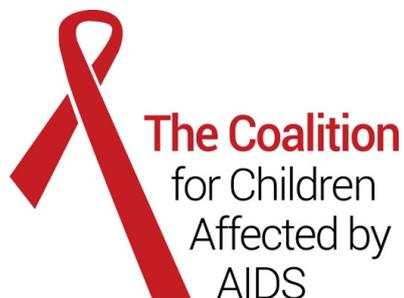




*Adolescent mother and child © HEY BABY study team. 2019.*

## *Adolescent mothers affected by HIV and their children – understanding and meeting their needs in our HIV response and global commitments*



*Commissioned by The Coalition for Children Affected by AIDS*

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## KEY TERMS

**Adolescence/Adolescent:** 10-19 years, according to the WHO definition

**Adolescent fathers:** 10-19 year old males who have fathered a child

**Adolescent mothers:** females 10-19 years old who have given birth to a child

**Adolescent pregnancy:** pregnancy occurring between the ages of 10-19 years

**Africaid Zvandiri:** a community based organisation in Zimbabwe

**DREAMS:** a partnership to reduce HIV infections among women and girls in 10 sub-Saharan African countries

**Global Fund:** a partnership investing in programmatic responses to HIV, amongst other causes.

**HIV-affected households:** household impacted by HIV either by being within a high endemic community or by having a household member who is living with HIV

**HIV-endemic communities:** communities with a high prevalence of HIV

**HIV-orphans:** children/adolescents experiencing the death of one or both parents due to HIV/AIDS related illnesses

**Recently/sexually infected (living with HIV):** HIV acquisition after birth i.e. through sexual experiences/blood exposures (horizontal HIV infection)

**Sub-Saharan Africa:** All African countries that are located (fully or partially) south of the Saharan, according to the UN. See figure 1, footnote on page 4

**Vertically infected (living with HIV):** HIV acquisition before or immediately after birth from mother

## FREQUENTLY USED ACRONYMS

**ABCD:** Ask-Boost-Connect-Discuss

**ALHIV:** Adolescents living with HIV

**ART:** Antiretroviral therapy

**HAND:** HIV-associated and neurocognitive disorders

**HEU:** HIV-exposed uninfected

**IPV:** Intimate partner violence

**UNAIDS:** Joint United Nations Programme on HIV/AIDS

**LMICs:** Low- and middle-income countries

**MAMAS:** Mentoring Adolescent Mothers at School

**NGO:** Non-governmental organisation

**OVC:** Orphans and vulnerable children

**PEPFAR:** President's Emergency Plan for AIDS Relief

**PMTCT:** Prevention of mother-to-child transmission

**SDGs:** Sustainable Development Goals

**SRH:** Sexual and reproductive health

**UNESCO:** United Nations Educational, Scientific and Cultural Organization

## **INTRODUCTION**

Whilst adolescents have received increasing attention in the global HIV response, the health and well-being of adolescent mothers and their children has been largely overlooked.<sup>1</sup> Adolescent girls, in particular have been and remain central to global HIV prevention efforts, given persistently high rates of HIV incidence among 15-24 year olds, particularly in sub-Saharan Africa.<sup>2</sup> In this region, supporting adolescent parents living in high HIV-risk communities is critical to the elimination of HIV and AIDS, as well as the attainment of several Sustainable Development Goals (SDGs). The scale of vulnerability is significant: there are an estimated 11.4 million adolescent mothers in sub-Saharan Africa,<sup>3</sup> most of whom live in adverse conditions. By the age of 18, 42% of adolescent girls and young women living in urban areas, and more than 50% of those living in rural areas, have been pregnant.<sup>4</sup> Four of every five new HIV infections among 15-19 year olds in sub-Saharan Africa occur among adolescent girls.<sup>5</sup> Late pregnancy and breastfeeding are two high-risk periods for HIV infection,<sup>6,7</sup> and early unintended pregnancy during adolescence is a risk factor for later HIV infection.<sup>8</sup> Adolescent mothers and their children in sub-Saharan Africa are at greater risk of HIV infection and less likely to receive or stay on treatment.<sup>9</sup> They are also at the epicentre of intersecting vulnerabilities, including those associated with gender inequality, poverty, violence, exclusion, poor education, and early childhood developmental delays that limit generations across a lifetime.<sup>1,10</sup>

This background note outlines the current evidence on the experiences of young mothers affected by HIV and their children, the impact this has on how well they do across HIV-specific and SDG-related indicators, and solutions that may deliver improvements across several HIV and SDG targets simultaneously. Supporting adolescent mothers affected by HIV and their children to meet SDG targets is central to realising the Global Strategy for Women's, Children's, and Adolescent's Health (2016-2030)<sup>11</sup> and to working towards the objectives set by AA-HA! for adolescent health.<sup>12</sup> The evidence reviewed focuses on sub-Saharan Africa,<sup>1</sup> due to the syndemic – concurrent occurrence – of adolescent parenthood and HIV across this region, and the potential for worse outcomes due to their overlap. The methodology used to compile this evidence note is summarised in Appendix 1.

We begin by outlining the importance of adolescent mothers and their children in achieving global HIV and development targets. We continue by exploring how adolescent mothers and their children are currently excluded by our socio-legal frameworks, data collection and management, and funding and programming, including a note on adolescent fathers. The third section highlights a collection of promising programmes that focus on and support adolescent parents affected by HIV and their children. We end with a series of preliminary recommendations to facilitate discussion regarding advocacy for adolescent mothers affected by HIV and their children.

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<sup>1</sup> Sub-Saharan Africa was defined as including the following countries: Angola; Benin; Botswana; Burkina Faso; Burundi; Cameroon; Cape Verde; Central African Republic; Chad; Comoros; Congo ; Brazzaville; Democratic Republic of Congo; Cote d'Ivoire; Djibouti; Equatorial Guinea; Eritrea; Eswatini; Ethiopia; Gabon; The Gambia; Ghana; Guinea; Guinea Bissau; Kenya; Lesotho; Liberia; Madagascar; Malawi; Mali; Mauritania; Mauritius; Mozambique; Namibia; Niger; Nigeria; Reunion; Rwanda; Sao Tome; Senegal; Seychelles; Sierra Leone; Somalia; South Africa; South Sudan; Sudan; Swaziland; Tanzania; Togo; Uganda; Western Sahara; Zambia; Zimbabwe.

## SECTION 1: WHY ARE ADOLESCENT MOTHERS AND THEIR CHILDREN IMPORTANT FOR ACHIEVING GLOBAL HIV AND DEVELOPMENT TARGETS?

### 1.1 THE SCALE OF ADOLESCENT PARENTHOOD

- Complications during pregnancy and childbirth are the main cause of death among 15-19 year old women globally.<sup>13</sup>
- Approximately 11.4 million adolescent mothers are living within sub-Saharan Africa<sup>14</sup>
- Adolescent birth rate across HIV-endemic countries within sub-Saharan Africa ranges from 30-208 per 1000 births (average 103), a higher rate on average than non-HIV endemic countries within the region.<sup>3</sup>
- At an estimated 123 per 1000 births, rates of adolescent pregnancy in sub-Saharan Africa are the highest globally and show no considerable decline since 1990<sup>15</sup>

In this report, adolescent pregnancy and motherhood is defined as pregnancy or childbearing among girls 10-19 years old.<sup>3</sup> Adolescence is a critical period of development, both physically and psychologically. Globally, the experience of pregnancy and childbirth during adolescence has been found to affect young women across multiple domains. Adolescent pregnancy and birth rates within sub-Saharan Africa are the highest in the world, and current overall prevalence of adolescent pregnancy in the region is 18.8% (95% CI: 16.7-20.9).<sup>16</sup> Sub-Saharan Africa is home to a growing “youth bulge” with the number of adolescents expected to reach 435 million by 2030.<sup>17</sup> Despite prevention efforts, adolescent pregnancy rates in the region have increased within recent years,<sup>18</sup> with countries such as Madagascar, Malawi and Mozambique reporting that over 30% of adolescent girls initiated childbearing before the age of 20.<sup>3</sup> Many countries in the region report high rates of very early marriage (before 15 years old) which goes hand-in-hand with unintended adolescent pregnancy. Although many pregnancies among 15-19 year-olds take place in the context of marriage, more than half of adolescent pregnancies are estimated to be unplanned and unintended.<sup>19</sup>

Within sub-Saharan Africa, adolescent pregnancy and motherhood occurs within the context of high rates of HIV, adding a layer of complexity to the experiences of adolescents and their children within the region. Sub-Saharan Africa remains at the centre of the HIV epidemic and is home to more than half of the global population of people living with HIV (20.6 million).<sup>5</sup> Globally, over 2 million adolescents (10-19 years) are living with HIV, a figure that has increased by almost 30% within the past decade.<sup>4</sup> This increase in the number of people living with HIV is, in part, attributable to advances in treatment and improved child development outcomes within the region. As a result, a growing cohort of adolescents is living with, or at risk of, HIV infection. Moreover, many adolescents within the region are HIV-exposed uninfected (HEU); global estimates approximate that 8 million adolescents are HEU.<sup>20</sup> Many more adolescents remain classified as Orphans or Vulnerable Children (OVC): orphaned by HIV, living in a household with people living with HIV, or vulnerable to HIV or the impacts of HIV (such as socio-economic impacts). Adolescent birth rates within HIV-endemic communities range from 30-208 per 1000 births, a rate higher on average than non-HIV endemic countries, based on data for 15-19 years old adolescents.<sup>3</sup>

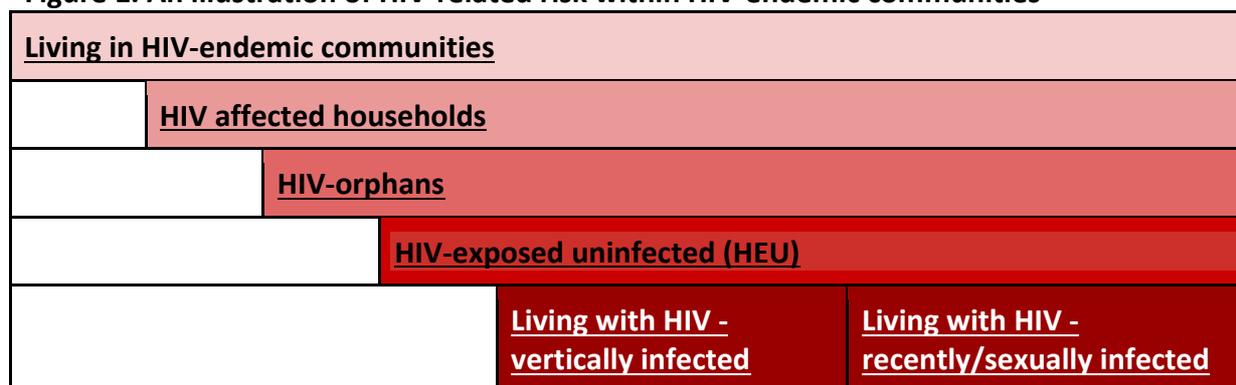
Given such complexity, policies and programming face new challenges in supporting adolescents in general, and adolescent parents in particular, within a continuum of HIV-related risks—and with that, new considerations regarding the children of parenting adolescents. To

meet all of our global HIV and Sustainable Development Goals, it is critical that we understand and respond to the needs of this intergenerational issue.

## 1.2 ADOLESCENT MOTHERS AFFECTED BY HIV AND THEIR CHILDREN—A SYNDOMIC OF VULNERABILITIES

Living in high HIV-endemic areas exposes adolescents to a continuum of HIV-related risks, which in turn has implications for adolescent pregnancy and parenting. This section summarises the evidence on health and well-being among adolescent mothers affected by HIV, defined broadly as illustrated in **Figure 1**, and their children. Adolescent fatherhood – an important and understudied topic – is also addressed in Section 2.

**Figure 1. An illustration of HIV-related risk within HIV-endemic communities**



Although HIV affects the lives of adolescent mothers and their children in multiple layered and interconnected ways (Box 1), data on each of the above sub-groups are not readily available. Neither HIV data monitoring and surveillance, nor maternal and child health monitoring data, adequately explores the intersection of these key health issues. Furthermore, although we can estimate the population of adolescent mothers living with HIV, no quantitative data is available for adolescent fathers.

### BOX 1 – HIV INFECTION, ADOLESCENT MOTHERS AND THEIR CHILDREN: STEPWISE IMPACTS

We begin with an overview of some of the available evidence relating to the experience of adolescent parents affected by HIV—including *living with HIV, HEU, HIV orphans, adolescents living in households affected by HIV and within high-endemic communities*. Specifically, we explore these populations’ experiences within sub-Saharan Africa across multiple key domains including mental health and cognitive development, physical health inclusive of sexual reproductive health, education, socio-economic factors, violence and relationships and outcomes and key indicators for the children of adolescents.

*How does HIV infection affect adolescents?* Growing up with HIV is associated with experiencing neurocognitive delays,<sup>21,22</sup> physical and mental health problems,<sup>23</sup> high rates of ART non-adherence, viral failure, low retention in care and mortality.<sup>24–32</sup> The impact of HIV on these life domains varies by time since infection, mode of infection, and time on treatment, requiring the provision of differentiated services to support adolescents living with HIV reach SDG targets.<sup>33</sup> Despite initial delays in pubertal development, once on ART, adolescents living with HIV report similar rates of sexual activity and pregnancy/childbearing to their un-infected peers.<sup>34</sup> As a result, although adolescents living with HIV are often discouraged from sexual relationships –

particularly unprotected sex – many have relationships and become pregnant, nearly all of them reporting unintended pregnancies.<sup>34,35</sup>

*How does HIV infection affect adolescent pregnancy and parenting among adolescents?* Amongst pregnant and parenting adolescents, additional challenges may emerge relating to HIV infection. These challenges may include: first learning about HIV-positive status during an antenatal visit (recently, sexually-infected adolescents);<sup>36</sup> regimen changes for those on ARVs (vertically-infected adolescents); challenges with adherence; and challenges with healthcare access and retention, including prevention of mother to child transmission [PMTCT], antenatal care, postpartum care and moving to adult services. In addition to managing their own HIV status, adolescent mothers living with HIV need to also account for the physical, emotional and cognitive development of their children. Adolescent mothers living with HIV have worse antenatal and post-natal care engagement, and are less likely to access programming that has shown to be effective among older mothers.<sup>37,38</sup> HIV infection, and adolescent pregnancy and motherhood, have a complex relationship. Younger girls (15 years and younger) who become pregnant have been found to be more likely to subsequently become infected with HIV.<sup>8</sup> Pregnancy may be a time of elevated risk of HIV exposure: in a study from Lesotho, the rate of seroconversions among n=200 adolescent mothers was significantly higher than that among the 741 older women (2.19 per 100 person-years compared to 0.67 for adult women).<sup>39</sup> Similar data on the elevated risk of HIV seroconversion during pregnancy has been reported in South Africa<sup>40</sup> and Kenya,<sup>41</sup> but with reduced clarity on teenage pregnancy.

