

**ICAP Collaborative PMTCT and Pediatric HIV Strategic Planning Workshop  
In Partnership with Tygerberg Children's Hospital, South Africa and S2S**

Title:	<b>Treatment failure in HIV-infected children</b>
Country:	New York
Host Name/ Title:	Stephen Arpadi, Associate Professor of Clinical Pediatrics and Epidemiology
Session Goal:	To develop an approach to recognize and manage antiretroviral treatment failure in HIV infected children.
Learning Objectives:	<ol style="list-style-type: none"> <li>1. Define and examine definitions for antiretroviral treatment failure</li> <li>2. Identify antiretroviral treatment failure in children</li> <li>3. Identify reasons for pediatric treatment failure</li> <li>4. Formulate site support approaches for monitoring detection and management of treatment failure.</li> </ol>
Instructional Method(s):	<ul style="list-style-type: none"> <li>• Large group interactive</li> <li>• Small group work</li> </ul>
Session Description :	<p><b>1-30 minutes:</b> The large group will be asked to define treatment failure</p> <ol style="list-style-type: none"> <li>1. clinical criteria;</li> <li>2. immunologic criteria;</li> <li>3. virologic criteria using national and international (WHO) guidelines</li> </ol> <p><b>30-60 minutes:</b> Participants will be divided into 2 or 3 small groups and asked to review 5 cases (as many of the 5 cases as feasible) and address the following questions</p> <ol style="list-style-type: none"> <li>1. identify if the child has treatment failure</li> <li>2. identify which criteria the child meets and when</li> <li>3. are other investigations necessary</li> <li>4. what is the recommended intervention</li> </ol> <p><b>60-90 minute:</b> The large group will be reunited and asked to decide upon the next activity:</p> <ul style="list-style-type: none"> <li>• develop an SOC or other method to determine if treatment failure is being identified and address at sites caring for children. The SOC currently in development at ICAP NY can be used for discussion</li> </ul> <p align="center"><b>or</b></p> <ul style="list-style-type: none"> <li>• to develop a set of teaching slides to introduce the concept of treatment failure to site staff</li> </ul>
Pre-session Activities:	Prepare brief summary of 1 or more cases of children on ARVs- straightforward and challenging are welcome.

**Session Notes and Summary**

**Session name:** Treatment Failure in HIV-infected Children

**Note taker name:** Elaine Abrams

**Major Discussion Points and/or Conclusions:**

**1.** Country programs report low rates (0.1%) of children on second line antiretroviral therapy. Many country programs have been treating children for a number of years and it would be expected that a

larger number of children, particularly in the more mature programs, would have failed first line ART and would have switched to second-line therapy.

**2.** Participants in the session were asked to define 'treatment failure' in children. Most participants identified the broad categories one would determine if treatment was successful, but few were familiar with either WHO or local criteria for treatment failure. WHO criteria were reviewed with the participants. These criteria are included with the WHO pediatric ART guidelines. It is also likely that each national program has a set of criteria within their guidelines as well.

In summary, WHO recommends that prior to evaluation for treatment failure, a child received ART for at least 6 months and that adherence is assured during this period.

- **Clinical Criteria:** Treatment failure should be considered when either a new or recurrent Stage 3 or 4 clinical event occurs to a child on ART (refer to the guidelines document for details).
- **Immunologic Criteria:** Treatment failure is characterized by a drop in the CD4 to values at or below their age-related CD4 threshold for the initiation of treatment after initial immune recovery following ART initiation.
  - Development of age-related severe immunodeficiency after initial immune recovery.
  - New progressive age-related severe immunodeficiency, confirmed with at least one subsequent CD4 measurement.
  - Rapid rate of decline to below threshold of age-related severe immunodeficiency.
- **Virologic Criteria:** WHO does not recommend using viral load to determine treatment failure.
  - South Africa guidelines include viral load testing of children on ART
- Comprehensive tables within the WHO document provide guidance on the use of these guidelines, including using both immunologic and clinical criteria.

\* Please consult the WHO document: Antiretroviral therapy of HIV infection in infants and children in resource-limited settings: towards universal access.

**3.** A clinical case of a child receiving ART was reviewed with the participants. The definitions of treatment failure were applied to the case and the complexity of moving from paper to the clinic was emphasized. Several key issues were discussed:

- A child must be on therapy for at least 6 months before they can be evaluated for treatment failure
- Treatment interruption because of toxicity or adherence needs to be considered
- Attention to adherence is critical particularly prior to switching to a second-line regimen
- Not all clinical events represent disease progression

**4.** Participants discussed reasons that treatment failure was not being recognized within their country programs

- Emphasis on initiating ART