Balancing the risks and benefits

In 1999, a seminal randomized trial conducted in Italy, France and Spain by the International Perinatal HIV Group found that elective C-section dramatically reduced infant HIV infection, with minimal harm to mothers. This trial and other observational evidence at the time suggested that the benefits of elective C-section outweighed the risks. Elective C-section was therefore promoted as a way to reduce vertical HIV transmission. However, during the past decade, there have been important shifts in clinical practice, management and thinking regarding the use of elective C-section for women living with HIV.

Since this trial was conducted in the 1990s, it included only women taking no antiretroviral drugs (ARVs) during pregnancy, or taking only zidovudine. In recent years, more effective regimens have been developed, and antiretroviral treatment (ART) has expanded greatly worldwide. As a result, vertical HIV transmission has been dramatically reduced, and the risk–benefit calculation for deciding on an elective C-section has shifted. Clinical guidelines in many countries do not recommend routine elective C-section for women living with HIV. However, there has been no systematic documentation of the evidence supporting this change in clinical guidance.

Elective C-sections are “those performed before onset of labour and rupture of membranes”(1).

When medically justified, a caesarean section can effectively prevent maternal and perinatal mortality and morbidity. However, there is no evidence to show that C-section delivery has any benefits for women or infants who do not require the procedure.

While developing the Consolidated guideline on sexual and reproductive health and rights of women living with HIV, published in 2017, the World Health Organization (WHO) compared the evidence base on elective C-section versus other modes of delivery for women living with HIV. When only including women on highly effective combination ART regimens or those who showed evidence of viral suppression when delivering their babies at term, the results no longer showed a difference between modes of delivery in infant HIV infection.

The 2017 guideline provides women living with HIV and health-care providers with the most up-to-date information to support informed decision-making regarding the risks and benefits of an elective C-section.

As with any surgery, C-section poses risks for women, particularly in settings that lack the facilities or capacity to safely conduct surgery or treat surgical complications, or where access to care during labour and childbirth and access to repeat C-sections in subsequent pregnancies cannot be assumed. In a recent WHO statement on C-section rates, one conclusion was that “Caesarean sections should ideally only be undertaken when medically necessary” (2). The evidence suggests that routine elective C-section for all women living with HIV may not be appropriate. However, risks and benefits will differ across settings and for individual women, depending on the underlying risks of complications from C-section and of vertical transmission during delivery. Clinicians should consider and discuss the risks and benefits with all women, including women living with HIV.
WHO recommendation (3)

WHO recommends that elective C-section should not be routinely recommended to women living with HIV. (*Strong recommendation, low-quality evidence*)

**Remarks**
- The benefits and risks of different modes of delivery should be discussed with women living with HIV, including vaginal delivery, and elective and non-elective C-section.
- When indicated for other medical or obstetric reasons, C-section should still be offered, as for all women.
- Wide communication of this recommendation is important, as many health-care providers continue to believe that C-section is best for women living with HIV, which leads to coerced delivery decisions and practices.
- In many settings with a high burden of HIV, women who need C-sections do not have access to them, especially in rural areas. When a C-section is medically indicated, it should be available, accessible, affordable and safe.

**Considerations for success**

To successfully implement the WHO recommendation which does not recommend routine elective C-section for women living with HIV, policy-makers should consider the following.

**Policy and regulatory frameworks:** The current policy in many countries is to perform routine elective C-sections for women living with HIV. These procedures are expensive, require equipment that may not be available and they may result in adverse outcomes, such as sepsis. Countries can improve maternal and perinatal health outcomes and empower women living with HIV by amending policies to match the new recommendation. In addition, countries can:

- ✔ support medical practitioners with correct and current information on best practices;
- ✔ inform and empower women so that they can decide with confidence to avoid unnecessary C-sections;
- ✔ embed principles of human rights in all health-care policies so that women living with HIV are included in decision-making around choice of modes of delivery;¹
- ✔ ensure that C-sections are only performed when medically indicated for the health of the mother and the baby, and that there are no financial incentives for health-care providers to perform C-sections.

**Coverage of HIV and syphilis testing:** To eliminate the vertical transmission of HIV, it is essential that women living with HIV know their status and have a suppressed viral load at the time of delivery. Only 76% of pregnant women living with HIV received ART in 2016. Coverage of HIV testing and treatment must improve to achieve the UNAIDS 90–90–90 targets by 2020.² Additionally, there continues to be vertical transmission of HIV among pregnant women co-infected with syphilis and HIV. Screening, diagnosis and treatment of sexually transmitted infections (STIs) is therefore crucial to a comprehensive response to HIV.

**Overview of considerations**

<table>
<thead>
<tr>
<th>Population type</th>
<th>Delivery mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women (general population, HIV-negative status)</td>
<td>C-section only if medically indicated</td>
</tr>
<tr>
<td>Women living with HIV, not on antiretroviral therapy (ART)</td>
<td>C-section decreases HIV transmission to the infant</td>
</tr>
<tr>
<td>Women living with HIV, on highly effective combination ART regimen</td>
<td>Decision on mode of delivery should be based on risks and benefits*</td>
</tr>
<tr>
<td>Women living with HIV, virally suppressed</td>
<td>Decision on mode of delivery should be based on risks and benefits*</td>
</tr>
<tr>
<td>Women living with HIV, viral load status unclear, ART adherence unknown</td>
<td>Decision on mode of delivery should be based on risks and benefits*</td>
</tr>
</tbody>
</table>

* The decision should be facilitated by discussion between the woman and her health-care provider. C-sections are effective in saving maternal and infant lives, but only when they are conducted for medically indicated reasons.

**Broader context**

Providing comprehensive, rights-based, quality services to women living with HIV is key to improved maternal and perinatal outcomes. This includes ensuring choice, confidentiality and non-discrimination in health care, and an enabling environment to improve the autonomy, empowerment and resilience of women living with HIV.

**References**


**Further resources** on linkages between maternal and newborn health and HIV can be found here: www.who.int/reproductivehealth/test/Linkages-MNH-HIV.pdf

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² 90% of all people living with HIV will know their HIV status, 90% of all people with diagnosed HIV infection will receive sustained ART, and 90% of all people receiving ART will have viral suppression. Further information: www.unaids.org/en/resources/909090