Why Are We Concerned About Adolescents – Particularly Adolescent Girls and Young Women – and HIV?

Epidemiology of HIV in Adolescent & Young Women

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Washington DC
Demographic Trends in Adolescent Populations in the Context of the HIV Epidemic

Total: 2.1 million [1.8 million–2.4 million]
Estimated number of adults and children newly infected with HIV | 2015

HIV epidemic remains centered in Africa (65% of new infections)
In 2015, 60% of the population in Africa was aged <24 years. 19% were age 15-24 years but the 41% 0-14 years will be aging into adolescence/young adulthood in next 10 years.

“Youth Bulge”
Youth Bulge Between 1990 - 2016 in 3 African Countries

**Between 1990 and 2016:**

**Zimbabwe**
- **60% ↑** young men <24 yr
- **50% ↑** young women <24 yr

**Zambia**
- **2.1-fold ↑** young men <24 yr
- **2.1-fold ↑** young women <24 yr

**Malawi**
- **2.1-fold ↑** young men <24 yr
- **2.2-fold ↑** young women <24 yr
Demographic Trends 2015-2050 by Region: Africa’s Will Continue to Have Majority Population <24 Years

Hader S. CROI 2017, Seattle, WA. Plenary PL-2

United Nations, Department of Economic and Social Affairs, Population Division, World Population Prospects: The 2015 Revision
Convergence of the “Youth Bulge” in sub-Saharan Africa and HIV Risk is Problematic:

Adolescents and Young Adults at High Risk of HIV Acquisition
Key HIV Prevention Indicators Show Limited Progress for Adolescents Globally


Youth in sub-Saharan Africa remain at high risk of HIV acquisition

- Only ~1 in 4 girls, ~1 in 3 boys accurate HIV knowledge
- Only ~1 in 3 girls, ~44% boys (↓) used condom
- 86% girls, 91% boys no HIV test

Note: Regional figures reflect country subsets with survey data for both the 2005–2009 and 2010–2015 time periods.
Adolescent Girls and Young Women at Particularly High Risk of HIV Acquisition in Many Settings in Africa

- Inadequate sexual and reproductive health information and services
- Inability to make choices outside of family and/or partner to take action on health and well-being
- Harmful gender norms, including child, early and forced marriage, resulting in early pregnancy
- Transactional and unprotected age-disparate sex
- Lack of access to secondary education
- Intimate partner violence, which impacts on risk and health-seeking behavior
Lack of Access to Education for Girls Increases Vulnerability to HIV

In Uganda, among 43,647 young pregnant women aged 15-24 years tested for HIV, HIV risk increased by 8% per year in young women with no secondary education.

Johnson LF et al. AIDS 2009;23:1583-8
Higher Prevalence of Intimate Partner Violence (IPV) in Adolescent and Young Women than Adult Women


- Analysis DHS surveys of >90 low-middle income countries for prevalence of lifetime IPV by age and region in married/cohabiting adolescent/young women.
- 28% of adolescent and 29% young adult women reported lifetime IPV, most prevalent in East and Southern Africa region (31% for adolescent and 36% for young adult women).
- Risk for past-year IPV significantly higher in adolescent and young adult women compared to older women.

More than 1 in 4 girls experienced intimate partner violence in most countries surveyed.
Physical and Sexual Violence in Girls is Significantly Correlated with Risk of HIV Acquisition


