤ 50 copies). **Denominator** is defined as the number of children on ART tested for viral load in the reporting period.

Appendix Table 5. Policies Related to Pediatric ART in Latin America and the Caribbean

COUNTRIES	Adoption of recommendations of the WHO 2013 Pediatric Guidelines on the use of ARVs for the Prevention and Treatment of HIV in a national process	Age cut-off to treat all children irrespective of symptoms as per MOH guidelines or directive	CD4 cell count thresholds in children aged 5 years and older who are asymptomatic per MOH guidelines or directive	Preferred NRTI for treatment initiation for children with HIV less than 3 years of age	LPV/r based-regimens the preferred treatment option for all infants and children <36 months with HIV (irrespective of NNRTI exposure) in the national guidelines	Efavirenz (EFV) recommended as the preferred NNRTI for treatment initiation in children aged 3 years and older	Viral Load recommended for monitoring children on ART
Antigua and Barbuda	Yes, completed	--	≤ 500	--	--	--	--
Bahamas	Yes, completed	Other	Regardless of CD4 count	Zidovudine (AZT)	Yes, for all	No	Yes, fully implemented policy
Barbados	Yes, completed	Other	≤ 500	Others	Yes, for all	Yes	--
Belize	--	--	--	--	--	--	--
Cuba	Yes, completed	Other	≤ 500	Zidovudine (AZT)	Not recommended	Other	Yes, fully implemented policy
Dominica	--	--	--	--	--	--	--
Dominican Republic	Yes, completed	<5 years	≤ 500	Zidovudine (AZT)	No, but recommended for NNRTI-exposed infants only	Yes	Yes, fully implemented policy
Grenada	--	--	--	--	--	--	--
Guyana	On-going	<2 years	Abacavir (ABC)	Other	No, but recommended for NNRTI-exposed infants only	Other	Yes, fully implemented policy
Haiti	--	--	--	--	--	--	--
Jamaica	On-going	Other	≤ 350	Other	Not recommended	No	Yes, fully implemented policy
Saint Kitts and Nevis	--	--	--	--	--	--	--
Saint Lucia	Yes, completed	<5 years	≤ 500	Abacavir (ABC)	Yes, for all	Yes	Yes, phase-in
Saint Vincent and the Grenadines	Yes, completed	<5 years	Regardless of CD4 count	--	--	--	--

Appendix Table 5. Policies Related to Pediatric ART in Latin America and the Caribbean

COUNTRIES	Adoption of recommendations of the WHO 2013 Pediatric Guidelines on the use of ARVs for the Prevention and Treatment of HIV in a national process	Age cut-off to treat all children irrespective of symptoms as per MOH guidelines or directive	CD4 cell count thresholds in children aged 5 years and older who are asymptomatic per MOH guidelines or directive	Preferred NRTI for treatment initiation for children with HIV less than 3 years of age	LPV/r based-regimens the preferred treatment option for all infants and children <36 months with HIV (irrespective of NNRTI exposure) in the national guidelines	Efavirenz (EFV) recommended as the preferred NNRTI for treatment initiation in children aged 3 years and older	Viral Load recommended for monitoring children on ART
Suriname	On-going	Other	≤ 350	Zidovudine (AZT)	No, but recommended for NNRTI-exposed infants only	No	Yes, fully implemented policy
Trinidad and Tobago	--	--	--	--	--	--	--
Argentina	Yes, completed	≤2 years	≤ 500	Zidovudine (AZT)	Yes, for all	Yes	Yes, fully implemented policy
Bolivia	Yes, completed	<2 years	Regardless of CD4 count	Zidovudine (AZT)	--	--	--
Brazil	Yes, completed	Other	Other	Other	Not recommended	Yes	Yes, fully implemented policy
Chile	On-going	Other	≤ 350	Other	--	Other	Yes, fully implemented policy
Colombia	Yes, completed	<5 years	≤ 500	Abacavir (ABC)	Yes, for all	Yes	--
Costa Rica	Yes, completed	<2 years	Regardless of CD4 count	Other	--	Yes	Yes, fully implemented policy
Ecuador	--	--	--	--	--	--	--
El Salvador	Yes, completed	Other	≤ 500	Abacavir (ABC)	Yes, for all	Yes	Yes, fully implemented policy
Guatemala	Other	Other	≤ 500	--	--	--	--
Honduras	Yes, completed	<5 years	≤ 500	Zidovudine (AZT)	Not recommended	Yes	Yes, fully implemented policy
Mexico	Yes, completed	<5 years	Regardless of CD4 count	Zidovudine (AZT)	Yes, for all	Yes	Yes, fully implemented policy
Nicaragua	Yes, completed	<5 years	≤ 500	Abacavir (ABC)	Yes, for all	Yes	--
Panama	Yes, completed	<5 years	≤ 500	Zidovudine (AZT)	Yes, for all	Yes	Yes, fully implemented policy
Paraguay	On-going	Other	Other	Other	Yes, for all	Yes	Yes, phase-in
Peru	On-going	Other	≤ 500	Zidovudine (AZT)	Not recommended	Yes	Yes, fully implemented policy
Uruguay	Yes, completed	<2 years	≤ 500	Zidovudine (AZT)	Yes, for all	Yes	Yes, fully implemented policy
Venezuela	--	--	--	--	--	--	--

