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## Beyond early infant diagnosis: case finding strategies for identification of HIV-infected infants and children

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### Abstract

There are 3.4 million children infected with HIV worldwide, with up to 2.6 million eligible for treatment under current guidelines. However, roughly 70% of infected children are not receiving live-saving HIV care and treatment. Strengthening case finding through improved diagnosis strategies, and actively linking identified HIV-infected children to care and treatment is essential to ensuring that these children benefit from the care and treatment available to them. Without attention or advocacy, the majority of these children will remain undiagnosed and die from complications of HIV. In this article, we summarize the challenges of identifying HIV-infected infants and children, review currently available evidence and guidance, describe promising new strategies for case finding, and make recommendations for future research and interventions to improve identification of HIV-infected infants and children.

### Keywords

case finding; HIV testing; pediatric HIV; PITC

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#### Conflicts of interest

There are no conflicts of interest.

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## Introduction

Over the past 25 years, tremendous progress has been made in the care and treatment of HIV-infected infants and children. Prior to the availability of antiretroviral therapy (ART), the majority of HIV-infected children suffered from rapidly progressive multisystem disease and early death, with 50% mortality before the age of 2 [1]. As availability of cotrimoxazole prophylaxis and ART increased, outcomes for children dramatically improved in both developed and resource-limited countries [2–4]. Evidence that early initiation of ART could decrease mortality in HIV-infected infants by up to 75% [5] led to the 2010 WHO pediatric treatment guidelines expanding treatment eligibility for all HIV-infected infants less than 2 years regardless of immunologic or clinical staging [6]. Simplified ART initiation criteria and child-friendly pediatric formulations facilitated decentralization of pediatric care and treatment, resulting in an over five-fold increase in the number of children on ART since 2006 when less than 100 000 children were accessing treatment (See Treatment 2.0 paper in this series) [7].

Despite these successes, considerable challenges remain. In 2011, an estimated 230 000 deaths in children under the age of 5 were attributable to HIV [8]. Most of these deaths could have been averted, had these children been identified, diagnosed, and initiated on treatment. Many of these children were born to women who did not access, or incompletely accessed prevention of mother to child transmission (PMTCT) programs. These children are at higher risk of infection, and there are currently limited opportunities for diagnosis or entry into care. Consequently, these children do not present, if they present at all, until they have developed serious, AIDS-defining illnesses. When they finally are diagnosed and initiated on ART, mortality and complication rates remain high [9–11].

There are still 3.4 million children infected with HIV, with up to 2.6 million eligible for treatment as the new 2013 WHO treatment guidelines now calls for universal treatment of all children less than 5 years of age [12]. By the end of 2012, in the 21 countries with the highest burden of HIV, only three of 10 or 630 000 eligible children, had been identified and enrolled in HIV treatment. This highlights the fact that 70% of infected children are not receiving live-saving HIV care and treatment. The Global Plan towards Elimination of New HIV infections Among Children and Keeping Their Mothers Alive proposes 100% treatment coverage for eligible HIV-infected children by 2015 [13]. Strengthening case finding through improved diagnosis strategies, and actively linking identified HIV-infected children to care and treatment is essential to ensuring that these 2.6 million children benefit from care and treatment. Without attention or advocacy, the majority of these children will remain undiagnosed and die from complications of HIV.

In this article, we summarize the challenges of identifying HIV-infected infants and children programs, review currently available evidence and guidance, describe promising new strategies for case finding, and make recommendations for future research and interventions to improve identification of HIV-infected infants and children.

## Challenges with case finding of HIV-infected infants and children

Case finding of HIV-infected infants and children is challenging on several levels: caregiver/patient-level challenges; provider/facility-level challenges; and policy-level challenges.