*How does maternal HIV infection affect the children of adolescents?* For the children born to adolescent mothers living with HIV in sub-Saharan Africa, an additional set of considerations emerges relating to being born with HIV or being exposed (in-utero, peri-partum, post-partum) but uninfected. HIV exposure has significant implications for developmental outcomes among children of mothers living with HIV, though quantitative data from children of adolescent mothers living with HIV is limited.<sup>42</sup> Moreover, the health and well-being of children of adolescent mother living with HIV may be indirectly affected by living within an HIV-affected household and the structural and socio-economic issues associated with it. As a result, their access to healthcare services – including current and future HIV testing, and, when needed, access to and retention in care and treatment may be compromised. HIV infection exacerbates health risks for adolescent mothers and their children. Vertical HIV-transmission rates among adolescent mothers are three times higher than in adult women.<sup>9,37,43–45</sup> Research from Southern Africa suggests that HIV-infected adolescent mothers have much lower rates of accessing and adhering to ART in PMTCT programmes,<sup>37,43,45–47</sup> and high post-birth drop-out rates,<sup>48–50</sup> particularly when initiated on treatment for life (Option B+).<sup>51</sup>

In addition to the impacts of HIV infection on the health of adolescent mothers and their children, there are further risks for adolescent mothers and their children in contexts of HIV-affected communities, even if mother and child are not living with HIV. Data, research and associated literature is emerging, yet remains limited at the time of this report.<sup>1</sup> In the remainder of this section, we summarise the available data from sub-Saharan Africa clustered across several domains linked to the SDGs.



- For adolescent mothers who are not living with HIV but reside within high-endemic areas, HIV exposure and testing for HIV infection remain important in the context of physical health outcomes. For many adolescent mothers, finding out about their HIV status happens at the same time as their pregnancies are confirmed, often after their first trimester.<sup>7,37,52</sup>
- Adolescent mothers have been found to be at a greater risk of postpartum complications, including eclampsia, hypertension and maternal mortality, when compared to older mothers.<sup>53</sup> HIV infection negatively impacts maternal and child birth outcomes,<sup>54</sup> though no studies focusing on adolescent mothers were found.
- Sexual risk behaviour and in turn, horizontal HIV infection and repeat pregnancy, remain considerations for adolescent mothers. Repeat unintended pregnancy among ALHIV is more likely to result in poor birth outcomes inclusive of abortion.<sup>34,55</sup>
- Adolescent mothers are less likely to engage and be retained within health services and particular considerations for adolescent mothers living with HIV including ART adherence and uptake, HIV transmission, and engagement with PMTCT.<sup>9,56</sup> Adolescent mothers are slower to engage with antenatal care and less likely to engage with PMTCT.<sup>37,44</sup> One study identified that only 5% of pregnant ALHIV were on ART (relating to their own health) prior to engaging with antenatal care, compared with 43% of adults living with HIV.<sup>37</sup>
- Adolescent mothers are less likely to use post-partum contraception and access contraception services in general. Each year, a large number of adolescent girls attempts unsafe termination of pregnancy, which has significant implications for their health.<sup>19</sup>
- Not all adolescents experience only one birth in adolescence: 7.9% of 15-19 year olds in Niger reported at least two pregnancies, and 1.3% in Niger and Madagascar reported a third pregnancy.<sup>57</sup> A study of 757 adolescent girls living with HIV in Kenya found that 24.1% had more than one pregnancy by the age of 19.<sup>58</sup> In addition to the negative impacts of adolescent pregnancy, repeat pregnancies within a short time period remains a concern for adolescent mothers as this may pose further risks for both the adolescent outcomes and the child including preterm birth, low birth weight and higher risk of infant mortality.<sup>59-61</sup> Data regarding the impacts of adolescent pregnancy and HIV is not readily available, yet, repeated pregnancy and short birth intervals should remain a consideration for adolescent outcomes and future child development outcomes.



- Globally, poor mental health has been found to be associated with adolescent pregnancy and should remain a consideration for all parenting adolescents,<sup>62-65</sup> although a systematic review showed mixed results of the impact of adolescent pregnancy on long-term mental health.<sup>66</sup>
- Grief and HIV stigma by association remain key issues for those affected by HIV (living in HIV-affected households, orphans, HEU and those living with HIV) and likewise should be

considered for adolescent parents.<sup>67</sup>

- For adolescents living with HIV (ALHIV; both vertically and horizontally), internalised stigma and concerns surrounding disclosure are prominent concerns.<sup>68</sup>
- However, for some, the experience of adolescent motherhood has positive mental health and emotional impacts, promoting self-esteem, self-worth and maturity.<sup>69–71</sup>



- HIV-associated and neurocognitive disorders (HAND), as well as wider cognitive issues, have been found to be associated with HIV exposure and infection among children and adolescents.<sup>72–74</sup>
- Cognitive challenges have been associated with increased school absenteeism and delayed grade progression among adolescents living with HIV, in part due to missing school to attend clinic appointments.<sup>29</sup>



- Adolescent pregnancy is a visible and physical marker of early sexual activity, and as such, makes many adolescent mothers targets of stigma and discrimination at schools from peers, teachers and the community.<sup>75</sup> This may take the form of deliberate expulsion once the pregnancy is confirmed,<sup>76</sup> or mandatory tests or physical exams that are often involuntary and degrading.<sup>77</sup>
- Adolescent mothers are less likely to be enrolled in and attend school compared to peers who have not been pregnant, with adolescent pregnancy being identified as both a cause as well as a consequence of school dropout. Young women attending school but for fewer days have been found to have higher incidence of pregnancy than high-attenders.<sup>78</sup>
- Adolescent mothers may struggle to attend and perform well at school, due to mental health and psychosocial issues,<sup>79</sup> difficulties due to tiredness and concentration, and limited home-based support to stay in school, such as child care.<sup>75,80</sup>
- School outcomes and educational attainment are lower for adolescent mothers compared to their peers, and this group have been found to experience stigma within the context of school including policy and laws that directly discriminate against pregnant adolescents or adolescent mothers.<sup>75,76</sup>
- Supporting adolescents to return to school is likely to reduce future pregnancies and delay childbearing, as well as support adolescent mothers to provide better lives for themselves and their children. Positive examples of school support for adolescent mothers, including those living with HIV, encompass: providing social and financial support for adolescent mothers; time for breastfeeding or time off when babies are ill or need to go to clinics; choice to access morning or evening school shifts; establishing nurseries or ECD centres close to schools; and facilitating access to counselling and sexual and reproductive health products and services.<sup>76</sup>

**1 NO POVERTY** **SOCIO-ECONOMIC STATUS OF ADOLESCENT MOTHERS LIVING WITH HIV** **2 ZERO HUNGER**

- Numerous predictors of adolescent pregnancy have been identified in studies undertaken across sub-Saharan Africa that include socio-economic status (SES), community-level poverty, low household income, poor economic opportunities, and economic constraints.<sup>81–85</sup> Data from 52 studies (including 254,350 participants) from 24 sub-Saharan African countries showed that adolescent pregnancy was driven by rural residence (OR: 2.04), whether they had been ever married (OR: 20.67), not attending school (OR: 2.49), no maternal education (OR: 1.88), no paternal education (OR: 1.65), and lack of parent to adolescent communication on sexual and reproductive health (SRH) issues (OR: 2.88).<sup>16</sup>
- While socio-economic factors are key drivers for adolescent pregnancy, further challenges exist for adolescents once they become mothers; they have been found to have lower SES and reduced career prospects,<sup>86–88</sup> even after controlling for pre-existing social, economic, and health problems.<sup>89</sup>
- Parenting within the context of poverty brings numerous challenges. For adults, parenting might bring additional stressors that can affect relationships with their children; these might include the use of harsh discipline or the reduced abilities to support the educational development of the child.<sup>90</sup> Lower SES has also been found to be associated with reduced ability to provide substantive nutrition for child development.<sup>91</sup> The data regarding adolescent mothers' experience of poverty, particularly within the context of HIV, show that these stressors may be exacerbated in young mothers. These mothers, at extreme risk for social exclusion and poverty, may be victims of stigma related to pregnancy and motherhood. Furthermore, these young women may be excluded from pursuing further education, precluding them from accessing high education, employment opportunities, and resources for survival—perpetuating the cycle of poverty.<sup>92</sup>
- Poverty is inherently linked to food security, and adolescent pregnancy has been found to be associated with low birth weight, highlighting the implications of adolescent pregnancy for child nutrition and development.<sup>93</sup> Providing adequate food and household income, as well as employment and income generation activities, are prominent considerations for adolescent mothers and may have a long-term impact at a societal level.

**16 PEACE, JUSTICE AND STRONG INSTITUTIONS** **VIOLENCE EXPERIENCES IN RELATIONSHIPS AMONG ADOLESCENT MOTHERS AFFECTED BY HIV**

- Adolescent pregnancy has been found to be associated with age-disparate sex.<sup>94</sup> The prevalence of adolescent motherhood remains highest in regions where child marriage rates are reported to be higher.<sup>18</sup>
- How these relationships evolve through pregnancy and motherhood, and the involvement of the men involved within these relationships, should remain a consideration in programming. Qualitative research from the region suggests that adolescent mothers who live with their partners (husbands or boyfriends) without caregivers struggle to receive the

necessary support to overcome the challenges of early motherhood.<sup>75</sup>

- Pregnant and parenting adolescents are at a greater risk of intimate partner violence (IPV) compared to their non-pregnant, non-parenting peers. They are twice as likely to report physical or verbal IPV.<sup>95</sup> Likewise, IPV is also a risk factor for adolescent pregnancy.<sup>96</sup>
- Poor social support and caregiver-adolescent communication has been found to be predictors of adolescent pregnancy.<sup>97</sup>
- A lack of social and psychosocial support has been reported as a barrier for engagement with PMTCT services,<sup>98</sup> highlighting how social support intersects with multiple domains for adolescent mothers.



- Adolescent motherhood has implications for a number of child birth outcomes including birth weight, Apgar scores, preterm birth and perinatal mortality.<sup>53</sup> Such factors have been linked to late antenatal care bookings and fewer antenatal care visits.<sup>99</sup>
- Adolescent mothers including those living with HIV report conflicting sources of information about breastfeeding: in particular, whether to take breastfeeding advice from home or clinic.<sup>100</sup>
- Child developmental outcomes for the children of adolescent mothers across the HIV cascade should remain a key consideration. For adolescent mothers who are HEU or living with HIV, HAND and broader cognitive issues relating to child development outcomes (as mentioned above in relation to adolescent mothers) should remain a priority for research,<sup>42</sup> though quantitative data on neurocognitive development among children of adolescent mothers is not yet available.
- For adolescent mothers living with HIV or who are HEU, HIV testing of their infants and children, and engagement with testing, remains focal. HIV testing uptake rates for children of adolescent mothers remain sub-optimal, and there is no data on the effect of adolescent parenting on such uptake. And, likewise for those children diagnosed with HIV access to and engagement with treatment and care remains critical to bolster outcomes.
- Caregiving tasks are an important set of challenges for adolescent mothers who are straddling being an adolescent – going to school, supporting with chores at home – with being a parent – independently taking care of themselves and their children.<sup>101</sup>

Adolescent child and mother experiences combined with the layered impact of HIV have been mapped in Appendix 2.

## **SECTION 2: THE SCALE OF THE EXCLUSION**

Adolescent mothers living with HIV and their children often report exclusion, stigma, and discrimination. Importantly, for adolescent mothers living in high HIV contexts more broadly, this exclusion or potential for exclusion can also be keenly felt.<sup>75,76</sup> Because this population does not necessarily belong to one “category,” the potential for exclusion is high. Exclusion occurs at the intersection of young motherhood and HIV, and is exacerbated by the dual stigma linked to both adolescent motherhood and HIV.<sup>98</sup> The transition from childhood to adulthood can take shape in different ways for different individuals. Relatedly, research shows that a young person’s relationship to HIV may shift and change depending on the extent of their “affectedness.” Importantly, how HIV affects an adolescent mother may change throughout pregnancy and motherhood; for example, a significant proportion of new infections occur during late pregnancy, putting both mother and child at risk when ART initiation is delayed.<sup>7</sup> The syndemic of HIV and adolescent pregnancy and motherhood has resulted in this important population being overlooked in research, policy, funding and programming. Consequently, this highly vulnerable population remain largely invisible in the global HIV-focused response and maternal and child health work. This section highlights some of the ways in which HIV-affected adolescent mothers and their children are excluded from the HIV response, but also from related efforts that should respond to their critical health, psychosocial, and material needs.

### **CONTESTED LEGAL AND CULTURAL DOMAINS**

Several cross-cutting cultural and legal issues affect adolescent mothers, including legal emancipation, return-to-school policies, and in many HIV-endemic regions, early marriage. Factors associated with HIV infection and early marriage (marriage before 18) in many communities in sub-Saharan Africa overlap. In particular, harmful gender norms and inequalities at home and communities shape the vulnerabilities of adolescent girls to poor health, education and life outcomes, which are consequences of HIV infection and early marriage.<sup>102</sup> These are often exacerbated by specific practices and policy environments that are particularly harmful to the health and well-being of young mothers and their infants.<sup>75,76,102</sup> In many ways, these structural factors pose additional risks to adolescent mothers, further complicating their life circumstances, adding pressures related to social expectations, and placing them at a distinct disadvantage as compared to their peers.

Becoming a mother during adolescence in unfavourable cultural and legal environments further entrenches these young women’s complex vulnerabilities. These vulnerabilities include the lack of access to educational opportunities, leading to later exclusion from employment and formal economy, as well as the lack of access to supportive family or peer relationships, leading to social isolation. Furthermore, even where legal protections are in place for these young women, there is often a disconnect between law and implementation that jeopardizes the rights, and well-being, of adolescent mothers and their children.