Source: UNAIDS/WHO Country Global AIDS Response Progress Report, 2015

Appendix Table 6. Summary Table. Antiretroviral treatment in the spotlight: The HIV epidemic and continuum of care in children in Latin America and the Caribbean

HIV epidemic in children in Latin America and the Caribbean (LAC)			
Indicator/topic	LAC	Latin America	The Caribbean
Number of children living with HIV, 2014	46,000 (40,000-55,000)	33,000 (29,000-40,000)	13,000 (11,000-15,000)
% decrease in number of children living with HIV from 2007 to 2014	28%	25%	35%
New HIV infections in children, 2014	2,500 (1,678-3,547)	2,000 (1,325-2,871)	500 (353-676)
% decrease in new HIV infections in children between 2013 and 2014	14%	17%	0%
% decrease in new HIV infections in children from peak	78% from peak in 1999-2001 to 2014	73% decrease from peak in 2000 to 2014	88% decrease from peak in 1997-1999 to 2014
Number of AIDS-related deaths in children, 2014	2,800 (1,800-3,500)	1,800 (1,300-2,500)	Less than 1,000 (500-1,000)
% decrease in number of AIDS-related deaths in children between 2013 and 2014	7%	10%	12%
% decrease in number of AIDS-related deaths in children from peak to 2014	60% from peak in 2000-2001	60% from peak in 2000-2001	58% from peak in 2000-2002
The continuum of HIV care in children in Latin America and the Caribbean (LAC)			
Indicator/topic	LAC	Latin America	The Caribbean
Number of health facilities offering pediatric ART, 2014	1,713	1,044	669
% increase in number of health facilities offering pediatric ART between 2012-2014	8%	13%	1.5%
% of reporting countries with changes in the number of health facilities offering pediatric ART from 2012 to 2014	Increased in: 69% (11 of 16 reporting countries). Decreased in: Chile, Ecuador & Venezuela	Increased in: 69% (11 of 16 reporting countries). Decreased in: Chile, Ecuador & Venezuela	Unchanged in: 69% of reporting countries Increased in: Bahamas, Dominican Republic, Guyana and Saint Lucia. Decreased in: Haiti by 3 sites
Number of children on ART, 2014 (including high income countries)	22,567	17,659	4,908
% increase in number of children on ART between 2013-2014	5%	6%	4%
Countries with highest % of children living with HIV on ART, 2014	----	Brazil (34%), Argentina (16%), Mexico (11%), Colombia (8%) Ecuador (6%)	Haiti (60%), Dominican Republic (19%) and Jamaica (12%)
ART coverage in children, 2014	49% (43%-57%)	55% (46%-64%)	35% (32%-42%)
% increase in ART coverage in children from 2013 to 2014	6%	8%	4%
ART coverage in adults, 2014	46% (40%-55%)	46% (40%-56%)	42% (33%-54%)
Countries with the highest pediatric ART coverage, 2014		El Salvador (63%) Mexico (63%)	Belize (85%) Jamaica (80%)
Countries with the lowest pediatric ART coverage, 2014		Dominican Republic (28%) Haiti (35%)	Bolivia (21%) Nicaragua (35%) Venezuela (33%) Guatemala (35%)