- Systematic review: 28 studies involving 331,468 individuals in 16 countries

Physical or Sexual IPV in Women and Risk HIV Acquisition

<table>
<thead>
<tr>
<th>Cross-sectional studies</th>
<th>Weight</th>
<th>Odds Ratio M-H, Random, 95% CI</th>
<th>Odds Ratio M-H, Random, 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dunkle, 2004 [19]</td>
<td>6.6%</td>
<td>1.68 [1.20, 2.34]</td>
<td></td>
</tr>
<tr>
<td>Harling, 2010 [21]</td>
<td>33.6%</td>
<td>1.83 [1.60, 2.09]</td>
<td></td>
</tr>
<tr>
<td>McDonnell, 2003 [43]</td>
<td>5.6%</td>
<td>0.77 [0.49, 1.21]</td>
<td></td>
</tr>
<tr>
<td>Sareen, 2009 [22]</td>
<td>0.0%</td>
<td>13.06 [3.03, 56.35]</td>
<td></td>
</tr>
<tr>
<td>Silverman 2008 [44]</td>
<td>0.9%</td>
<td>4.17 [1.46, 7.21]</td>
<td></td>
</tr>
<tr>
<td>Subtotal (95% CI)</td>
<td>46.7%</td>
<td></td>
<td>2.0 (1.2-3.2)</td>
</tr>
</tbody>
</table>

Heterogeneity: $\tau^2 = 0.22$; $\chi^2 = 27.83$, df = 4 ($P < 0.0001$); $I^2 = 86$

Test for overall effect: $Z = 2.84$ ($P = 0.004$)
So We Know Youth are at High Risk of HIV -

What Are the Data on HIV Infection Adolescents and Young People?
36.7 Million Persons Living with HIV in 2015

Estimated global number of people <25 years living with HIV, by five-year age groups, 2015

- **1.8 million (5%)** were adolescents 10-19 years
- **1.1 million (3%)** were adolescents 15-19 years
- **2.8 million (8%)** were young people 20-24 years

- **36.7 Million Persons Living with HIV in 2015**
  - 1.8 million (5%) were adolescents 10-19 years
  - 1.1 million (3%) were adolescents 15-19 years
  - 2.8 million (8%) were young people 20-24 years
>60% (1.1 million) of adolescents living with HIV reside in East or Southern Africa; nearly half in just 5 countries: India, Kenya, Nigeria, South Africa & Tanzania.

Estimated Number of Adolescents 10-19 Years Living with HIV, 2015
Disproportionate Success in HIV Epidemic Control by Age Group

New HIV Infections by Population and Year

<table>
<thead>
<tr>
<th></th>
<th>Pediatric (0-14 yrs)</th>
<th>15 - 24 yrs</th>
<th>25 yrs +</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2015*</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2020** Projected</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sources: * UNAIDS AIDS info Online Database, 2016; ** 15-24 yrs age group projected based on Africa Development Forum / World Bank 2015, “Africa’s Demographic Transition: Dividend or Disaster?”
Adolescents and Young People Are Disproportionately Represented in New HIV Infections

- Adolescents 15-19 yrs accounted for 3% and young people 20-24 yrs 8% of 36.7 million people LWH.
- However, of 2.1 M new HIV infections in 2015, 12% were in adolescents 15-19 yr & 32% were in young people 20-24 yr.
2 of Every 3 New HIV Infections Among Adolescents 15-19 Years Occurred in Sub-Saharan Africa in 2015

Estimated Number/% of New HIV Infections in Adolescents 15-19 Years by UNICEF Regions, 2015

- **Total:** 250,000
  - **Eastern and Southern Africa:** 130,000, 53%
  - **West and Central Africa:** 36,000, 14%
  - **East Asia and the Pacific:** 25,000, 10%
  - **South Asia:** 19,000, 8%
  - **Latin America and the Caribbean:** 17,000, 7%
  - **Middle East and North Africa:** 2,300, 1%
  - **Rest of world:** 12,000, 5%
  - **CEE/CIS:** 6,200, 2%
The youth population of sub-Saharan Africa, the region most affected by HIV, has begun to explode in size and is expected to continue to do so.