#### *School, return to education and “learners’ maternity leave”*

Across sub-Saharan Africa, there are divergent policies and practices at a school level for adolescent mothers. A review of the legal environment across 23 East and Southern Africa conducted by UNFPA in 2015, found that only half the countries had legislation and policies on

the management of learner pregnancy and re-entry to school after delivery.<sup>103</sup> While the importance of the right to education is clear in existing policies, most existing policies identified by the review took a punitive approach to school learner pregnancy.<sup>103</sup> In South Africa, where 5.1% of all births are to mothers 15-19 years,<sup>3</sup> efforts have been strengthened to promote sexual education and encourage learners to return to school. A promising draft policy for pregnant school learners outlines clear steps through which adolescent mothers can remain in school for as long as possible, without threats to their health. In Zimbabwe, the Ministry of Primary and Secondary education would allow a young mother to return to school following the birth of their child.<sup>104</sup> These examples stand in stark contrast with Tanzania, where the current government has ruled that girls who become pregnant cannot return to school at all.<sup>105</sup>

Despite campaigns to support re-enrolment and the right to re-entry entrenched in policies,<sup>103</sup> a recent UNESCO report cites challenges in consistently applying policies at implementation level; sometimes girls are obliged to apply to a different school or undergo a minimum 'waiting period' until they re-enrol.<sup>106</sup> Coupled with stigma, discrimination, and lack of financial incentives, many young mothers will struggle to return to school at all even in contexts where this reintegration is theoretically endorsed.<sup>75</sup> A premature end to education has implications for adolescent mothers and their families – potentially limiting economic opportunities – but also has widespread economic, social and political consequences at a country and regional level. Preventing adolescent mothers from continuing with their education also threatens the attainment of a number of Sustainable Development Goals inclusive of SDG 4 (Education), 5 (Gender Equality) and 8 (Economic growth).<sup>75,105</sup>

#### *Health-related policy and regulatory issues for adolescent mothers*

There is an additional set of health-related challenges surrounding adolescent motherhood, HIV, medical treatment and care-seeking. The above-cited UNFPA review concluded that in many countries the age of consent to receive medical treatment, including access to contraceptives and HIV counselling and testing was not provided for in laws and policies.<sup>103</sup> Such absence of age of consent for accessing medical treatment and health services creates a barrier to accessing services, based on confusion and consent processes driven by individual beliefs of providers.<sup>103</sup> While young women in many countries become legally emancipated when they have children, they are often still treated as minors and subject to mistreatment at health facilities. As a result, many adolescent girls and young women fail to access sexual and reproductive health services, in part due to the stigma and discrimination that they experience when they try.<sup>107</sup>

In an exploration of HIV-specific laws, Eba and Lim identified, that out of 28 sub-Saharan African country policies reviewed, only 7 (Mozambique, Uganda, Guinea, Congo, Cote d'Ivoire, Burkina Faso) had reduced the age of consent regarding HIV-testing and access to services to below 18 years, though the South African Children's Act was cited as an example of good practice in safeguarding adolescent rights to HIV testing from the age of 12.<sup>108</sup> And amongst 8 countries who had set the legal age of consent above 18 years (Comoros, Dominican Republic of Congo, Kenya, Madagascar, Mauritius, Niger, Sierra Leone, Togo), only Kenya and Sierra Leone enabled access to HIV-testing services below the age of 18 years for pregnant or parenting adolescents.<sup>108</sup> The varied sanctions within HIV laws and the lack of emancipation for pregnant and parenting adolescents is likely to undermine pregnant and parenting adolescents' ability to access HIV services and provision.

### *Policy environment regarding child marriage & early parenthood*

There are also conflicting, and often contradictory, laws and policies around child marriage, and these policies can greatly affect the ways in which adolescent mothers are made visible and granted protections. In Tanzania, over 30% of girls are married by the age of 18, and 21% of girls ages 15-19 have given birth.<sup>109</sup> While marriage before the age of 18 was ruled as illegal by the constitutional court in 2016, this decision has been challenged by the Attorney General. This clash between protection and preservation is also apparent in Zimbabwe, where the legal age of sexual consent is 16, and sex with an adolescent younger than 16 is regarded as statutory rape, but a special exemption is made for members of the Apostolic Church. This reality underpins more significant structural drivers of adolescent pregnancy and HIV infection, and also calls attention to the need to prioritise comprehensive, multi-level, and multi-sectoral responses to issues of child protection in relation to HIV and pregnancy.

*In a recent talk at the Psychosocial Support Forum in Windhoek, Nyaradzai Gumbonzvanda, the AU Goodwill Ambassador for Ending Child Marriage, also advocated for abolishing the framing of “child marriage” as such, and challenged the audience to call the practice by the more accurate terms of abuse, exploitation, and rape.*

### **INVISIBLE IN THE NUMBERS**

During the process of collating evidence for this background note, it became evident that HIV-affected adolescent mothers are invisible in the large-scale quantitative data that would be necessary to highlight the scale of the issue: they are unable to be identified as a specific group, with specific needs, in the majority of international agency reports. Recently, there have been increasing efforts to explore the needs of adolescent mothers and their children in sub-Saharan African contexts, as adolescents are both quickly becoming the largest demographic group at the continent at the same time as emergent evidence shows worse outcomes across a number of domains.<sup>1</sup> As a result, policymakers and programme implementers are starting to pay attention to this highly vulnerable group and their children. Nevertheless, there is inadequate “big data” to reveal the extent of this intersection: how many of the young women living with, or affected by, HIV are also becoming mothers? Who are the adolescent mothers? Where do they live? What are their experiences of vulnerabilities that have resulted in adolescent motherhood? There are several reasons for why it is hard to collect this data. First, adolescent girls in some, but not all countries may become emancipated adults when they become mothers, and through motherhood then become included in data on adult women. Second, for ethical reasons, most research and studies collect only data from adolescents older than 18, when they can provide informed and voluntary consent independent of their caregivers. Third, when included in national-level data, the information is not disaggregated by age or sex. For example, most data is reported for 15-24 year olds, including some retrospective indicators on experiences before the age of 15 or 18.

UNAIDS has highlighted the need to make commitments specifically for reducing the number of new infections among adolescent girls and young women. In their Women and HIV publication,<sup>4</sup> UNAIDS reports on progress towards the commitment of 90% coverage of sexual and reproductive health services in tandem with HIV prevention options. They report on low rates of modern contraception uptake and high rates of pregnancy among young women in sub-

Saharan Africa. However, data collection and routine surveillance does not adequately capture the overlap between these young women and those living with HIV. Data on young women affected but not infected by HIV who are becoming mothers is even harder to locate. This could be in part because some of this data exists elsewhere, in published DHS data, WHO country profiles and UNFPA reports. For example, DHS only collects data on 15-19 year-olds and as such, data regarding younger adolescents and their experience of pregnancy remains limited. In a study focusing on household data from 42 countries – including those from sub-Saharan Africa – Neal et al. (2012) estimate that 2.5 million adolescents (12-15 years) give birth annually.<sup>110</sup>

Similarly, although the Sustainable Development Goals mark a shift towards adopting a more integrated and interdisciplinary set of priorities, HIV-affected adolescent mothers and their children are not explicitly recognised in the SDGs but rather fall into a few potential places. These include indicators towards Goals 3.1.1 (reducing maternal mortality ratio), 3.3.1 (number of new HIV infections per 1,000 uninfected population, by sex, age and key populations), 3.4.2 (suicide mortality rate), 3.7.2 (adolescent birth rate), and 5.3.1 (proportion of women married or in a union before age 15 and 18).

There is a need to create, disseminate, and standardize the right tools to be able to capture these statistics. Advocacy is also crucial to highlighting the need to analyse meta-data with the overlapping experiences of adolescent motherhood and HIV. UNAIDS has compiled an options menu for country-specific needs, to cater towards both prevention and treatment dimensions, which is stratified by appropriateness for incidence level.<sup>111</sup> However, more large-scale promotion of this excluded group is necessary in order to obtain standard, usable data about how to best understand the scale of this intersection and thus address it. Disaggregating data by 5-year age bands may be a strong first step to making this possible<sup>112</sup> so that data on 10-19 year-olds could be collated as needed.

Smaller-scale data reveals powerful stories from NGO programming and case reports. Formative research for the development of the Gates Foundation-supported ABCD program,<sup>113</sup> shared in more detail below, revealed high levels of stigma among adolescent mothers living with HIV in Uganda. Young mothers living with HIV were often forced to leave their homes due to family shame after becoming pregnant; in many cases, they sought out new relationships for socioeconomic stability after their child's father refused to support them, putting them at risk of rapid repeat pregnancy in precarious situations.<sup>114</sup> Stigma and fear of gender-based violence associated with HIV-status disclosure have also been found to result in marginalisation and discrimination. These experiences are further exacerbated by internalised stigma.<sup>113-115</sup>

### **INVISIBLE IN SILOED PROGRAMMING**

In recent years, the population of ALHIV, and young women in particular, has become more visible, even if childbearing ALHIV are still less widely discussed and accounted for. Groves et al. (2018) point to the need to broaden the criteria for how we conceptualize HIV-affected adolescent mothers, which the authors of this note support. Growing evidence demonstrates that pregnant and parenting ALHIV are less likely to utilize health services and adhere to treatment, and these young women are a key population for treatment and prevention efforts alike. However, significant amounts of current HIV funding and programming, such as DREAMS, focuses on supporting adolescent girls and young women to prevent HIV infection. Funding also

goes to PMTCT programming aiming to support mothers living with HIV to be healthy and avoid infections among their children, while potentially overlooking pregnant and parenting adolescents who may be HIV-negative but navigating high-HIV risk contexts, too. Moreover, our approach to adolescent girls and young women living with HIV is often centred around denialism around their sexual practices, fertility desires and relationships, focusing primarily on prohibitions: don't forget your pills, don't tell anyone your status (to protect yourself), and don't have sex.<sup>116</sup> As a result, adolescent mothers living with HIV may be at risk of repeated, poorly-spaced pregnancies, which put them and their children at greater risk.<sup>35,99</sup>

There is further evidence to support the claim that prevention efforts, as well as key services, for adolescent mothers and their children are siloed and not integrated. This fragmentation means that a population that is characterised by the intersection of multiple vulnerabilities can be both “prioritised” and at the same time excluded from necessary services. Limited integration between HIV and SRH services results in adolescent mothers living with HIV—more so than those who are living in HIV-affected homes or communities—experiencing ping-pong care, referred between providers and facilities to receive the full range of healthcare services and products that they need. Beyond the structure of services, there is also a need to prioritize sensitive and caring service delivery for this population. Hostile and punitive interactions between health providers and pregnant/parenting adolescents or adolescents living with HIV hinder their access to health services and products.<sup>107,114,117</sup>

To understand other risk factors for exclusion in this population, there is a need for more visibility around who these adolescent mothers are, and what their life circumstances are. For example, while child marriage is not necessarily a primary risk factor for becoming infected with HIV, it is tied to underlying risk factors such as unequal gender norms, the inability to negotiate safe sexual practices, and socioeconomic deprivation. An expert consultation found that programmes targeting adolescent girls and young women vulnerable to HIV and child marriage have tended to remain siloed and separate from one another, and not integrated.<sup>102</sup> In certain contexts, such as South Africa and Swaziland, the majority of young women experiencing new HIV infections are unmarried,<sup>118</sup> but inequitable sexual relationships and gender-based violence expose young women to HIV and unintended pregnancies.

In the South African context, research has highlighted the need to explore educational and structural options to reduce both teenage pregnancy and HIV. Identifying common risk factors is important: in this case, incomplete schooling represents risk factors to both.<sup>119</sup> While there are differing approaches to retaining teens in school across the continent, we have an understanding of teen-focused campaigns that can be effective in promoting positive messaging and reaching a broad base in numerous domains, and may be able to be expanded. In South Africa, these include campaigns that encompass high-intensity and high-frequency coverage of HIV education media, such as loveLife and Soul City, the Adolescent Friendly Clinic Initiative,<sup>119</sup> and most recently, SheConquers, which combines both reductions in HIV infections and unintended pregnancy among adolescent girls and young women. While these campaigns cater to adolescents in an attempt to prevent HIV and raise awareness about living with HIV and living in high endemic communities, they do not have provisions for adolescent girls once they become mothers. In the last year, targeting a broader population in Eastern and Southern Africa, UNESCO's Early and Unintended Pregnancy Campaign has called attention to gaps for young women in HIV-endemic countries.<sup>120</sup> The campaign has focused on education and

support as well as mobilising stakeholders to push for social, behavioural, and policy change to reduce the number of early and unintended pregnancies and unsafe abortions in this generation/demographic boom. However, as noted above, even where cross-cutting programming may exist, access to these services may be uneven due to individual-level factors, including outward and internalised stigma.

**BOX 2 – SPOTLIGHT ON LIVING WITH HIV: ADOLESCENT MOTHERS’ ACCESS TO AND RETENTION ON PMTCT**

Evidence shows that initiating and retaining adolescent mothers on HIV care is more challenging than doing so with older mothers—and is associated with additional physical and mental health risks for both mothers and children. Lila et al. (2017) found that in Tanzania, some pregnant adolescents did not know about PMTCT and were only tested for HIV at their first visit to the clinic.<sup>121</sup> In Kenya, Luseno et al. (2019) found that adolescents experienced specific risks due to issues around autonomy, consent, and emancipation surrounding their HIV test results and treatment options.<sup>56</sup> In this sense, the “motherhood in childhood” paradigm may prevent young mothers from accessing the best options for care.

However, very few countries in sub-Saharan Africa collect specific large-scale data on PMTCT for adolescent mothers in particular. UNICEF’s Countdown to Zero country profiles capture critical data on new paediatric infections, as well as HIV incidence in women 15-49 and PMTCT take-up, but do not specifically disaggregate rates of PMTCT in young mothers. In most existing data profiles, pregnant women and ALHIV remain separate populations, even in those countries where the overlap in these groups is high.<sup>111</sup>

**OUT OF FOCUS IN FUNDING MECHANISMS AND OPPORTUNITIES**

Several funding opportunities have encouraged research and innovation in addressing the syndemic of HIV and adolescent motherhood in the last few years, including but not limited to the Gates Foundation Grand Challenges Innovation adolescent mental health call and the DREAMS Innovation Challenge awards through JSI Inc. Although this funding is relatively small in scale, these opportunities have resulted in the few examples of programming that we could locate for adolescent mothers living with and affected by HIV in sub-Saharan Africa, described in detail in Appendix 2. Notably, no funding within the formalised HIV sector focuses on adolescent mothers living with and directly affected by HIV. These funding mechanisms either focus strongly on prevention of HIV among adolescent girls and young women, PMTCT for mothers of all ages, or ensuring that people living with HIV (of all ages and sexes) remain in care and virally suppressed. This may be due to the lack of data focusing on proportions of resources available for adolescent mothers and their children across the continuum of HIV impact.