Children in HIV care in Latin America and the Caribbean (LAC)

Indicator/topic	LAC
Number of children in care receiving ART, 2014; (data from 9 reporting countries)	8,994
Pediatric ART retention at 12 months, 2014; (data from 12 countries)	73% (Average), 85% (Median)
Average % of children younger than 15 on ART who were tested for viral load and who were virally suppressed (<1000 copies/ml), 2014; (data from 10 reporting countries)	73% (Average), 61% (Median)
Average % of children younger than 15 on ART who were tested for viral load and had undetectable viral loads, 2014; (data from 7 reporting countries)	58% (Average), 57% (Median)

Optimization of ART in children Latin America and the Caribbean (LAC)

Indicator/topic	LAC
Number of children (0 -10 years old) on ART regimens in LAC, 2014; (data from 13 reporting countries)	6,834
FIRST-LINE REGIMEN	
% of children on ART receiving a first-line regimen, 2014; (data from 13 reporting countries).	60%
% of children on ART receiving 2013-WHO-guidelines recommended first-line regimen, either preferred or alternative, 2014; (data from 13 reporting countries).	96%
Median number of first-line ART regimens in use in 2014; (data from 13 reporting countries).	4
Most commonly used first line-ART regimens in children, 2014; (data from 13 reporting countries).	AZT+3TC+EFV (37%), AZT+3TC+LPV/r (25%) AZT+3TC+NVP (23%)
% increase in children on ART receiving first-line regimen from 2013 to 2014; (data from 13 reporting countries)	5%

SECOND-LINE REGIMEN

% of children on ART receiving second-line regimen, 2014; (data from 13 reporting countries)	37%
% of children on ART receiving 2013-WHO-guidelines recommended second-line regimen, either preferred or alternative; (data from 13 reporting countries)	54%
Most commonly used second line-ART regimens in children, 2014; (data from 13 reporting countries)	ABC+3TC+LPV/r (38%) AZT+3TC+LPV/r (19%)

THIRD-LINE REGIMEN

% of children on ART receiving third-line regimen, 2014; (data from 13 reporting countries)	3%
USE OF OBSOLETE ARVS	
Children receiving obsolete and non-recommended ART drugs (ddl and d4T), 2014	2% (Generally for second and third-line regimens)

Policies related to pediatric ART in Latin America and the Caribbean (LAC)

Indicator/topic

LAC

Status of the adoption of the 2013 WHO-guidelines recommendations for pediatric treatment, 2014; (data from 25 reporting countries).	Completed: 72% (18 countries) In process: 24% (6 countries) Other: 4% (1 country)
Age cut-off for ART initiation in all children living with HIV irrespective of immunological status (CD4 count or percentage CD4) and symptoms; (data from 24 reporting countries).	Treat all children approach: Bahamas and Jamaica Less than 5 years: 33% (8 countries) Less than 2 years: 21% (5 countries) Less than 1 year: 38% (9 countries)
CD4+ cell count thresholds for ART initiation in children 5 and older who are asymptomatic, 2014; (24 reporting countries).	“Regardless of CD4 count”: 21% (5 countries) ≤500: 58% (14 countries) ≤ 350: 13% (3 countries)
Countries with national guidelines recommending LPV/r based-regimens as the preferred first-line treatment option, 2014; (data from 19 reporting countries).	For all infants and children less than 3 years old: 58% (11 countries) Only for NNRTI-exposed infants: 16% (3 countries)
Preferred NRTI backbone for treatment initiation in children younger than 3 years, 2014; (data from 22 reporting countries).	Zidovudine: 50% (11 countries) Abacavir: 23% (5 countries) Other: 27% (6 countries)
Preferred NNRTI for treatment initiation in children 3 years old and older (data from 21 reporting countries).	Efavirenz: 71% (15 countries)
Status of implementation of the viral load policy for monitoring children on treatment, 2014; (data from 18 reporting countries).	Fully implemented: 89% (16 countries) Phasing-in: 11% (2 countries)



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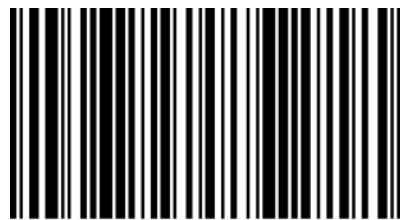
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