Combined with the elevated risk of new HIV infections among adolescents and young people, in the absence of effective interventions, a dramatic increase in new infections is on the horizon.
Numbers of Adolescents and Young People Living with HIV
1990-2015

Adolescents 10-19 years living with HIV
- 1.4 M
- 28% increase
- 1.8 M

Young people 15-24 years living with HIV
- 4.4 M
- Only 11% decrease
- 3.9 M
Combining Expected “Youth Bulge” in Africa with Elevated HIV Risk in Youth, New Adolescent (15-19 Years) HIV Infections are Projected to Increase Globally

UNAIDS Estimates

Global Annual Rate of New HIV Infections

- All adolescents (aged 15–19) continued progress
- All adolescents (aged 15–19) stalled progress

- Estimated number of new HIV infections

- Progress prevention of HIV in adolescents is maintained at current levels

- Progress slows

- UNAIDS Estimates
Adolescent Girls and Young Women Are at Greatest Risk of HIV
Adolescent Girls and Young Women Living with HIV Are Significantly Greater than Adolescent Boys & Young Men

Adolescents 10-19 years living with HIV

Continuing to increase

990,000 girls
780,000 boys

Young people 15-24 years living with HIV

Remains static over time

2,300,000 women
1,600,000 men
Between 2010 and 2015, new infections in young women aged 15-24 years ↓ by only 6%, from 420,000 to 390,000.

OVER 1,000 NEW INFECTIONS EVERY DAY
New Adolescent (15-19 Years) HIV Infections Will Continue to Be Significantly Higher in Young Girls
With ↑ age 15 years+, gender disparities in HIV prevalence emerge. In sub-Saharan Africa, girls are disproportionately infected, while in Latin America and the Caribbean boys are disproportionately infected.
Among adolescent girls aged 15–19 years in sub-Saharan Africa, a higher percentage of girls than boys had sex before the age of 15 years; in West and Central Africa, 16% of girls vs 7% of boys report early sex.

Source: United Nations Children’s Fund global databases, 2013, based on Demographic and Health Surveys (DHS), Multiple Indicator Cluster Surveys (MICS), and other national surveys, 2008–2012.

Indicates significant disparity in age of sexual partners for young girls.
Significant Association of Age-Disparate Sexual Relationships in Young Women 15-24 Years and HIV

Schaefer R et al. AIDS Ap 19 2017 [Epub]

- Zimbabwe: 65% 3,746 young women 15-24 years reported partners ≥5 years older and 21% older men reported partners ≥10 years younger.

- Increasing partner age differences were associated with higher HIV incidence (adjusted hazard ratio [aHR]=1.05 [1.01-1.09]).
To Better Understand the Current State of the Epidemic, PEPFAR is Funding Population-Based HIV Impact Assessment Surveys.

HIV Incidence:

The rate of new HIV infections in young women compared to young men in 2015-2016 was:

- 5 times greater in Zimbabwe
- 8 times greater in Malawi
- 14 times greater in Zambia
New HIV Infections Among Adolescent Girls and Young Women in Sub-Saharan Africa:
Like HIV Prevalence, Incidence is not Uniform

In 2015 young women and girls account overall for 75% of new HIV infections among adolescents in sub-Saharan Africa.

Wide variation between countries in incidence in adolescent girls/young women.
Variation by Age Bracket Between sub-Saharan Countries in Number New Infections in Adolescent/Young Women

- New infections by age bracket varies between countries.
- In most countries, the number of new infections highest among young women aged 20-24 years.
- Other countries have high rates of new infections among adolescent girls aged 15-19 years.
- While other countries have large numbers of new infections in women aged 25–29 years.

Source: 2016 UNAIDS estimates.
HIV Infection in Young Women is Not Uniform

- Even within sub-Saharan Africa, large differences in epidemics in young women between countries.

- Outside of sub-Saharan Africa – such as in the United States - HIV prevalence in young women is >1% mostly among subpopulations (such as sex workers and communities with high injection drug use).
HIV in Adolescent and Young Women in the United States
US Youth Have High Rates of Sex, Decreasing Condom Use, and Low Rates HIV Testing

41% high school students report ever had sex

Despite high rate of risk behaviors, 90% of youth never tested for HIV in 2015
STDs (Gonorrhea/Chlamydia) Higher Among Young Women than Young Men

- In 2015, most gonorrhea and chlamydia cases are in young people 15-24 years.