### Caregiver/patient-level challenges

Although infants born to a known HIV-infected mother should be screened at 4–6 weeks during the first postnatal visit, less than 20% of HIV-exposed infants in resource-limited settings receive an HIV test [14], and there are high rates of loss to follow-up (LTFU) along the PMTCT cascade (see Linkage and Retention paper in this supplement) [15,16]. In the South African prevention of mother-to-child transmission evaluation (SAPMTCTE) study, only 35% of HIV-infected mothers intended to access early infant diagnosis (EID) services [17]. In Malawi's Option B+ program, of 8700 HIV-exposed infants discharged from maternity, less than half (43%) were enrolled in follow-up before age 2 months [18]. Millions of HIV-exposed and at-risk children have been lost to care as a result of these missed opportunities.

Once children have been lost from the PMTCT/EID system, there are very few opportunities for testing or reentry into care. Although HIV disease in infancy is generally rapidly progressing, up to one third of infected infants have a more slowly progressing disease with survival into their teens without treatment [19–21]. In most settings, such children rely on caregivers to both consent and bring them for testing [22]. Caregivers may not understand or see the need to have their seemingly healthy children tested, or they may desire to 'protect the child' from a stigmatizing diagnosis [23]. A mother may also be hesitant to bring her children for testing because doing so is tantamount to disclosing her own status. She may fear blame or feel guilt over the possibility of having transmitted the virus to her child [24–26].

Testing rates are poor even for older children and adolescents who could theoretically consent and pursue HIV testing on their own. A survey conducted in sub-Saharan Africa showed that only 15% of women and 10% of men aged 15–24 years had ever tested for HIV and knew their status [27]. Documented barriers to testing include distance from testing facilities, long wait times, test kit shortages, fear of stigma, and opposition from partners and family [24,28–30]. As a result of these caregiver and client barriers, many children and youth are not tested until clinically ill, compromising treatment outcomes.

### Provider/facility-level challenges

Even if HIV-exposed or ill children are brought to a healthcare facility, additional challenges are encountered at the provider and facility level. Healthcare workers may be disincentivized to offer HIV testing and counseling (HTC) to children due to concerns about privacy and disclosure related to maternal HIV status [31], concerns of increased workload related to performing pretest and posttest counseling [32], or a lack of understanding or training in pediatric counseling and handling pediatric blood specimens [33]. Further, unless provider-initiated counseling and testing (PITC) has been routinely implemented or

providers have been sensitized to identifying signs and symptoms of HIV, they may treat children for opportunistic infections on multiple occasions without ever conducting an HIV test [34,35]. Finally, limited numbers of test kits and policies that do not allow rapid tests to be administered by certain cadres of staff may also contribute to reluctance of healthcare workers to test children without overt signs or symptoms of HIV disease [32,36].

### **Policy-level challenges**

Age of consent varies from country to country, and while it is considered best to involve older children in the assent of testing, a legal guardian is usually required to provide formal consent [37]. Most countries set the age of consent at 16, though South Africa and Lesotho allow children 12 years and older to test without parental consent, whereas Burundi and some other countries set the age of consent for medical procedures (including HIV testing) at 21 years [38]. If consent is not available, due to caregiver reluctance or unavailability, or not allowed by the child or adolescent, healthcare workers cannot proceed with testing. Significantly, there are very few published international or national policies, guidelines, or tools addressing pediatric HIV case finding. Without unified policies or guidelines, case finding remains uncoordinated and ineffective.

### **Guidance on pediatric HIV case finding is limited**

Published research, evidence from programs, and guidance around pediatric testing and case finding are limited. The guidance that is available focuses on technical aspects of virologic and antibody-based testing, rather than comprehensive and differentiated strategies to identify undiagnosed children. National HTC guidelines often have limited pediatric content, focusing most on voluntary counseling and testing (VCT) and provider initiated testing and counseling (PITC) and opt-out testing for adults. Though research on pediatric tuberculosis (TB) case finding (including the role of various long-standing and novel diagnostics) is readily available, few studies have specifically looked at multi-faceted strategies for improving case finding of HIV-exposed and HIV-infected children. However, one paper outlines a simple, two-tiered approach to identify children at specific healthcare entry points (Table 1) [14].