**ADOLESCENT FATHERS: THE FORGOTTEN HALF**

Adolescent fathers are another group who have been by and large excluded from conversations around pregnancy prevention, childbearing, and HIV. A recent systematic review examined the predictors and outcomes of adolescent fatherhood, but found no studies from Africa.<sup>122</sup> Emerging evidence from South Africa in particular points to the importance of involving young men in conversations around HIV prevention, negotiating sexual situations, and preparing for childbearing.<sup>123</sup> As is the case with adolescent mothers, young men who are more vulnerable in certain ways—with lower education, and a greater number of sexual partners—have been found across contexts to be more likely to become young fathers than their peers.<sup>124,125</sup>

Interviewing young fathers ages 17-19 in KwaZulu-Natal, South Africa, where rates of HIV among young women are among the highest in the world, Mvune et al. (2019) explore different contexts of risk.<sup>126</sup> Their article details two types of parties/ social gatherings that young men take part in where sexual risk-taking is high, as is unplanned pregnancy. Understanding where young people meet and interact offers insight into targeting such rites of passage for HIV and pregnancy prevention. There is further evidence that shows that, just as with young women, knowledge around sexual and reproductive health in this age group and population group is lacking, and vitally needed.<sup>127</sup>

### SECTION 3: PROGRAMMING FOR YOUNG MOTHERS AND THEIR CHILDREN

Interventions to support adolescent mothers affected by HIV and their children to attain good health, education, and socio-economic outcomes in Sub-Saharan Africa are limited, however, the existing efforts are promising. Findings from several recent interventions to improve retention in care and HIV outcomes among women living with HIV of all ages have found that they are least effective for younger mothers. Home-based healthcare worker visits, support groups and adherence clubs, and peer support can improve maternal outcomes amongst adults;<sup>128–131</sup> however, uptake among adolescent mothers is low.<sup>38</sup> Qualitative feedback on established programmes,<sup>98,130</sup> but quantitative evidence on their effectiveness for adolescent mothers living with HIV in resource-constrained settings is not yet available. This section summarises some of the features of nine programmes that support adolescent mothers affected by HIV (see **Table 1** for an overview), which were identified through a review of the literature and consultations with experts in the field. Case studies for each programme are presented in **Appendix 3** with references to published or publicly available materials where available, though peer-reviewed publications are forthcoming in many cases.

Notably, the programmes shared several features:

1. **Mentorship and peers** – almost all of the programmes identified in this report were delivered through models centred around mentor mothers or peer supporters. Programmes such as mothers2mothers, Africaid’s Zvandiri and ABCD supported women living with HIV to become mentors for adolescent mothers living with HIV. The ability to extend the reach of HIV and primary health services through mentor mothers and peer supporters provided invaluable support that ensures adolescent mothers living with HIV attained better HIV and health outcomes. In addition to these positive outcomes for adolescent mothers affected by HIV, these programmes also provided life-altering capacity sharing and employment opportunities for the mentor mothers and peer supporters themselves. Current and future programmes must acknowledge the need to appropriately remunerate mentor mothers and peer supporters.
2. **Group-based programming** – a large proportion of the programmes identified provided support for adolescent mothers in group-based settings, though rates of participation were not always high. Low rates of engagement in group-based programmes highlight the need to reduce barriers to access for adolescent mothers, which are often different to the issues faced by older mothers. Two group-based programmes used mobile technologies to facilitate access to information and support.
3. **Combining adolescent mother support with early childhood development** was key to multiple community-based programmes, including the AIDSFree, REPSSI and KMET-delivered programmes in Malawi and Kenya.
4. **Holistic approaches to support adolescent mothers to overcome adversities and thrive** were critical to several programmes. These included involving caregivers and families, providing childcare, support for return to school, and economic strengthening opportunities.

#### COMBINATION PROGRAMMING FOR ALHIV

Although not focused on adolescent mothers specifically, emerging data on combination social protection highlights the importance of multi-component interventions to support vulnerable adolescents achieve success across multiple life domains. Recent analyses of the Mzantsi Wakho data—a large cohort of ALHIV in South Africa—suggests that safe schools, parenting

support, and social cash transfers (child-focused government grants) improve the likelihood of adolescents attaining at least two Sustainable Development Goals. However, the combination of all three supported adolescents living with HIV, including adolescent mothers, to achieve stronger improvements across the seven SDG-related targets from SDG 3 (health), SDG 4 (education), SDG 5 (universal health), and SDG 16 (violence prevention).<sup>132</sup> Similar analysis is planned among a sample of n=1,800 adolescent girls and young women from the HEY BABY and Mzantsi Wakho cohort studies ( $\pm 900$  who became mothers before 20 years old,  $\pm 800$  living with HIV) to look at the effects of development accelerator programmes among adolescent girls and young women living with and affected by HIV.

**TABLE 1. SUMMARY OF PROGRAMMES SUPPORTING ADOLESCENT MOTHERS AFFECTED BY HIV AND THEIR CHILDREN**

Intervention/ Programme name (alphabetically)	Country of implementation	Implementing partner	Key populations	Key themes
Ask-Boost- Connect-Discuss (ABCD)	Malawi Tanzania Uganda Zambia	PATA	Adolescents and young women living with HIV who are pregnant or parenting; their children	Peer support; Technology-assisted group facilitation; Education for child development and stimulation; Adaptation of an existing intervention
Africaid's Zvandiri, Young Mentor Mothers	Zimbabwe	Africaid	Adolescents living with HIV, including those who become parents	Peer support; Adherence; Counselling; I Linkage to care; PMTCT
Community Model for Fostering Health and Wellbeing for Adolescent Mothers and their Children	Malawi	REPSSI	Adolescents mothers including marginalized married girls and their children	Education for child development and stimulation; Psychosocial support
Jielimishe Uzazi na Afya (JUA)	Kenya	AIDSFree (JSI Inc as lead implementer)	Adolescent mothers, including some who were living with HIV	Peer support; Linkage to services
Mentoring Adolescent Mothers At School (MAMAS)	South Africa	Drexel University	Adolescent mothers, including some who were living with HIV	Peer support; School re-enrolment; Educational sessions
mothers2mothers	Malawi South Africa Uganda Zambia,	mothers2mothers	Mothers living with HIV, including adolescents	Peer support; PMTCT; Adherence
Teen Mothers Support Groups	Botswana	Botswana-Baylor Children's Clinical Centre for Excellence / Baylor University	Adolescent mothers living with HIV	Life skills; Adherence; Peer support
Project Insaka	Zambia		Adolescent mothers	Psychosocial support; Technology-assisted group discussion
Sisterhood for Change, Changamsha Watoto	Kenya	KMET	Adolescent mothers living with HIV and their children	Economic empowerment Skills facilitation

#### **SECTION 4: LOOKING FORWARD – RECOMMENDATIONS FOR CONSIDERATION**

This report summarises the evidence on what we know about adolescent mothers affected by HIV and their children, and highlights critical gaps for research, policy, programming and funding. One of the most important changes that must underscore the above recommendations is the marrying of HIV programming (which primarily focuses on HIV prevention, treatment and care) with our maternal and child health efforts, including family planning, antenatal and postnatal care, and early childhood development.

#### **OVERALL ADVOCACY RECOMMENDATION**

- Bring together the HIV, SRH, and maternal and child health advocacy efforts to ensure that the syndemic of adolescent parenthood and HIV are addressed in an integrated way and to promote sustainable financing for research, programming and policy development.
- Explore intergenerational approaches that bring maternal and child health and well-being together.
- Test and rollout models that integrate HIV and SRH services and products in a meaningful way that address the complex lives of adolescent mothers and their children.

#### **RESEARCH AND DATA: ADDRESSING GAPS IN THE EVIDENCE BASE**

- Strengthen data collection mechanisms: age-disaggregated programming and research data are needed, including 10-14 year olds in DHS and disaggregating data from 15-24 year olds into 15-19 and 20-24.<sup>112</sup>
- Prioritize research on the impact of being an HEU adolescent across the cascade of outcomes for adolescent parents and their children.
- Prioritize longitudinal research on the effects of HIV infection (sexual or vertical) on the health of adolescent mothers and their children.
- Promote research regarding the impacts of repeat pregnancies within adolescence, to inform policy and programming efforts.
- Include adolescent fatherhood within programming and research data.

#### **PROGRAMMING**

- Account for adolescents as a special life stage by ensuring that programmes integrate HIV and SRH services and implement monitoring and evaluation within such programming.
- Begin to incorporate critical “stakeholders” including caregivers and partners, as adolescent mothers are not getting pregnant by themselves, neither are they fully independent of caregiving structures common in adolescence.
- Identify sector-based programming for adolescent mothers affected by HIV, including but not limited to: health, education, social development/social work, and employment/labour.
- Include ECD/ health programming to support the needs of children of adolescent mothers affected by HIV.
- Consider ways to integrate health services to increase early engagement and access to antenatal care services to bolster outcomes for children of adolescent mothers.

- Understand better motivations and barriers to breastfeeding among adolescent mothers.

#### **POLICIES & GUIDELINES**

- *HIV-related guidelines*: prioritize special considerations for adolescent mothers living with HIV in treatment guidelines, disclosure guidelines, and differentiated services guidelines. In South Africa, recent guidelines group adolescents together with adults and keep pregnant/lactating women in a separate category; however, there is limited acknowledgement of overlap in these groups.
- *Maternal, neonatal, and child health guidelines*: consider in more detail the nuanced needs of adolescent mothers affected by HIV.
- *Life course-centred policies*: consider how our policies and guidelines on integrating HIV and SRH services account for adolescence as a specific life stage including access to contraception and age-appropriate SRH education.

#### **RESOURCE ALLOCATION**

- Collect data on resources allocated to adolescent mothers and their children to ensure that critical resources mobilised in vertical programming can be harnessed for greater impact.
- Allocate resources to supporting adolescent mothers and their children meet multiple SDGs and HIV-specific outcomes, rather than individual ones.

## **APPENDIX 1: METHODOLOGY & LIMITATIONS OF THE EVIDENCE**

### **METHODOLOGY**

The evidence discussed within the brief is drawn from a scoping review of published peer-reviewed manuscripts and unpublished literature, and consultations with key stakeholders working in the field of adolescent pregnancy and HIV within sub-Saharan Africa including academics, health professionals and programme implementers (see footnote).<sup>2</sup> To identify literature and documents relevant to this brief, keyword searches of scientific databases (PubMed including Medline, Google Scholar), conference abstract archives (International AIDS Society, AIDSImpact) and relevant organisation archives (WHO, UNICEF, UNFPA) were undertaken. Documents were also drawn from known relevant programming and research projects that were ongoing at the time of publication. Keywords used within searches included: pregnancy, birth, adolescent, and HIV, and associated synonyms.

### **LIMITATIONS OF THE EVIDENCE**

A number of limitations should be considered within the interpretation of the evidence presented.

- Often literature regarding adolescence is grouped around the age range of 15-24 years, therefore it is difficult to disentangle adolescents ages 10-19 within this group.
- Ethical approval within research studies often only starts from 18 years. Thus, overall engagement of younger adolescents remain limited.
- It is difficult to engage adolescents in research and specific resources are required to support such engagement (i.e. specifically trained researchers/fieldworkers/data collectors). These resources are also vital to formulating relevant, ethical and acceptable research and interventions.
- Within the literature, there is an assumption of negativity with regard to adolescent pregnancy, and benefits and equalities are not necessarily articulated.
- Although limited, the literature that is available focuses regarding adolescent parenthood focuses on adolescent motherhood and there is scant literature regarding adolescent fathers within sub-Saharan Africa.
- Overall, there is limited literature regarding the syndemic of adolescent parenthood and HIV.
- While efforts have been made to be as comprehensive as possible, the time constraint related to this brief should be noted.

Nevertheless, adolescent pregnancy and parenthood within sub-Saharan Africa remains a prominent issue, and within the context of HIV, particular challenges for this group and their children are highlighted. Bolstering well-being and improving outcomes across physical, social, psychological and economic domains for adolescent parents and their children remains a critical step to promoting development and enabling these families to thrive across multiple future generations.

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<sup>2</sup> Key stakeholders consulted within the development of this evidence note in collaboration with Coalition members: United Nations Population Fund (UNFPA) Eastern and Southern Africa Regional Office |Africaid Zvandiri programme | Pediatric Adolescent Treatment for Africa - ABCD project |MAMAS (DREAMS innovation Challenge) |Dr. Kathleen Powis - HEU leading expert

**APPENDIX 2: MAPPING OF ADOLESCENT MOTHER AND CHILDREN EXPERIENCES ACROSS MULTIPLE LIFE DOMAINS**

	<u>Young mothers (or parents) in SSA</u>	<u>Living in HIV-endemic communities (countries of prevalence &gt;5%?)</u>	<u>HIV-affected households</u>	<u>HIV-orphans</u>	<u>HIV exposed uninfected (HEU)</u>	<u>Living with HIV - vertically infected</u>	<u>Living with HIV - recently/sexually infected</u>	
<b>Mental health and cognitive development</b>	common mental health disorders: <ol style="list-style-type: none"> <li>1. Depression</li> <li>2. Anxiety</li> <li>3. Trauma/Post-traumatic stress disorder</li> </ol> (proxy measures of adolescent mental health i.e. drug and alcohol use/risk behaviour) Development of self-esteem/self-worth/maturity							
				Stigma by association Grief/psychosocial needs				
						HAND/cognitive challenges		
							internalised stigma disclosure fears and consequences	
<b>Physical health inc. SRH</b>	HIV exposure and testing							
	Postnatal/postpartum complications including eclampsia, hypertension and maternal mortality Repeat pregnancy Contraceptive use/sexual risk behaviour and unsafe abortion Health service access, engagement and utilisation Sexual infection							
							ART adherence and uptake HIV transmission PMTCT engagement	
<b>Education</b>	School support/stigma within the school context School dropout/enrolment/attendance/returning to school Educational attainment							

Adolescent mothers affected by HIV and their children

	<u>Young mothers (or parents) in SSA</u>	<u>Living in HIV-endemic communities (countries of prevalence &gt;5%?)</u>	<u>HIV-affected households</u>	<u>HIV-orphans</u>	<u>HIV exposed uninfected (HEU)</u>	<u>Living with HIV - vertically infected</u>	<u>Living with HIV - recently/sexually infected</u>
<b>Socio - economic factors</b>	Household wealth/income/food security Employment/income generation Rural vs. Urban						
<b>Violence and relationships</b>	Support systems/stability Caregiver-adolescent communication IPV exposure Age disparate relationships & early/child marriage						
							Disclosure of HIV status to caregivers, sexual/ romantic partners, and eventually their children
<b>Child(ren) and ECD</b>	Child birth outcomes inc. birth weight, Apgar score, mortality Breastfeeding intentions Antenatal care engagement Child developmental outcomes						
						Cognitive development challenges	
						Infant testing and diagnosis	
						HAND HIV-infected children - access to treatment and care	

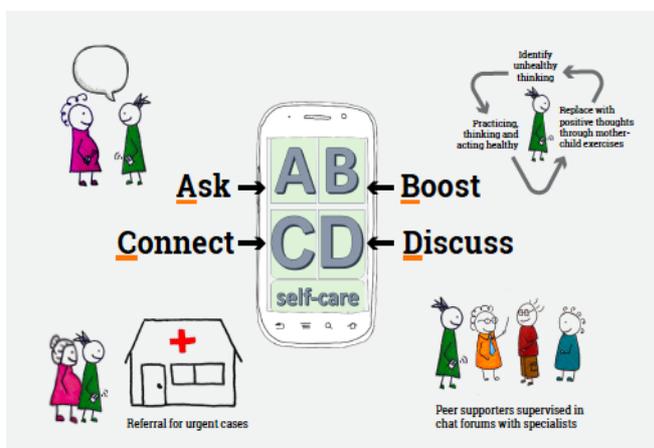
## APPENDIX 3: CASE STUDIES OF IDENTIFIED PROGRAMMING FOR ADOLESCENT MOTHERS AFFECTED BY HIV AND THEIR CHILDREN

This appendix provides information collected during the compilation of this background note from implementing partners across sub-Saharan Africa. The length of each case study is dependent on information available at the time of the report, and does not reflect coverage, reach, nor the success of each programme.