- Gonorrhea & chlamydia rates are highest in 2015 among adolescent girls & young women compared to boys/men.
HIV Infection in Youth in the United States

- Young people currently living with HIV in the US are a mix of children with perinatal HIV aging up and newly infected individuals.
- Young women account for 24% of youth living with HIV, 42% of whom were infected perinatally, 49% heterosexually.

Youth Aged 13–24 Years Living with HIV Infection Year end 2014, by Sex and Transmission Category,

**Male**
N = 29,115

- Male-to-male sexual contact: 80%
- Heterosexual contact\(^a\): 3%
- Injection drug use (IDU): 1%
- Male-to-male sexual contact & IDU: 3%
- Perinatal: 12%
- Other\(^b\): 1%

**Female**
N = 9,241

- Heterosexual contact\(^a\): 49%
- Injection drug use (IDU): 5%
- Male-to-male sexual contact & IDU: 42%
- Perinatal: 4%
- Other\(^b\): 1%

Note. Data include persons with a diagnosis of HIV infection regardless of stage of disease at diagnosis. Data have been statistically adjusted to account for missing transmission category. “Other” transmission category not displayed as it comprises 1% or less of cases.

\(^a\) Heterosexual contact with a person known to have, or to be at high risk for, HIV infection.

\(^b\) Includes hemophilia, blood transfusion, and risk factor not reported or not identified.
New HIV Infections in Youth in the United States

- Youth 13-24 years comprise 16% of the US population but account for **22%** of all new HIV diagnoses.
- The majority of new infections are in young gay/bisexual men.
- Overall, 13% of new infections in persons 13-24 are female.

New HIV Diagnoses Among Youth Aged 13-24 in the United States, by Race/Ethnicity and Sex, 2015

- **13–19 years**
  - Male: 85%
  - Female: 15%
  - N = 1,729

- **20–24 years**
  - Male: 89%
  - Female: 12%
  - N = 7,151

- **≥25 years**
  - Male: 79%
  - Female: 21%
  - N = 31,040

Note. Data includes persons with a diagnosis of HIV infection regardless of stage of disease at diagnosis. Data for the year 2015 are preliminary and based on 6 months reporting delay.
New Infections in Youth in the U.S. Are in Individuals of Color

New HIV Diagnoses, Youth Aged 13-24 in the United States, by Race/Ethnicity and Sex, 2015

- 81% of young men and 83% of young women with new infections are persons of color.

*Subpopulations representing 2% or less of the overall US epidemic are not represented in this chart.
Transmission Risk Among Young Women is Predominantly Heterosexual Contact, Followed by IDU

New Diagnoses of HIV Infection Among Female and Male Youth 13-24 Years in the United States, by Age Group and Transmission Category, 2015

### Young women age 13-24 years

<table>
<thead>
<tr>
<th>Transmission category</th>
<th>13–19 years</th>
<th>20–24 years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>Injection drug use (IDU)</td>
<td>22</td>
<td>8.5</td>
</tr>
<tr>
<td>Heterosexual contact</td>
<td>223</td>
<td>86.9</td>
</tr>
<tr>
<td>Other</td>
<td>12</td>
<td>4.6</td>
</tr>
<tr>
<td>Total</td>
<td>257</td>
<td>100</td>
</tr>
</tbody>
</table>