WHO guidance documents offer specific, algorithmic approaches to diagnosing individual children and adolescents, but provide limited guidance on developing or implementing community or population-based case finding strategies for children missed by current testing efforts (Table 2). As case finding and diagnostic strategies are different for children than adults, existing guidelines have limited utility for pediatric providers and programmers.

### **Promising strategies for pediatric case finding**

#### **Provider-initiated testing and counseling**

PITC refers to the routine offering of HIV testing in which the provider offers testing generally in the context of a health visit. Most PITC programs utilize an opt-out approach, in which all patients are tested unless they decline. The high yield of newly diagnosed infants and children resulting from PITC on inpatient pediatric wards has been well described [35,39,40]. At the main teaching hospital in Lusaka, Zambia, 999 of 3964 (25%) of HIV

tests done in children older than 18 months were positive [39]. In Lilongwe, Malawi, PITC in an inpatient pediatric ward led to the identification of 525 of 5465 (8.5%) HIV-infected and 405 of 5465 (6.5%) HIV-exposed children [40]. Based on this evidence, in high prevalence settings, all children admitted to pediatric wards or malnutrition units should be tested for HIV [41]. However, despite the efficiency of PITC in finding previously undiagnosed children, mortality rates remain high among children diagnosed as inpatients and after discharge, likely reflecting late diagnosis [42].

Even in facilities in which PITC is offered, high patient volumes, staffing limitations, shortage of appropriate counseling space, and test kit stockouts have compromised effectiveness [32,34,43,44]. In addition, with current healthcare worker capacity, PITC may be difficult to implement in many settings without overwhelming fragile care delivery systems. In many settings, only one or two nurses are available in high burden primary health clinics and adding PITC responsibilities would be burdensome and unmanageable. Task shifting counseling and testing to lower cadres of health workers staff such as community health workers, discussed below, may be effective in easing that burden.

### **Integrated management of childhood illness screening**

PITC is likely the optimal approach to identifying HIV-infected children in healthcare settings. However, when PITC is not the norm, healthcare workers must be prompted to suggest testing for children. The Integrated Management of Childhood Illness (IMCI) guidelines now provide an algorithm to assess children's HIV risk, prompting healthcare workers to test children when they present with 'signs and symptoms suggestive of HIV' (Fig. 1). However, actual implementation of this algorithm is sporadic. A South African study observing healthcare workers who had been specifically trained on the screening algorithms failed to classify 40% of children with significant risk [45]. Even when the classification system is used correctly and captures children with HIV signs or symptoms, by definition these children are symptomatic and likely have later stage disease and, therefore, worse outcomes [46].

### **Presumptive diagnosis of HIV in infants**

Because access to virologic testing and timely return of results is still limited or problematic in many settings, alternative diagnostic algorithms are necessary to identify infected infants and children. Studies evaluating the currently available WHO clinical criteria to make a presumptive diagnosis of HIV infection in the absence of virologic testing (Fig. 2) have suggested that although the approach may have limited sensitivity (ranging from 19 to 23%), specificity is reasonably high (ranging from 88 to 94%) [47–49]. Though presumptive diagnosis using this algorithm may miss quite a few HIV-infected children and would be inadequate as a general screening tool, in the absence of virologic testing, it does provide clinicians with reassurance when initiating ART in HIV-exposed infants. At the least, presumptive diagnosis strategies should be individualized and discussed with caregivers, because although the risk of ART-associated toxicity is low, it is not insignificant. Sensitivity of this approach may be improved to 70–80% by combining antibody testing with clinical criteria and CD4<sup>+</sup> cell measurements [48,50]. However, in settings in which virologic testing is absent, CD4<sup>+</sup> cell measurement is often also unavailable.