### 1. ASK-BOOST-CONNECT-DISCUSS (ABCD)

ABCD is an adolescent co-developed package of care provided by young peer supporters living with HIV to reduce adolescent maternal depression. It has been developed by the Paediatric Adolescent Treatment for Africa (PATA) and the Universities of Cape Town and Oxford as well as peer supporters, technical advisors and adolescent mothers. ABCD was conceptualised as a package of care to improve access to maternal depression support provided by young peer supporters living with HIV. The tool is an adaptation from the evidence-based World Health Organization (WHO) 'Thinking Healthy' Program. This program is a cognitive-behavioural therapy (CBT)-based intervention, designed for delivery by non-specialists in low- and middle-income contexts, with proven impact on maternal depression.<sup>133</sup>

The ABCD tool addresses the psychosocial needs of young mothers living with HIV across four domains: ASK, assessing psychosocial needs of young mothers; BOOST, cognitive-behavioural therapy-based group sessions based on WHO 'Thinking Healthy' modules; CONNECT, linking young mothers to professional care and additional resources; and DISCUSS, interactive chat forums between peer supporters and professional advisors.



#### Progress to date

STAGE 1 – ADOLESCENT CO-DEVELOPMENT, September 2018. Peer supporters contributed knowledge of pregnancy, context, key issues, incorporated into

adapted sessions. Technical assistants and peer supporters provided feedback and suggestions for tool and content adaptations.

STAGE 2 – PROTOTYPE TESTING, November 2018. The ABCD tool was adapted according to feedback from end-users and technical assistants. Peer supporters were trained to use the mobile app by in-country technical assistants, engaging health providers and facility counsellors in this process.

STAGE 3 – ADAPTATION & TRAINING. February 2019. Pilot testing was conducted by 20 peer supporters in 15 health facilities across four countries (Uganda, Zambia, Malawi and Tanzania) for feasibility and acceptability. The mobile training and supervision tool provided a guide for peer supporters through the package of 'Thinking Healthy' steps.

STAGE 4 – PILOTING. March-August 2019. Implementation was conducted by Peer Supporters for 143 young pregnant women, using mobile apps guiding them through eight 'Thinking Healthy'-derived sessions. Feedback from peer supporters and young pregnant women points to the transformational effect of psychosocial support on young pregnant women's health and well-being. Through ABCD sessions, a number of highly vulnerable young women who elsewhere would not have been identified were referred by Peer Supporters to professional counselling. As challenges during sessions arose, Peer Supporters consulted health facility supervisors, counsellors and technical advisors for support. Co-development continued during the piloting phase, where Peer Supporter feedback was captured during and after each session from mobile devices and addressed in real-time. Pilot implementation of ABCD catalysed conversations around psychosocial support within facilities and created awareness of young pregnant women's vulnerability and needs at a broader facility level.

## **2. AFRICAID'S ZVANDIRI PROGRAMMING FOR ALHIV, INCLUDING YOUNG MOTHERS**

Zvandiri, a programme implemented by Africaid in Zimbabwe, provides a package of differentiated services for children, adolescents and young people living with HIV so that they know, understand and accept their HIV status; that they start and remain on antiretroviral treatment with understanding and confidence; that they remain engaged in treatment, care and support services; and that they feel cared for, understood, supported and valued. Services are primarily led by trained, mentored adolescents and young people living with HIV, known as Community Adolescent Treatment Supporters or 'CATS'. CATS provide information, counselling and support for other children, adolescents and young people living with HIV through home visits, clinic visits, support groups and mHealth monitoring. Services are fully integrated within national systems and service delivery across the HIV care cascade. Compared to adolescents on antiretroviral therapy (ART) who did not participate in the Zvandiri program, adolescents supported by CATS were 3.9 times more likely to adhere to treatment than the control group (OR=3.934). At the start of the program, participants adhered to their treatment 44.2% of the time, on average. This improved to 71.8 percent in a study in Gokwe South, a rural district of northern Zimbabwe.<sup>134</sup> In a cluster randomised controlled trial of the Zvandiri programme in two other rural districts of Zimbabwe, there was strong evidence of an intervention effect on the primary outcome of virological failure or death at endline (adjusted prevalence ratio (aPR)=0.58, 95% CI 0.36-0.94; p=0.03) among adolescents receiving Zvandiri compared with those receiving standard of care at 96 weeks.<sup>3</sup>

For adolescent and young mothers ages 10-24 who were living with HIV and utilising the evidence-based CATS programme, Africaid expanded its peer counselling programme to train and mentor young HIV-positive mothers as Young Mentor Mothers (YMM). The YMMs support their young mother peers through weekly home visits, daily SMS reminders, assistance at facilities, and young mother support groups. They support Zimbabwe's national programme by ensuring adolescent and young pregnant women are linked in to services ensuring PMTCT of HIV and syphilis, and supported with adherence, disclosure, nutrition and SRH services. A cohort of 476 YMM was established with support from Grand Challenges Canada and UNICEF to support these adolescent and young mothers living with HIV to 1) decrease the risks of mother-to-child transmission, 2) increase the testing and linkage to care of their male partners, and 3) improve the long-term health outcomes for the young mothers themselves. To date, the YMM

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<sup>3</sup> Cowan et al *AIDS Impact*. Publication in submission.

have reached a total of 1371 adolescent mothers. Within this cohort, 749 young mothers are breastfeeding, and only four babies seroconverted. This translates to a 0.6% MTCT rate, compared to the national average of 7.8%. A total of 1033 young women have a valid viral load on record, and 31 had a viral load above 1000c/ml, giving a suppression rate of 97% with the national average at 44%. The young mother receives nutritional supplements for babies over six months, information and psychosocial support. This intervention thus provides knowledge, support and skills to enhance adolescent mothers' capacity for parenting; reduces the risk of mother-to-child transmission of HIV; and improves their children's physical, cognitive and well-being.

### 3. JIELIMISHE UZAZI NA AFYA (JUA)

#### Improving Health and Social Outcomes for Pregnant Adolescents, Adolescent Mothers and their Infants in Kenya<sup>4</sup>

The AIDSFree Jielimishe Uzazi na Afya (JUA) program was an innovative home visiting model designed to improve health and social outcomes for a highly vulnerable and neglected group: pregnant adolescents, adolescent mothers, and their infants.<sup>135</sup> The JUA design offered a case management model in which home visiting teams (HVTs) provided individualized services for adolescents and their households. The HVTs focused on three goals:

- (1) ensuring that the adolescents received antenatal, postnatal, and/or HIV prevention and care services;
- (2) ensuring that babies received services for their health and development; and
- (3) building the adolescents' resilience and empowerment.

The HVTs consisted of: (1) **Mentors** who offered peer support for pregnant adolescents and adolescent mothers to help them access and remain in antenatal and postnatal health services, including prevention of mother-to-child transmission of HIV and HIV prevention services. (2) **Female and Male Household Facilitators** who worked with parents/guardians, male partners/husbands, and other members of the young woman's household to address structural barriers to care, decrease HIV- and pregnancy-related stigma and discrimination, support family conflict resolution, and mobilize support, and (3) **Supervisors** who ensured that the HVTs were performing well as teams; helped with challenging cases and navigation of referral services; and follow up to be sure that teams adhered to program-established quality standards.

The inherent design of AIDSFree JUA—working with not only the adolescent herself, but her parents, caregivers, community members, as well as engaging men—sought to address critical socio-cultural and behavioral barriers in accessing and utilizing health services.

**RESULTS:** The AIDSFree JUA program (2017–2019) improved HIV and other health and social outcomes

<sup>4</sup> Take pride in parenthood and health in kiSwahili.



JUA Clients and their Infants Adolescent mothers enrolled in the JUA Program share their experiences. The infants are wrapped in blankets given to the adolescent mothers as part of a JUA program "mama pack" that provided these mothers with essential items. The mama pack also included laundry soap, baby shawls, sanitary napkins, baby linens, a washbasin, and petroleum jelly.

#### **Focus on eMTCT**

- 100% (20/20) of adolescent mothers living with HIV on treatment during pregnancy and after delivery
- 94% of deliveries supported by skilled birth attendants (Kenyan national average 61%)
- 100% (18/18) of eligible infants received HIV prophylaxis to help them stay HIV-negative—at end of implementation zero seroconversions were observed.
- All mentored on exclusive breastfeeding

for pregnant adolescents and adolescent mothers (age 10–19) and their children (through two years old). The program supported over 380 HIV-positive and -negative adolescent girls and their children in rural and urban communities in three counties: Homa Bay, Kisumu, and Nairobi. Additional results included:

- 167 individuals to serve as HVTs.
- HVTs engaged with 960 pregnant adolescents and adolescent mothers
- 384 adolescent mothers were enrolled in the JUA program, based on eligibility determined using a *Vulnerability Screening Tool*.
- From February 2018 to March 2019, HVTs conducted 7,344 home visits with adolescents to complete individual service plans. Home visits were conducted a minimum of every two weeks during the first six months after contact, and included at least one home visit per month until the child was 24 months old / end of implementation.
- Linkages to services were provided: e.g. postnatal adolescents continued to voluntarily use family planning services, with family planning uptake among postnatal beneficiaries rising from 39% at baseline to 64% at end of project.
- The HVTs also enabled school re-entry for 69 postnatal adolescents, and helped 10 additional girls at risk of dropping out of school to be retained until completion of their primary and secondary educations.
- The program developed a checklist to categorize household support. Overall, the JUA program increased household supportiveness from 57% to 85%.

At the end of the program, adolescent clients were transitioned to services throughout their areas, including OVC and *Determined, Resilient, Empowered, AIDS-free, Mentored, and Safe women* (DREAMS) programming, services for HIV care and support, and initiatives to support payment of school fees.

**LESSONS LEARNED:** Overall, the AIDSFree JUA program demonstrated how critical it is to:

1. Consider a girls' entire environment—peers, family, school, healthcare, and community—when supporting her through her pregnancy, delivery, and successful early motherhood.
2. The core intervention team and programme intervention should include men.
3. Using 'Mama Packs' was a morale boost and motivation (as a non-monetary incentive).
4. Intensive training that included a strong focus on role-playing, listening and motivational interviewing.
5. Scale-up programme including a cash transfer component and/or similar solution to support adolescent mothers with covering child care costs to allow for adolescents to return to school or work.
6. In addition, funding to cover sanitary pads, drugs, medical tests and scans, and delivery is also recommended.

**PARTNERS:** The AIDSFree JUA program was a collaborative partnership between the AIDSFree Project, a five-year project funded by USAID, managed by JSI Research & Training Institute, Inc. (JSI) and the Elizabeth Glaser Pediatric AIDS Foundation (EGPAF), alongside Kenyan civil society partners Make Me Smile, Kagwa, Adventist Centre for Care and Support, and St. John Community Centre. AIDSFree collaborated closely with county health management teams (CHMTs) as well as the sub-county health management teams, throughout the design, implementation, and monitoring of the intervention. Partnerships with community, facility, and

school stakeholders fostered a welcoming and supportive environment for each adolescent and her child.

#### **4. SISTERHOOD FOR CHANGE, CHANGAMSHA WATOTO: COMBINING ECONOMIC EMPOWERMENT AND OTHER HIV PROGRAMS IN KISUMU KENYA**

KMET, in collaboration with the Conrad N. Hilton Foundation, is conducting important work in a country where young women aged 15-24 years are 3-5 times more likely to be HIV-positive than their male peers, and where one in every six teenage girls in Kenya is pregnant or is already a mother.

KMET runs a girls' economic empowerment program called *Sisterhood for Change (SFC)*, focusing on vocational training to impart on-demand skills in the service and business sectors in the local community. The program graduates about 100 girls every year and interlinks units on sexual reproductive health, communication skills and business management in its three main courses of tailoring and dressmaking; food and beverage; and hairdressing and beauty therapy. Besides linking the girls to potential employers through a well-planned internship program, the institution runs a microfinance scheme that is able to offer savings, financing and technical support to groups of young women who have decided to venture into business.

Young women with children in the program are encouraged to bring along their children who are admitted at the KMET Nurturing Care Centre, which is designed to improve the quality of caregiver-child interactions in order to ensure responsive stimulation, right nutrition and enhanced parenting skills. Consequently, KMET is working with the County Government of Siaya in implementing a project dubbed *Changamsha Watoto* (Stimulate the Children) which is designed to improve the quality of caregiver-child interactions in order to ensure responsive stimulation, right nutrition and enhanced parenting skills that support families in promoting the optimal development of young children; Additionally, targeting underserved adolescent and young girls (ages 10-24 years) through provision of life and vocational skills, early childhood development and socio-economic empowerment as a strategy to prevent unwanted/unplanned pregnancies, unsafe abortion and HIV/AIDS; producing and distributing reusable sanitary towels to disadvantaged girls in schools. Within identified community safe spaces, the young girls including teenage mothers are taken through sessions towards behaviour change on child care since there is minimal bonding due to stigma.

Girls waiting to find employment or set up businesses have a fall-back to earn a stipend for a period while offering services at the KMET Centre for Maternal Health Innovations where they produce re-usable sanitary towels and assemble a lifesaving kit used in hospitals to manage excessive bleeding when mothers give birth.

With such skills, adolescent girls—some of whom are single mothers—are able to improve their social skills, bolster their income, and exercise more autonomy in decision-making. This, in turn, reduces the likelihood of risky behaviors such as transactional sex and early marriage, and places them in a better position to mitigate the effects of HIV in the families they belong to.