### Young men age 13-24 years

<table>
<thead>
<tr>
<th>Transmission category</th>
<th>13–19 years</th>
<th>20–24 years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>Male-to-male sexual contact</td>
<td>1,368</td>
<td>93.0</td>
</tr>
<tr>
<td>Injection drug use (IDU)</td>
<td>13</td>
<td>0.9</td>
</tr>
<tr>
<td>Male-to-male sexual contact and IDU</td>
<td>42</td>
<td>2.9</td>
</tr>
<tr>
<td>Heterosexual contact</td>
<td>39</td>
<td>2.6</td>
</tr>
<tr>
<td>Other</td>
<td>10</td>
<td>0.7</td>
</tr>
<tr>
<td>Total</td>
<td>1,472</td>
<td>100</td>
</tr>
</tbody>
</table>

**Note.** Data include persons with a diagnosis of HIV infection regardless of stage of disease at diagnosis. Data for the year 2015 are preliminary and based on 6 months reporting delay. Data have been statistically adjusted to account for missing transmission category.

- a Heterosexual contact with a person known to have, or to be at high risk for, HIV infection.
- b Includes hemophilia, blood transfusion, perinatal exposure, and risk factor not reported or not identified.
- c Because column totals for numbers were calculated independently of the values for the subpopulations, the values in each column may not sum to the column total.
New HIV Infections in Youth in US by Age Group and Geographic Locale – Highest in the Southern US

Rates of HIV Infection Diagnoses among Adolescents **Aged 13–19 Years** 2015

- **N = 1,729** Total Rate = 5.8/100,000

Rates of HIV Infection Diagnoses among Young Adults **Aged 20–24 Years** 2015

- **N = 7,151** Total Rate = 31.1/100,000

HIV diagnoses in adolescents in 2015 were highest in **the District of Columbia (38.0)**, Mississippi (16.3), Louisiana (16.0), Georgia (12.8), Florida (12.1), South Carolina (9.1) and **Maryland (8.8)**.

HIV diagnoses in young adults in 2015 were highest in **the District of Columbia (93.3)**, Louisiana (64.0), Georgia (63.3), Mississippi (61.1), Florida (56.2), and **Maryland (52.1)**.
Maryland Trends in New HIV Diagnoses
Increase in New Cases Among Youth 13-24 Years Since 1997

1,224 new HIV diagnoses in 2015 in Maryland

- In 2015, transmission risk in youth MSM (77.5%) and heterosexual (17.3%)
- In 2015, 82.1% new diagnoses in youth were non-Hispanic black
Baltimore 1985-2015
Number of New HIV Diagnoses by Year and Age*

Increase in new HIV diagnoses in 20-29 year old age group since 2009

New HIV cases in 2015:

- 36.3% age 20-29 years
- 4.2% age 13-19 years

*Note: Baltimore data do not break out young adults 20-24 years
New HIV Diagnoses by Year, Sex at Birth, Race/Ethnicity & Mode Transmission*

- **New HIV Diagnoses by Year & Sex at Birth**
- **New HIV Diagnoses by Year & Race/Ethnicity**
  - New HIV cases in 2015:
    - 85% non-Hispanic black
    - 9.3% White
    - 4% Hispanic
- **New HIV Diagnoses by Year & Mode Transmission**
  - In 2015:
    - 48.4% MSM
    - 40.6% heterosexual
    - 10.7% IDU or MSM/IDU

*Data not provided broken down by age*
19% (69/371) of new HIV cases in 2015 were age 13-24 years.
District of Columbia 1985-2015
HIV Diagnoses by Year, Sex at Birth, Race/Ethnicity & Mode Transmission*

New HIV Diagnoses by Year & Sex at Birth

New HIV cases in 2015: 29.4% were female

New HIV Diagnoses by Year & Race/Ethnicity

New HIV cases in 2015: 76.4% non-Hispanic black
9.5% White
10.5% Hispanic

In 2015:
59.7% MSM,
39.4% heterosexual
0.9% IDU or MSM/IDU

*Data not provided broken down by age
Transgender Youth - An Often Ignored Population
Estimates for the transgender population range from 0.5% to 1.3% for birth-assigned males, and 0.4% to 1.2% for birth-assigned females.