### **HIV screening at immunization clinics**

Routine HIV screening for all infants attending immunization or under-5 clinics is a promising strategy for identification of HIV-exposed and HIV-infected infants in high-burden areas with insufficient PMTCT, or for those children whose mothers seroconverted late in pregnancy or during breastfeeding. In a pilot anonymous surveillance program at immunization clinics in Kwazulu Natal, 188 of 2489 (7.5%) of infants screened by DNA PCR were HIV-infected [51]. In a follow-up study in which results were communicated to patients, 54 of 584 (9.2%) of infants had positive DNA PCRs, but only 332 of 584 (56.8%) returned to receive their results [52]. At two clinics in Malawi, 1757 infants were screened to identify 101 exposed children eligible for PCR; five of 70 (7.1%) tested at immunization clinic and nine of 28 (32.1%) tested at under-5 clinic were HIV-infected [53]. In a population-based seroprevalence survey of infants presenting for their first immunization visit in Malawi, HIV prevalence among children was 1.2% [54]. The effectiveness and additional yield depends on how many mothers and infants were missed by PMTCT. As the integration and strengthening of PMTCT and EID programs improve, the efficacy of this type of screening will likely decrease [55,56]. Also, with immunization clinic screening, identification takes place after opportunities for effective prevention interventions have already passed, so from a prevention-focused perspective, it remains unsatisfactory (See PMTCT paper in this series). Finally, with extended breastfeeding, immunization clinic screening is less effective in capturing children during their entire exposure period, that is, until weaning from breastfeeding occurs. Ultimately, the utility of immunization clinic screening for case finding may be effective to evaluate HIV-free survival, and thus the effectiveness of current PMTCT programming, as was recently done in Malawi [54].

### **School-based testing campaigns**

Primary school-based HIV testing campaigns with development of school-based ART clinics have proven effective in some settings. Mass HIV testing campaigns conducted in Kenya, Tanzania, and Malawi are acceptable and effective for identifying HIV-infected older children [57,58]. In Kenya, 47 173 people were tested for HIV and received their results, with identification of 1964 (4%) positive cases [59]. School-based national testing campaigns for children may have similar impact given that after immunization clinics, schools are the only other venue where large numbers of children congregate [60,61]. Recent studies suggest a considerable proportion of unidentified, untreated HIV-infected children may survive beyond 10 years of age [19–21], and school-based testing may be effective in identifying children and adolescents infected through horizontal transmission as well [26]. Further, such campaigns may provide opportunities for HIV education and can help reduce HIV-related stigma and discrimination as has been found with home-based VCT campaigns [62,63]. A criticism of mass testing campaigns is the lack of focus on linkage to care of those newly diagnosed [64], but establishment of school-based HIV/ART clinics could facilitate such linkage, improve retention in care, and reduce absenteeism from school [65].

### **Community-based case finding**

Innovative community-based models for HTC are feasible, reduce disparities in access to testing services, and are cost-effective for increasing HIV testing among previously unreached populations [66–69]. Home-based HIV testing, compared with VCT and PITC can identify symptomatic and asymptomatic patients earlier in their disease [70]. While the majority of these programs have focused on adults [63,68,70–75], pilot projects focusing on children are demonstrating similar efficacy. The Tingathe Program in Malawi utilizes community health workers to conduct community-based HIV testing and case finding resulting in more than 2500 HIV-exposed and HIV-infected children enrolled in care from 2008 to 2011. A 10-fold increase in enrollment of HIV-infected children into care from 3.2/month preintervention to 32.7/month postintervention was observed [55,76,77]. In Tanzania, a community-based testing campaign focused on children called Know Your Child's Status conducted 2994 tests in children with 108 new cases identified (3.6%) [78]. In Cote d'Ivoire, the use of community counselors led to an increase in exposed infants receiving prophylaxis rise from 30 to 100% within 5 months of implementation [79]. There are several limitations to this approach as well. Community-based case finding generally has a lower yield than health facility-based testing [80], activities are often difficult to supervise, quality assurance of testing can be challenging in the field, and linkage to care after community-based diagnosis is often suboptimal [77].