A decade ago, KMET spearheaded training of community facilitators to lead Community Conversation groups to sustain dialogue on issues of HIV stigma, high risk behavior, nutrition, child protection, and widow inheritance, among others. The groups are active to date, although

they have metamorphosed to solve other community issues beyond HIV. To respond to the need for nutrition of families affected by HIV, KMET operates a nutrition centre that produces various brands of porridge flour to avert the interrelated health and nutrition crises brought about by HIV.

##### **5. MENTORING ADOLESCENT MOTHERS AT SCHOOL (MAMAS)**

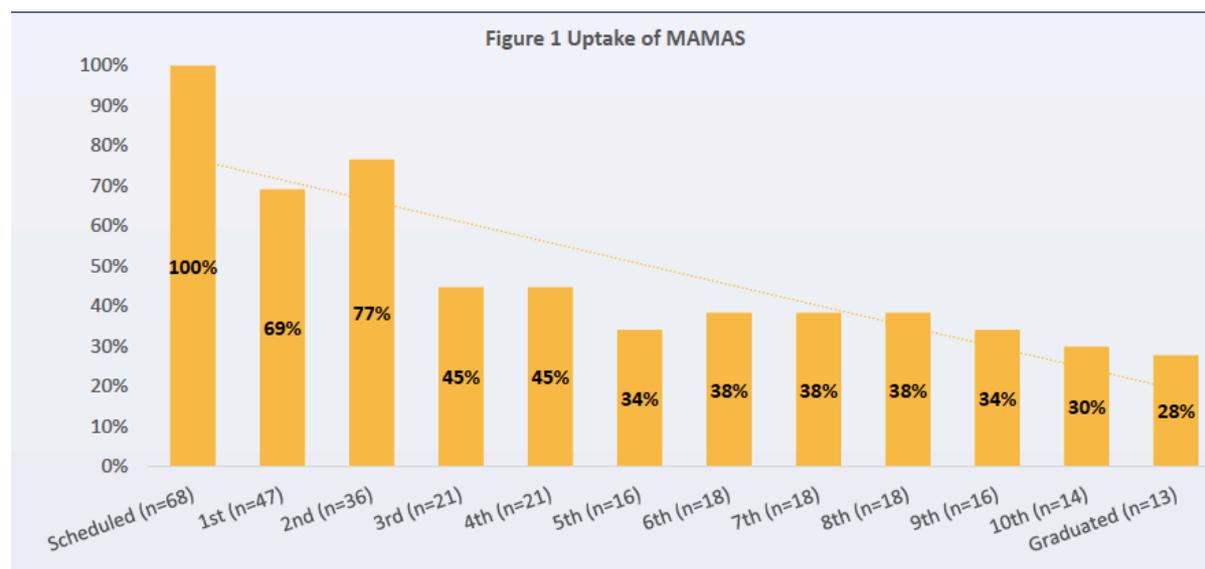
MAMAS was a peer-led participatory pilot HIV prevention intervention designed to support adolescent mothers in their ***return to and retention in school following birth***. MAMAS was designed and implemented by a joint Drexel-University-UKZN team, led by Dr Allison Groves. MAMAS was a DREAMS Innovation Challenge intervention funded by PEPFAR and managed by JSI Research & Training Institute, Inc.



**INTERVENTION DESIGN:** Mentor mothers (n=12) delivered the intervention. Young women could be mentors if they had given birth during school and had returned to and completed high school. Mentor mothers completed a two-week workshop through which they developed mentoring skills. Participatory methods were used to develop the MAMAS curriculum content. The MAMAS curriculum consisted of 10 intervention sessions, focused on human rights, gender-based violence, returning to school, and accessing the child support grant, among other topics. Sessions were delivered on Saturdays, from six weeks to six months postpartum. Adolescent mothers could join if they were: 14-19 years old, interested in returning to school, enrolled in school within the past year, not experiencing any major health issues personally or with their child, and willing and available to provide informed consent.

**UPTAKE & FEASIBILITY:** From June 2017-March 2018, the MAMAS team screened 4,079 mothers for eligibility, 120 of whom were eligible. Most of those who were ineligible were over 19 (91% of those screened). Adolescents mothers were allocated to an intervention (n=68) or comparison arm (n=52). Nearly one-fifth of the mothers were adolescents living with HIV (n=23), but all mothers lived in HIV-endemic communities. They completed a quantitative baseline survey at enrolment; a subset completed qualitative interviews postpartum to describe their experiences in MAMAS.

68 participants were offered the MAMAS intervention. Over two-thirds attended the first session (See Figure - MAMAS #1). Retention in the intervention dropped over time. Fewer than one-third of participants were retained for all 10 sessions.



The study team reported outcomes in a poster at 2<sup>nd</sup> international workshop on HIV and adolescence:

**MAMAS LESSONS LEARNED:** Active participants felt group sessions were empowering, and that they improved their well-being. Participants also saw the mentor mothers as positive role models.

- **Acceptability:** Active participants described the intervention as acceptable and recounted multiple benefits based on their participation.
- **Feasibility:** Adolescents struggled to attend intervention sessions consistently. Future interventions may be more feasible if integrated into clinical care.

## 6. MOTHERS2MOTHERS (M2M)

m2m employs and empowers women living with HIV, and as of 2018, has over 1,500 Mentor Mothers employed in Eastern and Southern Africa. These Mentor Mothers are trained to recruit and follow up maternal clients in their own areas who are living with HIV, and promote PMTCT, breastfeeding, and support for positive mental health. Recent programme data shows that across sites, m2m clients show high rates of retention in programme care. Of clients newly initiated on antiretrovirals in 2018, 94% remained in treatment after one year, compared to a regional benchmark of 75%. Furthermore, mother-to-child transmission rates in 2018 were 1.3%, signaling virtual elimination. m2m has also focused services for adolescent girls and young women in Malawi, Uganda, Zambia, and South Africa, and successfully enrolled nearly 290,000 girls and young women ages 10-24 in 2018, an 18% rise over the previous year. There is further scope for reaching the children of HIV-affected mothers through expanding ECD services.

- For the fifth year in a row, m2m achieved virtual elimination of mother-to-child transmission of HIV amongst enrolled clients, with an MTCT rate of 1.3% in 2018 (far below the 5% UNAIDS benchmark for virtual elimination, and down from 1.6% in 2017)
- m2m continues to create meaningful employment and empowerment opportunities for African women living with HIV, with over 1,500 Mentor Mothers employed in 2018.
- Positive findings from long-term care, which is essential not just to ending HIV but to successfully tackling other health challenges, were also found. 94% of m2m clients who

started antiretroviral therapy for the first time were alive and remained in treatment after a year, compared to a benchmark 75% retention rate in Eastern and Southern Africa at 12 months.

- m2m also found improvements in tailoring services for adolescents and young women; 289,500 adolescents and young adults (aged 10-24) were enrolled into direct services in 2018, an 18% rise over the previous year.

#### **7. PROJECT INSAKA—A PHONE-BASED SUPPORT GROUP INTERVENTION FOR ADOLESCENT, PREGNANT WOMEN IN ZAMBIA**

A second support group intervention presented at AIDS Impact in London in July 2019 is Project Insaka: a phone-based support groups for 15-24 year old adolescent, pregnant, HIV-positive women in Lusaka, Zambia. The data available focuses on texts exchanged as part of the support groups from 61 participants who took part in groups of 6-8 participants for a period of four months through the open-source technology, Rocket.Chat®, over peripartum and postpartum period. Groups were facilitated by a trained peer mentor. Professionals in general medicine, nutrition and obstetrics respectively were invited into the groups as guest speakers to run sessions. A large proportion of the participants were active and a lot of texts were exchanged. Six themes were identified by the study team: (1) *maternal and child health*, including references to pregnancy, general health, baby's health, and access to health services; (2) *social support*, including checking in, giving support and setting rules for the group; (3) *mental health and stigma* including references to stress, depression and loneliness as well as the different manifestations of stigma; (4) *daily life* including education, housework, talking about the future, leisure and religion; (5) *relationships* including emotions, wifely duties and marriage; and (6) *living with HIV* including fear, illness, medication, transmission and coping with status.

#### **8. REPSSI'S COMMUNITY MODEL FOR FOSTERING HEALTH AND WELLBEING FOR ADOLESCENT MOTHERS AND THEIR CHILDREN**

REPSSI's programme, conducted together with the YWCA, focuses on improving the wellbeing of marginalized married girls, as well as pregnant and parenting adolescents in Malawi. With its focus on the first 1000 days, the programme promotes ways to strengthen maternal self-care and self-awareness, and to enable them to meet the psychosocial support needs of their infants. Through health education modules, which include content around early childhood development, parenting skills, nutrition, and stimulation, young mothers learn self-efficacy and tools for problem-solving. Peer champions are also employed to make these sessions more supportive and effective.

Recent programmatic research with this cohort shows a range of challenges facing adolescent mothers, including psychosocial needs, poverty and lack of basic needs, needs related to child-rearing, and a few with additional birth-related problems. These challenges encompass needs that are specific to adolescent motherhood; these may include family rejection following pregnancy, partner abuse, life stress from balancing childcare, and lack of basic needs such as food, clothing, and soap. Some young mothers interviewed identified support networks in family, community, as well as internal skills for coping.

The project was able to bridge some of these challenges through boosting confidence in young mothers, promoting improved health and hygiene, facilitating personal change, development,

and relationship building, and providing access to other opportunities. Participating adolescents also noted impacts of the programme on their children’s physical and intellectual growth, as well as improved social skills and confidence. Finally, peer champions indicated that they had experienced positive benefits from being part of the programme.

## **9. TEEN MOTHERS SUPPORT GROUP**



*Figure 1. Member of Teen Mothers Support Group participating in a 2011 income-generating project at the BBCCOE, designing and producing mats and other household goods from recycled materials*

Teen Mothers Support Group—an intervention designed and implemented by the Botswana-Baylor Children’s Clinical Centre of Excellence—was highly acceptable and appreciated by teen moms.<sup>130</sup> The groups provided a safe, stigma-free space of peers and professional counsellors in which HIV-positive teen mothers discussed challenges including medication adherence and learned life skills specific to their situation, empowering them to be self-sufficient and provide the healthiest and best futures for themselves and their children. Feedback from a caregiver focus group was used to develop the Teen Mothers Support Group curriculum. Monthly session topics, originating from the teen mothers, included emotions, medication adherence, family

planning, SRH, baby care and financial literacy. Although available qualitative feedback from this Teen Mothers Support Group was positive, it is unclear if similar groups are being rolled out in larger scale, nor whether they were effective in improving specific health outcomes.

## REFERENCES

1. Groves AK, Maman S, Stankard PH, Gebrekristos LT, Amon JJ, Moodley D. Addressing the unique needs of adolescent mothers in the fight against HIV. *J Int AIDS Soc.* 2018;21(6):e25155. doi:10.1002/jia2.25155
2. Dellar RC, Dlamini S, Karim QA. Adolescent girls and young women: Key populations for HIV epidemic control. *J Int AIDS Soc.* 2015;18(2):64-70. doi:10.7448/IAS.18.2.19408
3. UNDP. *World Fertility Patterns 2015 - Data Booklet (ST/ESA/SER.A/370)*. New York; 2015.
4. UNAIDS JUNP on H. At a Glance - HIV among Women and Girls in Sub-Saharan Africa. 2019. [https://www.unaids.org/sites/default/files/women\\_girls\\_hiv\\_sub\\_saharan\\_africa\\_en.pdf](https://www.unaids.org/sites/default/files/women_girls_hiv_sub_saharan_africa_en.pdf)
5. UNAIDS. *2018 Global HIV Statistics*. Geneva, Switzerland [https://www.unaids.org/sites/default/files/media\\_asset/UNAIDS\\_FactSheet\\_en.pdf](https://www.unaids.org/sites/default/files/media_asset/UNAIDS_FactSheet_en.pdf). Accessed September 1, 2019.
6. Thomson KA, Hughes J, Baeten JM, et al. Increased Risk of HIV Acquisition Among Women Throughout Pregnancy and During the Postpartum Period: A Prospective Per-Coital-Act Analysis Among Women With HIV-Infected Partners. *J Infect Dis.* 2018;218(1):16. doi:10.1093/INFDIS/JIY113
7. Mofenson LM. Risk of HIV Acquisition during Pregnancy and Postpartum: A Call for Action. *J Infect Dis.* 2018;218(1):1-4. doi:10.1093/infdis/jiy118
8. Christofides NJ, Jewkes RK, Dunkle KL, Nduna M, Shai NJ, Sterk C. Early adolescent pregnancy increases risk of incident HIV infection in the eastern cape, south africa: A longitudinal study. *J Int AIDS Soc.* 2014;17:1-7. doi:10.7448/IAS.17.1.18585
9. Callahan T, Modi S, Swanson J, Ng'eno B, Broyles LN. Pregnant adolescents living with HIV: what we know, what we need to know, where we need to go. *J Int AIDS Soc.* 2017;20(1):1-4. doi:10.7448/IAS.20.1.21858
10. Christofides NJ. Adolescent pregnancy: Risk factors and consequences -- a longitudinal study in the Eastern Cape, South Africa. *Diss Abstr Int Sect B Sci Eng.* 2013;73(12-B(E)):No-Specified. [http://gateway.proquest.com/openurl?url\\_ver=Z39.88-2004&rft\\_val\\_fmt=info:ofi/fmt:kev:mtx:dissertation&res\\_dat=xri:pqm&rft\\_dat=xri:pqdis:s:3522129](http://gateway.proquest.com/openurl?url_ver=Z39.88-2004&rft_val_fmt=info:ofi/fmt:kev:mtx:dissertation&res_dat=xri:pqm&rft_dat=xri:pqdis:s:3522129).
11. Every Woman Every Child. *The Global Strategy for Women's, Children's and Adolescents' Health (2016-2030)*. 2015. doi:10.1017/CBO9781107415324.004
12. WHO. *Global accelerated action for the health of adolescents (AA-HA!): guidance to support country implementation*. 2017. doi:License: CC BY-NC-SA 3.0 IGO
13. WHO. *Global Health Estimates 2015: Deaths by Cause, Age, Sex, by Country and by Region, 2000–2015*. Geneva, Switzerland; 2016.
14. UNICEF. *Children and AIDS: Statistical Update.*; 2017.
15. Fatusi AO. *Young People's Sexual and Reproductive Health Interventions in Developing*