This results in an estimate of around 25 million transgender people worldwide.

<table>
<thead>
<tr>
<th>Sample</th>
<th>Measure</th>
<th>Prevalence of transgender people by birth-assigned sex</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Male</td>
</tr>
<tr>
<td>Conron et al (2012), USA 14</td>
<td>28 176 adults</td>
<td>Identification as transgender</td>
</tr>
<tr>
<td>Glen and Hurrell (2012), UK 15</td>
<td>9950 adults</td>
<td>Identification as other gender or in another way</td>
</tr>
<tr>
<td>Clark et al (2014), New Zealand 16</td>
<td>7729 high-school students</td>
<td>Identification as transgender</td>
</tr>
<tr>
<td>Kuyper and Wijsen (2014), Netherlands 17</td>
<td>8064 adults</td>
<td>Identification on gender spectrum</td>
</tr>
<tr>
<td>Van Caenegem et al (2015), Belgium 18</td>
<td>1832 adults</td>
<td>Identification on gender spectrum</td>
</tr>
</tbody>
</table>

*Extrapolated from table 1 in article. †Extrapolated from annex B in paper. ‡Extrapolated from table 1 in paper. ¶Extrapolated from table 3 in article.
UNAIDS: HIV Prevalence Among Transgender Individuals

http://aidsinfo.unaids.org/
Meta-Analysis on HIV Prevalence in Transgender Women vs All Reproductive-Aged Adults 2000-2011


Data from 39 studies in 15 countries including 11,066 transgender women

49-fold ↑ risk of HIV infection in transgender women vs all other reproductive-aged adults

19% pooled HIV prevalence, did not differ low-middle vs high-income countries
HIV prevalence ranged from low of 4% in Australia to 44% in India
HIV in Transgender Women in the U.S., 2009-2014
Clark H et al. AIDS Behav 2016 Dec 29 [Epub ahead of print]

- Of 2,351 transgender people diagnosed with HIV, 84% were transgender women & 15% were transgender men*.
- 43% of transgender women & 54% of transgender men with HIV lived in the South.
- 51% transgender women and 58% of transgender men with new HIV infection were non-Hispanic black/African American.

*Data not provided broken down by age
District of Columbia 2010-2014
Reporting HIV Cases Among Transgender Persons*

- 2015 DC population was 658,893
- Transgender prevalence of 1% =~6,500
- Rate new HIV diagnoses 5700/100,000 (non-Hispanic black rate 3212/100,000).

*Data not provided broken down by age
NATIONAL TRANSGENDER HIV TESTING DAY

APRIL 18, 2017

HIV TREATMENT WORKS

New campaign materials featuring transgender women of color.
Summary

- Adolescents and young adults account for a disproportionate number of new infections in most countries.

- In sub-Saharan Africa - the epicenter of the HIV epidemic - the expected “youth bulge” in population is projected to lead to a dramatic future increase of HIV in young people – particularly young women.

- The HIV epidemic in young women is not uniform and differs between countries even in sub-Saharan Africa - different approaches may be needed in different countries.
Summary

- Outside of HIV endemic settings in sub-Saharan Africa, HIV in young women is less common.
- In the US, HIV primarily affects young women of color and is primarily heterosexually transmitted.
- Transgender individuals are at high risk of HIV; better epidemiologic data on transgender individuals is critically needed.
- To achieve an AIDS-free generation, effective prevention efforts targeted to youth – particularly young women – will be essential.
Thank You For Your Attention!

Prevention of HIV in Young People

THERE IS NO TRY

ONLY DO

Women, Girls, HIV and AIDS
World AIDS Campaign 2004

EMPOWER YOUNG WOMEN AND ADOLESCENT GIRLS: FAST TRACKING THE END OF THE AIDS EPIDEMIC IN AFRICA

DREAMS
1 million ADOLESCENT GIRLS AND YOUNG WOMEN
with critical comprehensive HIV prevention interventions