### **Family testing and counseling**

Testing the children of index adult cases is a particularly powerful intervention. A survey conducted in Malawi reported greater than 80% of children of adult patients on ART had not been tested for HIV [81]. Targeted family testing of all family members of known HIV-infected adults can provide early case finding for HIV-exposed and HIV-infected children [81]. This may be extended to include family testing for adults presenting with TB or sexually transmitted infections in settings in which coinfection rates are high. Given that these children are at high risk of HIV exposure, ensuring that children of HIV-infected adults are tested may be a targeted, cost-effective strategy.

Further, several studies have demonstrated that couples counseling, in which spouses and partners are simultaneously tested with immediate disclosure of results facilitates disclosure, enhances communication about HIV within couples, and reduces high-risk behavior [82–84]. Family-based HIV testing may have similar impact. Several studies have demonstrated that children play a vital role within households for coping with the impact of HIV-AIDS. Campaigns utilizing family counseling may yield increased case finding of pediatric HIV infection while facilitating disclosure and communication within the family [85–87].

### **Social network and orphan and vulnerable children HIV testing and counseling**

Variations on social network testing, in which HIV-infected persons identify others in their peer group for prevention interventions may be an innovative approach to identifying at-risk children. In one US study, this method resulted in HIV-positivity rates of 5.6 compared with 1% prevalence from traditional outreach strategies [88]. Such targeted outreach or clinic-based testing can be used for children at higher risk such as orphaned, homeless, and other vulnerable children and their peers.

## Task shifting

Task shifting, which delegates tasks to the least costly healthcare worker, is especially suited to settings with limited human resource capacity [89–92]. Several pilot programs have demonstrated the efficacy of using community health workers and lay counselors for HIV testing in inpatient and community settings resulting in significant increases in identification of HIV-infected children [40,42,55,77]. Potential barriers to this approach include training and supervision needs, remuneration and retention of this cadre, and how best to integrate these workers into existing healthcare systems [93,94]. In addition, it is known that the reliability of HIV rapid tests can be significantly affected by the user, so assurance of quality of care by lay counselors is essential [95–97]. In Malawi, where community health worker level counselors conduct a majority of testing, the Ministry of Health is proactively addressing the issue with a broad retraining of HIV counselors and development of strict quality control procedures [98]. Other countries considering task shifting may need to similarly develop standardized HIV testing guidelines, national training and supervision programs, and stringent quality assurance systems.

## Considerations for low-prevalence settings and concentrated epidemics

The approaches discussed thus far are most relevant for high HIV-prevalence settings. However, case finding for HIV-infected children is still important in low burden settings. The de facto strategy of waiting to test only those children presenting with advanced clinical disease is inadequate.

While routine testing of pregnant women in antenatal clinic [99] and expanded testing for adults [100–102] is cost effective even in low-prevalence settings, there has been little discussion of designing a similar program for infants and children. Extrapolating from adult experience, opt-out PITC should be routinely offered to children of known HIV-infected adults, those admitted for inpatient care, presenting at TB clinics, malnutrition clinics, or for orphan and vulnerable (OVC) services. In outpatient clinics, testing may be targeted toward children who are symptomatic or who present with a history of possible or known exposure [51].

Many concentrated epidemics are associated with marginalized populations (e.g. intravenous drug users, commercial sex workers) who may be less likely to access routine healthcare or fear stigmatization when they do present for care [103–105]. Children of members of marginalized populations are at much higher risk for infection and like their parents, unlikely to be enrolled in care. Programs that aim to reach marginalized populations must include the testing of children, as they may not be reached through routine health services.

Finally, screening tools that use clinical and epidemiological data may be useful in regions with concentrated HIV epidemics. One program in India developed a weighted scoring system utilizing common clinical presentations as well as local epidemiology and was able to achieve high sensitivity and specificity (95.7 and 98.6%, respectively) in detecting children with HIV infection [106].