- Countries: Making the Investments Count. *J Adolesc Heal*. 2016. doi:10.1016/j.jadohealth.2016.06.016
16. Kassa GM, Arowojolu AO, Odukogbe AA, Yalew AW. Prevalence and determinants of adolescent pregnancy in Africa: a systematic review and Meta-analysis. *Reprod Health*. 2018. doi:10.1186/s12978-018-0640-2
  17. United Nations. World Population Prospects: 2017 Revision. 2017.
  18. Williamson N. *Motherhood in Childhood: Facing the Challenge of Adolescent Pregnancy*; 2013.
  19. Darroch J, Woog V, Bankole A AL. ADDING IT UP : Costs and Benefits of Meeting the Contraceptive Needs of Adolescents In Developing Regions. *New York Guttmacher Inst*. 2016.
  20. UNAIDS. *UNAIDS Data 2018*. Geneva, Switzerland; 2018.
  21. Hoare J. The adolescent brain: understanding how youth perceive risks and healthcare needs. In: *21st International AIDS Conference - AIDS2016*. Durban, South Africa; 2016.
  22. Sherr L, Croome N, Parra Castaneda K, Bradshaw K, Herrero Romero R. Developmental challenges in HIV infected children—An updated systematic review. *Child Youth Serv Rev*. 2014;45:74-89. doi:10.1016/j.chilyouth.2014.03.040
  23. Lowenthal ED, Lawler K, Harari N, et al. Rapid psychosocial function screening test identified treatment failure in HIV+ African youth. *AIDS Care Psychol Socio-medical Asp AIDS/HIV*. 2012;24(6):722-727.
  24. Fairlie L, Sipambo N, Fick C, Moultrie H. Focus on adolescents with HIV and AIDS. *South African Med J*. 2014;104(12):897. doi:10.7196/SAMJ.9110
  25. Cluver LD, Hodes RJ, Toska E, et al. ‘HIV is like a tsotsi. ARVs are your guns’: associations between HIV-disclosure and adherence to antiretroviral treatment among adolescents in South Africa. *AIDS*. 2015;29(April):S57-S65. doi:10.1097/QAD.0000000000000695
  26. Toska E, Cluver LD, Boyes ME, Isaacsohn M, Hodes R, Sherr L. School, Supervision and Adolescent-Sensitive Clinic Care: Combination Social Protection and Reduced Unprotected Sex Among HIV-Positive Adolescents in South Africa. *AIDS Behav*. 2016. doi:10.1007/s10461-016-1539-y
  27. Tassiopoulos K, Moscicki A-B, Mellins C, et al. Sexual risk behavior among youth with perinatal HIV infection in the United States: predictors and implications for intervention development. *Clin Infect Dis*. 2013;56(2):283-290. doi:10.1093/cid/cis816
  28. Dyer CEF, Campeau L, Toska E, Hodes R, Cluver LD. *Are Youth Living with HIV in South Africa Reaching the Sustainable Development Goals?*; 2019.
  29. Toska E, Cluver L, Orkin M, et al. Screening and supporting through schools: educational experiences and needs of adolescents living with HIV in a South African cohort. *BMC Public Health*. 2019;19(1):1-10. doi:10.1186/s12889-019-6580-0
  30. Lamb MR, Fayorsey R, Nuwagaba-Biribonwoha H, et al. High attrition before and after ART initiation among youth (15-24 years of age) enrolled in HIV care. *AIDS*. 2014.

- doi:10.1097/QAD.0000000000000054
31. Koech E, Teasdale CA, Wang C, et al. Characteristics and outcomes of HIV-infected youth and young adolescents enrolled in HIV care in Kenya. *AIDS*. 2014. doi:10.1097/QAD.0000000000000473
  32. Kariminia A, Law M, Davies MA, et al. Mortality and losses to follow-up among adolescents living with HIV in the IeDEA global cohort collaboration. *J Int AIDS Soc*. 2018. doi:10.1002/jia2.25215
  33. Sherr L, Cluver LD, Toska E, He E. Differing psychological vulnerabilities among behaviourally and perinatally HIV infected adolescents in South Africa – Implications for targeted health service provision. *AIDS Care Psychol Socio-medical Asp AIDS/HIV*. 2018;30(Supplement 2):92-101. doi:10.1080/09540121.2018.1476664
  34. Toska E, Pantelic M, Meinck F, Keck K, Haghghat R, Cluver L. Sex in the shadow of HIV: A systematic review of prevalence rates, risk factors and interventions to reduce sexual risk-taking among HIV-positive adolescents and youth in Sub-Saharan Africa. *PLoS One*. 2017;12(6):e0178106.
  35. Toska E, Zhou S, Laurenzi C, Cluver LD. Adolescent childbearing ideation, hormonal contraception, and pregnancy experiences in the era of HIV. In: *AIDS Impact*. London, United Kingdom; 2019.
  36. Ferrand RA, Corbett EL, Wood R, et al. AIDS among older children and adolescents in Southern Africa: projecting the time course and magnitude of the epidemic. *AIDS*. 2009;23(15):2039-2046. doi:10.1097/QAD.0b013e32833016ce
  37. Ronen K, McGrath CJ, Langat AC, et al. Gaps in Adolescent Engagement in Antenatal Care and Prevention of Mother-to-Child HIV Transmission Services in Kenya. *J Acquir Immune Defic Syndr*. 2016;ahead of p. doi:10.1097/QAI.0000000000001176
  38. Orne-Gliemann J, Font H, Maphosa T, et al. Patterns of Attendance at Mother Support Groups in Zimbabwe. The EPAZ Trial (2014–2016). *JAIDS J Acquir Immune Defic Syndr*. 2017;75:S216-S223. doi:10.1097/QAI.0000000000001348
  39. Machekano R, Tiam A, Kassaye S, et al. HIV incidence among pregnant and postpartum women in a high prevalence setting. *PLoS One*. 2018. doi:10.1371/journal.pone.0209782
  40. Moodley D, Esterhuizen T, Reddy L, et al. Incident HIV Infection in Pregnant and Lactating Women and Its Effect on Mother-to-Child Transmission in South Africa. *J Infect Dis*. 2011;203:1231-1234. doi:10.1093/infdis/jir017
  41. Kinuthia J, N. Kiarie J, Farquhar C, et al. Cofactors for HIV-1 Incidence during Pregnancy and Postpartum Period. *Curr HIV Res*. 2010. doi:10.2174/157016210793499213
  42. Slogrove AL, Powis KM, Cotton MF. Human Immunodeficiency Virus-exposed Uninfected Infants: Surviving and Thriving or Overlooked by Success? *Clin Infect Dis*. 2019. doi:10.1093/cid/ciy1056
  43. Horwood C, Butler LM, Haskins L, Phakathi S, Rollins N. HIV-Infected Adolescent Mothers and Their Infants: Low Coverage of HIV Services and High Risk of HIV Transmission in KwaZulu-Natal, South Africa. *PLoS One*. 2013;8(9):e74568.

- doi:10.1371/journal.pone.0074568
44. Fatti G, Shaikh N, Eley B, Jackson DJ, Grimwood A. Adolescent and young pregnant women at increased risk of mother-to-child transmission of HIV and poorer maternal and infant health outcomes: A cohort study at public facilities in South Africa. *South African Med J*. 2014;104(12):874-880.
  45. Ramraj T, Jackson D, Dinh T-H, et al. Adolescent Access to Care and Risk of Early Mother-to-Child HIV Transmission. *J Adolesc Heal*. 2017. doi:10.1016/j.jadohealth.2017.10.007
  46. Fatti G, Sheikh N, Mothibi E, Eley B. Gender Differences and the Effect of Pregnancy on Antiretroviral Treatment Outcomes amongst Adolescents in South Africa. In: *Southern African HIV Clinicians Society Conference*. Cape Town, South Africa; 2014.
  47. Adeniyi VO. The cascade of care of pregnant women on the highly active anti-retroviral therapy in Eastern Cape, South Africa\_Implications for the elimination of mother-to-child transmission of HIV. In: *XXI International AIDS Conference - AIDS2016*. Durban, South Africa; 2016.
  48. Kim MH, Ahmed S, Hosseinipour MC, et al. Implementation and operational research: the impact of option B+ on the antenatal PMTCT cascade in Lilongwe, Malawi. *J Acquir Immune Defic Syndr*. 2015;68(5):e77-83. doi:10.1097/QAI.0000000000000517
  49. Tenthani L, Haas AD, Tweya H, et al. Retention in care under universal antiretroviral therapy for HIV-infected pregnant and breastfeeding women ('Option B+') in Malawi. *AIDS*. 2014;28(4):589-598. doi:10.1097/QAD.0000000000000143
  50. Shaffer N, Abrams EJ, Becquet R. Option B+ for prevention of mother-to-child transmission of HIV in resource-constrained settings: great promise but some early caution. *AIDS*. 2014;28(4):599-601. doi:10.1097/QAD.0000000000000144
  51. Clouse K, Pettifor A, Shearer K, et al. Loss to follow-up before and after delivery among women testing HIV positive during pregnancy in Johannesburg, South Africa. *Trop Med Int Heal*. 2013;18(4):451-460. doi:10.1111/tmi.12072
  52. Nuwagaba-Biribonwoha H, Kiragga AN, Yiannoutsos CT, et al. Adolescent pregnancy at antiretroviral therapy (ART) initiation: a critical barrier to retention on ART. *J Int AIDS Soc*. 2018;21(9):e25178. doi:10.1002/jia2.25178
  53. Grønvik T, Sandøy IF. Complications associated with adolescent childbearing in Sub-Saharan Africa: A systematic literature review and meta-analysis. *PLoS One*. 2018. doi:10.1371/journal.pone.0204327
  54. González R, Rupérez M, Sevene E, et al. Effects of HIV infection on maternal and neonatal health in southern Mozambique: A prospective cohort study after a decade of antiretroviral drugs roll out. *PLoS One*. 2017;12(6):e0178134. doi:10.1371/journal.pone.0178134
  55. Obare F, Kwaak A Van Der, Birungi H. Factors associated with unintended pregnancy, poor birth outcomes and post-partum contraceptive use among HIV-positive female adolescents in Kenya. *BMC Womens Health*. 2012;12(34):1-8. doi:10.1186/1472-6874-12-34

56. Luseno WK, Iritani BJ, Maman S, et al. "If the mother does not know, there is no way she can tell the adolescent to go for drugs": Challenges in promoting health and preventing transmission among pregnant and parenting Kenyan adolescents living with HIV. *Child Youth Serv Rev*. 2019. doi:10.1016/j.chilyouth.2019.05.036
57. Norton M, Chandra-Mouli V, Lane C. Interventions for preventing unintended, rapid repeat pregnancy among adolescents: A review of the evidence and lessons from high-quality evaluations. *Glob Heal Sci Pract*. 2017. doi:10.9745/GHSP-D-17-00131
58. Birungi H, Obare F, Kwaak A Van Der, Namwebya JH. Maternal Health Care Utilization Among HIV-Positive Female Adolescents in Kenya. *Int Perspect Sex Reprod Health*. 2011;37(3):143-149. doi:10.1363/371431
59. Kozuki N, Lee AC, Silveira MF, et al. The associations of birth intervals with small-for-gestational-age, preterm, and neonatal and infant mortality: A meta-analysis. *BMC Public Health*. 2013. doi:10.1186/1471-2458-13-S3-S3
60. Conde-Agudelo A, Rosas-Bermúdez A, Kafury-Goeta AC. Birth spacing and risk of adverse perinatal outcomes: A meta-analysis. *J Am Med Assoc*. 2006. doi:10.1001/jama.295.15.1809
61. Fotso JC, Cleland J, Mberu B, Mutua M, Elungata P. Birth spacing and child mortality: An analysis of prospective data from the nairobi urban health and demographic surveillance system. *J Biosoc Sci*. 2013. doi:10.1017/S0021932012000570
62. McCracken KA, Loveless M. Teen pregnancy: An update. *Curr Opin Obstet Gynecol*. 2014. doi:10.1097/GCO.000000000000102
63. Mitsuhiro SS, Chalem E, Moraes Barros MC, Guinsburg R, Laranjeira R. Brief report: Prevalence of psychiatric disorders in pregnant teenagers. *J Adolesc*. 2009. doi:10.1016/j.adolescence.2008.12.001
64. LePlatte D, Rosenblum KL, Stanton E, Miller N, Muzik M. Mental health in primary care for adolescent parents. *Ment Health Fam Med*. 2012.
65. Hodgkinson S, Beers L, Southammakosane C, Lewin A. Addressing the mental health needs of pregnant and parenting adolescents. *Pediatrics*. 2014. doi:10.1542/peds.2013-0927
66. Xavier C, Benoit A, Brown HK. Teenage pregnancy and mental health beyond the postpartum period: A systematic review. *J Epidemiol Community Health*. 2018. doi:10.1136/jech-2017-209923
67. Amzel A, Toska E, Lovich R, et al. Promoting a combination approach to paediatric HIV psychosocial support. *AIDS*. 2013;27 Suppl 2:S147-57. doi:10.1097/QAD.0000000000000098
68. Pantelic M, Boyes M, Cluver L, Meinck F. HIV, violence, blame and shame: Pathways of risk to internalized HIV stigma among South African adolescents living with HIV: Pathways. *J Int AIDS Soc*. 2017;20(1):1-9. doi:10.7448/IAS.20.1.21771
69. Seamark CJ, Lings P. Positive experiences of teenage motherhood: A qualitative study. *Br J Gen Pract*. 2004.