## Conclusion

Despite expanded scale up of PMTCT services in recent years, millions of children living with HIV remain undiagnosed or present late in the course of their disease. Current case finding efforts for these children, particularly outside of the PMTCT continuum, are inadequate with no clear strategy from international agencies, national ministries of health, and implementers. Steps to improve case finding for HIV-infected children are necessary; it is unconscionable to simply wait for this hidden epidemic to die off.

Global funding agencies should support clinical trials, operational research, program development, and cost-effectiveness studies focused on novel strategies for case finding, and linkage and retention in care of HIV-infected children. A formal consultation by international organizations and agencies to develop guidelines for case finding, linkage and retention in care for affected children is also needed. These guidelines would provide up-to-date knowledge about case finding strategies for HIV-infected children in both high and low-prevalence settings and practical guides and tools for program managers. They would not only highlight the need for case finding efforts, but also assist national programs in implementation of HTC, VCT, PITC, immunization clinic screening, and community-based case finding.

On the basis of current evidence and best practices, we recommend the following five key steps toward immediately improving pediatric HIV case finding:

1. Operationalizing 'opt-out', PITC in all high-risk pediatric healthcare settings focusing on in-patient wards, malnutrition treatment centers, TB clinics, and OVC programs. HTC in these settings should be routine, either through a set of standing clinician orders, and/or as part of the facility standard operating procedures.
2. Targeted family testing and social network testing to identify high-risk infants, children, and youth.
3. Active tracing and enrollment of all HIV-infected infants and children into HIV care and treatment.
4. Advocating for national Ministries of Health to update policies to facilitate pediatric case finding. This includes revisiting the age of consent for HIV testing to allow youth 12 years of age or older to give consent for testing, as has been done in South Africa and Lesotho. Additionally, facilitating task shifting for HIV counseling and testing to all cadres of healthcare workers in affected countries would allow more access to expanded pediatric testing.
5. In high-prevalence settings, implementing universal HIV screening at immunization clinics, and supporting community and home-based HIV testing programs addressing children as well as adults.

If these five steps can be taken, we will make a major impact on identifying, linking, and initiating HIV-infected infants and children.

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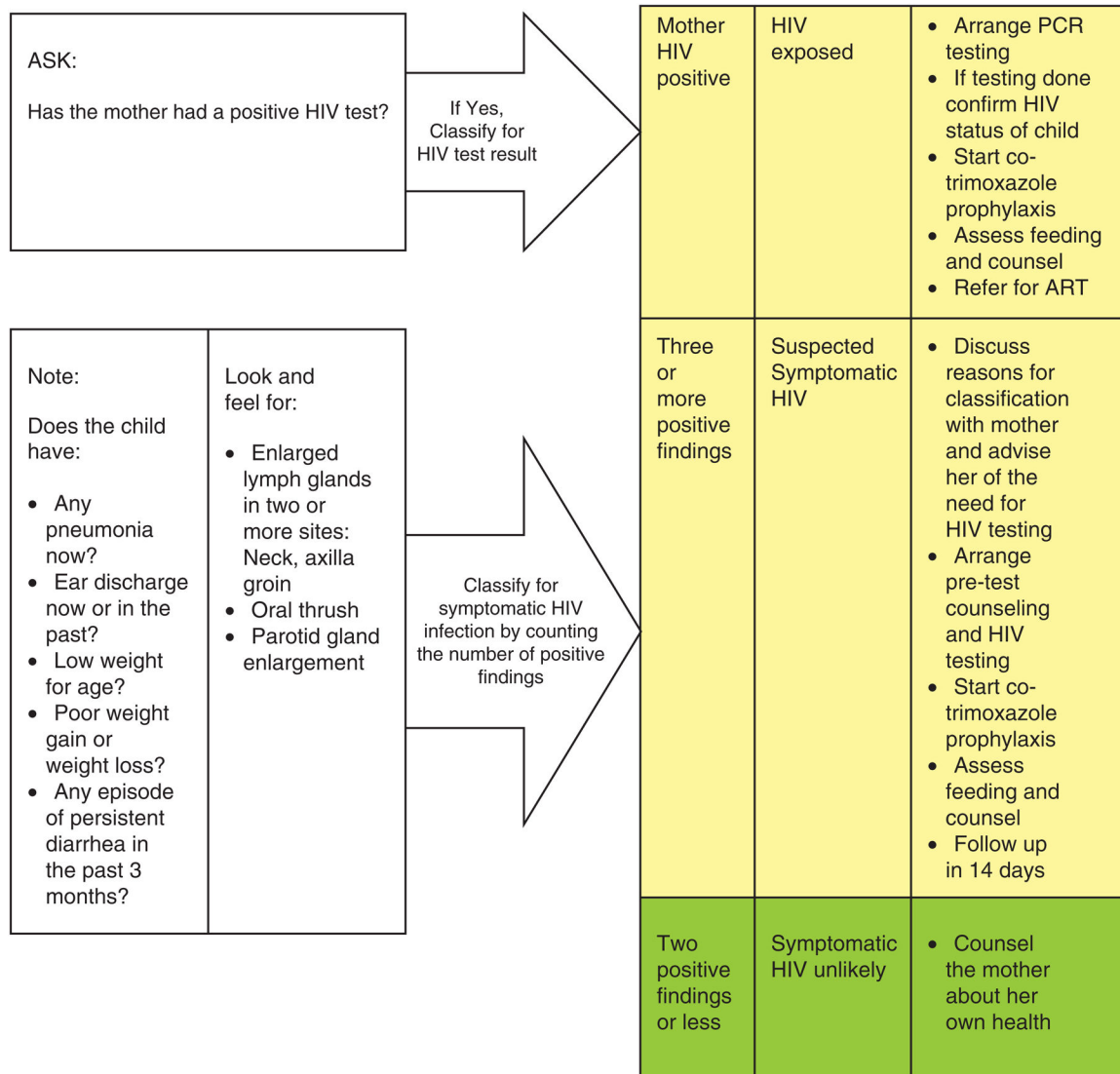
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**Fig. 1.** The Integrated Management of Childhood Illness assessment and classification for HIV infection.



A presumptive diagnosis of severe HIV disease should be made if:	
The infant or child is confirmed as being HIV antibody-positive	The infant has symptoms of two or more of the following: <ul style="list-style-type: none"> <li>• Oral thrush</li> <li>• Severe pneumonia</li> <li>• Severe sepsis</li> </ul> OR A diagnosis of any AIDS indicator condition(s)* can be made
AND	
Other clues that support the diagnosis of severe HIV disease in an HIV-seropositive infant include: <ul style="list-style-type: none"> <li>• Recent HIV-related maternal death; or</li> <li>• Advanced maternal HIV disease; or</li> <li>• The child's CD4+ count is &lt;20%.</li> </ul>	
Diagnosis of HIV infection should be confirmed with virological testing as soon as possible.	

*\*AIDS indicator conditions include: pneumocystis pneumonia, cryptococcal meningitis, severe wasting or severe malnutrition, esophageal candidiasis, Kaposi's sarcoma, and extrapulmonary tuberculosis.*

**Fig. 2. WHO clinical algorithm to identify severe HIV infection needing antiretroviral therapy**

\*AIDS indicator conditions include the following: pneumocystis pneumonia, cryptococcal meningitis, severe wasting or severe malnutrition, esophageal candidiasis, Kaposi's sarcoma, and extrapulmonary tuberculosis.

**Table 1**

Strategy framework to identify previously undiagnosed, HIV-infected children.

<b>WHERE</b>	<b>Priority areas: can be implemented in existing programming</b>	<b>Second tier: additional resources needed for training, program design</b>
All settings	Policy of routine testing in inpatient wards, tuberculosis clinics, and malnutrition units Proactive testing of children of adult patients enrolled in HIV care programs	Testing children in HIV+ social networks and families
High-prevalence settings	Testing infants and children at immunization, out-patient settings, or under-5 clinics	Door-to-door testing focused on children

TB, tuberculosis. Data from [14].