70. Seibold C. Young single women's experiences of pregnancy, adjustment, decision-making and ongoing identity construction. *Midwifery*. 2004. doi:10.1016/S0266-6138(03)00057-3
71. Spear HJ, Lock S. Qualitative research on adolescent pregnancy: A descriptive review and analysis. *J Pediatr Nurs*. 2003. doi:10.1016/S0882-5963(03)00160-X
72. The challenge of HIV associated neurocognitive disorder. *Lancet Infect Dis*. 2013. doi:10.1016/S1473-3099(13)70306-2
73. Smith R, Chernoff M, Williams PL, et al. Impact of Human Immunodeficiency Virus Severity on Cognitive and Adaptive Functioning during Childhood and Adolescence. *Pediatr Infect Dis J*. 2013;31(6):1-11. doi:10.1097/INF.0b013e318253844b
74. Kerr SJ, Puthanakit T, Vibol U, et al. Neurodevelopmental outcomes in HIV-exposed-uninfected children versus those not exposed to HIV. *AIDS Care - Psychol Socio-Medical Asp AIDS/HIV*. 2014. doi:10.1080/09540121.2014.920949
75. UNESCO. *Early and Unintended Pregnancy & the Education Sector (ED/IPS/HAE/2517/01 REV)*. Paris; 2017. <http://unesdoc.unesco.org/images/0025/002515/251509E.pdf>.
76. Human Rights Watch. Leave No Girl Behind: Discrimination in Education against Pregnant Girls and Adolescent Mothers. <https://www.hrw.org/report/2018/06/14/leave-no-girl-behind-africa/discrimination-education-against-pregnant-girls-and>. Published 2016. Accessed August 16, 2019.
77. Onyeka IN, Miettola J, Ilika AL, Vaskilampi T. Unintended pregnancy and termination of studies among students in Anambra state, Nigeria: are secondary schools playing their part? *Afr J Reprod Health*. 2011;15(2):109-115. <http://www.ncbi.nlm.nih.gov/pubmed/22590897>. Accessed September 1, 2019.
78. Stoner MCD, Rucinski KB, Edwards JK, et al. The Relationship Between School Dropout and Pregnancy Among Adolescent Girls and Young Women in South Africa: A HPTN 068 Analysis. *Heal Educ Behav*. 2019;46(4):559-568. doi:10.1177/1090198119831755
79. Lall M. Exclusion from school: Teenage pregnancy and the denial of education. *Sex Educ*. 2007. doi:10.1080/14681810701448028
80. Pillow W. Teen pregnancy and education: Politics of knowledge, research, and practice. *Educ Policy*. 2006. doi:10.1177/0895904805285289
81. Wilfred B. Assessing Factors Influencing Early Sexual Initiation among Adolescents (13 to 19 Years) in Ghana: A Qualitative Study. *Int J Caring Sci*. 2018.
82. Kaphagawani NC, Kalipeni E. Sociocultural factors contributing to teenage pregnancy in Zomba district, Malawi. *Glob Public Health*. 2017. doi:10.1080/17441692.2016.1229354
83. Mchunu G, Peltzer K, Tutshana B, Seutlwadi L. Adolescent pregnancy and associated factors in South African youth. *Afr Health Sci*. 2012;12:426-434. <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=3598281&tool=pmcentrez&rendertype=abstract>.
84. kidan Ayele BG, Gebregzabher TG, Hailu TT, Assefa BA. Determinants of teenage pregnancy in degua tembien district, Tigray, Northern Ethiopia: A community-based case-

- control study. *PLoS One*. 2018. doi:10.1371/journal.pone.0200898
85. Odimegwu C, Mkwanzani S. Factors associated with teen pregnancy in sub-Saharan Africa: A multi-country cross-sectional study. *Afr J Reprod Health*. 2016.
  86. Geronimus AT, Korenman S. The socioeconomic consequences of teen childbearing reconsidered. *Q J Econ*. 1992;107(4):1187-1214. doi:10.2307/2118385
  87. Macleod CI. Economic Security and the Social Science Literature on Teenage Pregnancy in South Africa. *Gend Soc*. 2002;16(5):647-664. doi:10.1177/089124302236990
  88. Cunningham PW, Boulton BE. Black teenage pregnancy in South Africa : some considerations.1996:2-4.
  89. Harden A, Brunton G, Fletcher A, Oakley A. Teenage pregnancy and social disadvantage: systematic review integrating controlled trials and qualitative studies. *BMJ*. 2009;(339):b4254. doi:10.1136/bmj.b4254
  90. Kotchick BA, Forehand R. Putting parenting in perspective: A discussion of the contextual factors that shape parenting practices. *J Child Fam Stud*. 2002. doi:10.1023/A:1016863921662
  91. Bray R, Gooskens I, Kahn L, Moses S, Seekings J. *Growing up in the New South Africa Childhood and Adolescence in Post-Apartheid Cape Town.*; 2010. <http://www.hsrcpress.ac.za>.
  92. Wodon Q, Male C, Nayihouba A, et al. *Economic Impacts of Child Marriage: Global Synthesis Report*. Washington D.C.; 2017.
  93. Mombo-Ngoma G, Mackanga JR, González R, et al. Young adolescent girls are at high risk for adverse pregnancy outcomes in sub-Saharan Africa: An observational multicountry study. *BMJ Open*. 2016. doi:10.1136/bmjopen-2016-011783
  94. Toska E, Cluver LD, Boyes ME, Pantelic M, Kuo C. From “sugar daddies” to “sugar babies”: Quantitatively testing the pathway between inequitable sexual relationships, condom use, and adolescent pregnancy in South Africa. *Sex Health*. 2015;12(59-66):59-66.
  95. Closson K, Dietrich JJ, Beksinska ME, et al. Higher prevalence of intimate partner violence among young South African women who report teenage pregnancy. In: *AIDS Impact*. London, United Kingdom; 2019.
  96. Omoro T, Gray SC, Otieno G, et al. Teen pregnancy in rural western Kenya: a public health issue. *Int J Adolesc Youth*. 2018. doi:10.1080/02673843.2017.1402794
  97. Gunawardena N, Fantaye AW, Yaya S. Predictors of pregnancy among young people in sub-Saharan Africa: A systematic review and narrative synthesis. *BMJ Glob Heal*. 2019. doi:10.1136/bmjgh-2019-001499
  98. Carbone NB, Njala J, Jackson DJ, et al. “i would love if there was a young woman to encourage us, to ease our anxiety which we would have if we were alone”: Adapting the Mothers2Mothers Mentor Mother Model for adolescent mothers living with HIV in Malawi. *PLoS One*. 2019. doi:10.1371/journal.pone.0217693
  99. Govender D, Naidoo S, Taylor M. Prevalence and risk factors of repeat pregnancy among

- South African adolescent females. *Afr J Reprod Health*. 2019;23(1):73-87. doi:10.29063/ajrh2019/v23i1.8
100. Jama NA, Wilford A, Haskins L, Coutsooudis A, Spies L, Horwood C. Autonomy and infant feeding decision-making among teenage mothers in a rural and urban setting in KwaZulu-Natal, South Africa. *BMC Pregnancy Childbirth*. 2018. doi:10.1186/s12884-018-1675-7
  101. Le Roux K, Christodoulou J, Stansert-Katzen L, et al. A longitudinal cohort study of rural adolescent vs adult South African mothers and their children from birth to 24 months. *BMC Pregnancy Childbirth*. 2019. doi:10.1186/s12884-018-2164-8
  102. Petroni S, Yates R, Siddiqi M, et al. Understanding the Relationships Between HIV and Child Marriage: Conclusions From an Expert Consultation. *J Adolesc Heal*. 2019;64(6):694-696. doi:10.1016/j.jadohealth.2019.02.001
  103. UNFPA. *Harmonizing the Legal Environment for Adolescent Sexual and Reproductive Health and Rights: A Review of 23 Countries in East and Southern Africa*. Pretoria, South Africa; 2017. [https://esaro.unfpa.org/sites/default/files/pub-pdf/2017-08-Laws and Policies-Digital\\_0.pdf](https://esaro.unfpa.org/sites/default/files/pub-pdf/2017-08-Laws and Policies-Digital_0.pdf).
  104. *Education Amendment Bill 2018*. Harare, Zimbabwe: Ministry of Primary and Secondary Education; 2018:1-7.
  105. Bjerregaard A. *FORCED OUT: Mandatory Pregnancy Testing and the Expulsion of Pregnant Students in Tanzanian Schools*. Nairobi, Kenya; 2013.
  106. Farida M, Bali T. Exploring Experiences of Pregnant and Mothering Secondary School Students in Tanzania. *Res Humanit Soc Sci*. 2014.
  107. Wood K, Jewkes RK. Blood Blockages and Scolding Nurses: Barriers to Adolescent Contraceptive Use in South Africa. *Reprod Health Matters*. 2006;14(27):109-118.
  108. Eba PM, Lim H. Reviewing independent access to HIV testing, counselling and treatment for adolescents in HIV-specific laws in sub-Saharan Africa: Implications for the HIV response: Implications. *J Int AIDS Soc*. 2017;20(1):1-10. doi:10.7448/IAS.20.1.21456
  109. Ministry of Health, Community Development, Gender, Elderly and Children (MoHCDGEC) [Tanzania Mainland], Ministry of Health (MoH) [Zanzibar], National Bureau of Statistics (NBS), Office of the Chief Government Statistician (OCGS) and I. *Tanzania Demographic and Health Survey and Malaria Indicator Survey (TDHS-MIS) 2015-2016*. Dar es Salaam, Tanzania, and Rockville, Maryland, USA; 2016. <https://dhsprogram.com/pubs/pdf/FR321/FR321.pdf>.
  110. Neal S, Matthews Z, Frost M, Fogstad H, Camacho A V., Laski L. Childbearing in adolescents aged 12-15 years in low resource countries: A neglected issue. New estimates from demographic and household surveys in 42 countries. *Acta Obstet Gynecol Scand*. 2012. doi:10.1111/j.1600-0412.2012.01467.x
  111. UNAIDS. *HIV Prevention among Adolescent Girls and Young Women*. Geneva, Switzerland; 2016. [http://www.unaids.org/sites/default/files/media\\_asset/UNAIDS\\_HIV\\_prevention\\_among\\_adolescent\\_girls\\_and\\_young\\_women.pdf](http://www.unaids.org/sites/default/files/media_asset/UNAIDS_HIV_prevention_among_adolescent_girls_and_young_women.pdf).

112. Kinghorn A, Shanaube K, Toska E, Cluver L, Bekker L-G. Defining adolescence: priorities from a global health perspective. *Lancet Child Adolesc Heal*. 2018;2(5):e10.
113. Paediatric Adolescent Treatment Africa (PATA). ASK-BOOST-CONNECT-DISCUSS (ABCD).
114. Josephine AM. "Motherhood Is Hard": Exploring the Complexities of Unplanned Motherhood Among HIV-Positive Adolescents in South Africa. *SAGE Open*. 2019;9(2):1-11. doi:10.1177/2158244019848802
115. Mupambireyi Z, Bernays S, Bwakura-Dangarembizi M, Cowan FM. "I don't feel shy because I will be among others who are just like me...": The role of support groups for children perinatally infected with HIV in Zimbabwe. *Child Youth Serv Rev*. 2014;45:106-113. doi:10.1016/j.chilyouth.2014.03.026
116. Mackworth-Young CRS, Bond V, Wringe A, et al. "My mother told me that I should not": a qualitative study exploring the restrictions placed on adolescent girls living with HIV in Zambia. *J Int AIDS Soc*. 2017;20(4):e25035.
117. Cluver L, Pantelic M, Toska E, et al. STACKing the odds for adolescent survival: health service factors associated with full retention in care and adherence amongst adolescents living with HIV in South Africa. *J Int AIDS Soc*. 2018;21(9):e25176. doi:10.1002/jia2.25176
118. UNAIDS. *Ending the AIDS Epidemic for Adolescents, with Adolescents.*; 2016.
119. Panday S, Makiwane M, Ranchod C, Letsoalo T. *Teenage Pregnancy in South Africa: With a Specific Focus on School-Going Learners*.
120. REPSSI. Teen Pregnancy and SRHR in Africa-Youth Webinar: Peer learning session by youth and for youth. Presented at the: 2019.
121. Lila H. Prevention of mother to child transmission of HIV in Tanzania: the case of pregnant adolescents in Morogoro region. In: *International AIDS Society - IAS2017.* ; 2017.
122. Bamishigbin ON, Dunkel Schetter C, Stanton AL. The antecedents and consequences of adolescent fatherhood: A systematic review. *Soc Sci Med*. 2019. doi:10.1016/j.socscimed.2019.04.031
123. Hodes R, Gittings L. 'Kasi curriculum': what young men learn and teach about sex in a South African township. *Sex Educ*. 2019:1-19.
124. Odimegwu CO, Amoo EO, De Wet N. Teenage pregnancy in South Africa: Where are the young men involved? *SAJCH South African J Child Heal*. 2018. doi:10.7196/SAJCH.2018.v12i2.1523
125. Amoo EO, Igbinoba A, Imhonopi D, et al. Trends, Determinants and Health Risks of Adolescent Fatherhood in Sub-Saharan Africa. *Ethiop J Health Sci*. 2018;28(4):433-442. doi:10.4314/ejhs.v28i4.9
126. Mvune N, Bhana D, Mayeza E. Umhlalaphansi and inkwari: teenage men's accounts on becoming fathers. *Cult Heal Sex*. 2019. doi:10.1080/13691058.2018.1459843
127. Swartz S, Bhana A. *Teenage Tata: Voices of Young Fathers in South Africa.*; 2009. www.hsrcpress.ac.za.

128. Rosenberg NE, van Lettow M, Tweya H, et al. Improving PMTCT uptake and retention services through novel approaches in peer-based family-supported care in the clinic and community: a 3-arm cluster randomized trial (PURE Malawi). *JAIDS*. 2014;67(S2):S114-9. doi:10.1097/QAI.0000000000000319
129. Mwapasa V, Pro G, Chinkhumba J, et al. Mother-infant pair clinic and SMS messaging as innovative strategies for improving access to and retention in eMTCT care and Option B+ in Malawi: a cluster randomized control trial (the PRIME study). *JAIDS*. 2014;67(S2):S120-4. doi:10.1097/QAI.0000000000000327
130. Kossow E, Drüphake V, Tolle L, et al. Teen Mothers Support Group: improving the clinical and psychosocial well being of HIV-positive teenage mothers at the Botswana-Baylor Children's Clinical Centre of Excellence. In: *19th International AIDS Conference*. Washington; 2012.
131. Myer L, Iyun V, Zerbe A, et al. Differentiated models of care for postpartum women on antiretroviral therapy in Cape Town, South Africa: A cohort study. *J Int AIDS Soc*. 2017;20(Suppl 4):32-40. doi:10.7448/IAS.20.5.21636
132. Cluver LD, Orkin FM, Campeau L, Toska E, Webb D, Carlqvist A. Improving lives by accelerating progress towards the UN Sustainable Development Goals for adolescents living with HIV: a prospective cohort study. *Lancet Child Adolesc Heal*. 2019;3(4):245-254. doi:http://dx.doi.org/10.1016/S2352-4642%2819%2930033-1
133. Rahman A, Malik A, Sikander S, Roberts C, Creed F. Cognitive behaviour therapy-based intervention by community health workers for mothers with depression and their infants in rural Pakistan: a cluster-randomised controlled trial. *Lancet*. 2008. doi:10.1016/S0140-6736(08)61400-2
134. Willis N, Milanzi A, Mawodzeke M, et al. Effectiveness of community adolescent treatment supporters (CATS) interventions in improving linkage and retention in care, adherence to ART and psychosocial well-being: a randomised trial among adolescents living with HIV in rural Zimbabwe. *BMC Public Health*. 2019;19(1):117. doi:10.1186/s12889-019-6447-4
135. Levy M, Pearson J, Akuno J, Odoung S, Alexandra Coombs AY. *Improving Health and Social Outcomes for Pregnant Adolescents, Adolescent Mothers & Their Infants in Kenya—JUA Program Final Report*. Arlington, VA; 2019. <https://dhsprogram.com/pubs/pdf/FR321/FR321.pdf>.