**Table 2**

WHO guidance relating to infant and child HIV testing.

Title	Recommendations summary	Link	
Consolidated Guidelines on the Use of Antiretroviral Drugs for Treating and Preventing HIV Infection (2013)	1	Includes content on HTC for children and adolescents; routine testing of exposed infants at 4–6 weeks of age or serological screening for mothers or infants with unknown exposure status.	<a href="http://www.who.int/hiv/pub/guidelines/arv2013/en/index.html">www.who.int/hiv/pub/guidelines/arv2013/en/index.html</a>
	2	Serological testing of healthy, HIV-exposed infants at 9 months and serological testing 6 weeks after the end of breastfeeding. Virologic testing needed to confirm infection in positive infants under the age of 18 months.	
Planning, Implementing, and Monitoring Home-Based HIV Testing and Counseling (2012)	1	Practical handbook designed for sub-Saharan Africa; focuses primarily on home-based services for adults.	<a href="http://www.who.int/hiv/pub/vct/home_based_care/en/index.html">www.who.int/hiv/pub/vct/home_based_care/en/index.html</a>
	2	Child and adolescent testing is also included, as well as a table listing HIV signs and symptoms that should prompt healthcare workers to recommend testing (Figure 1).	
Service Delivery Approaches to HIV Testing and Counseling (HTC): A Strategic HTC Program Framework (2012)	1	Intended for clinical and community HIV and TB service providers, program managers and policy-makers.	<a href="http://www.who.int/hiv/pub/vct/htc_framework/en/index.html">http://www.who.int/hiv/pub/vct/htc_framework/en/index.html</a>
	2	Covers PITC for children and adolescents, including how to expand beyond clinical facilities and setting clear HTC targets.	
WHO Guidelines on HIV Disclosure and Counseling for Children Up to 12 Years of Age (2011)	1	Focuses on HIV status disclosure.	<a href="http://www.who.int/hiv/pub/hiv_disclosure/en/index.html">www.who.int/hiv/pub/hiv_disclosure/en/index.html</a>
	2	Assists healthcare workers who support children under 12 years of age, and their caregivers.	

Title	Recommendations summary	Link
	3 Includes information about disclosure counseling and HIV testing and care.	
HIV Testing for Young Children: Technical Brief (2011)	1 Provides a summary of key issues. 2 Overview of the 'why, when and where' of pediatric case finding 3 Reflects WHO guidance on testing policy, technologies, diagnostic approaches, and disclosure strategies for children under 10.	<a href="http://www.who.int/hiv/pub/vct/WHO_HIV_11_02/en/index.html">www.who.int/hiv/pub/vct/WHO_HIV_11_02/en/index.html</a>
Operational Guidelines on HIV Testing and Counseling of Infants, Children and Adolescents for Service Providers in the African Region (2011)	1 Overview of settings in which pediatric HTC can be optimally provided, including maternal health services, child health services, adult testing and treatment services, home-based treatment programs, and programs for vulnerable children. 2 Recommends pediatric testing in all clinical services in generalized epidemics, and targeted testing strategies in concentrated epidemics.	<a href="http://www.afro.who.int/en/clusters-a-programmes/dpc/acquired-immune-deficiency-syndrome">www.afro.who.int/en/clusters-a-programmes/dpc/acquired-immune-deficiency-syndrome</a>
Policy requirements for HIV testing and counseling of infants and young children in health facilities (2010)	1 Outlines addressing key issues within national policy guidance to support country programming 2 Designed for use by country programs as they develop pediatric HIV testing guidelines. 3 A summary of selected WHO and UNICEF guidelines and policy guidance for pediatric HTC preceding 2010 is included.	<a href="http://www.who.int/hiv/pub/paediatric/testing_counselling/en/">www.who.int/hiv/pub/paediatric/testing_counselling/en/</a>

HTC, HIV testing and counseling; PITC, provider-initiated counseling and testing; TB, tuberculosis.