HIV and STI treatment guidelines updates

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UNICEF, UNFPA & WHO Meeting: Improving the Response of Global Public Health in a Fast-changing World

Copenhagen, 2-5 Dec 2019
Global number of people receiving antiretroviral treatment

Source: UNAIDS/WHO estimates

Expected impact of HIV treatment in survival of a 20 years old person living with HIV in a high income setting (different periods)


Source: UNAIDS/WHO estimates
WHAT TO DO?
- When to start/switch
- Which regimen to use
- How to monitor
- Special populations
- Drug toxicities & drug interactions
- Screening, prevention and management of OIs & co-morbidities

HOW TO DECIDE?
- Approaches to prioritization & sequencing
- Tool kits for country adaptation and implementation

WHO Consolidated ARV Guidelines

Clinical

Operational & Service Delivery

Programmatic Prioritization

HOW TO DO IT and HOW TO DO IT WELL?
- Care Packages (Differentiated Care)
- Service delivery
- Quality of care
- Diagnostics
- Supply Chain for Drugs & Diagnostics
2019 ARV recommendations at a glance

- TLD as preferred regimen in 1st line ART for all PLHIV (with approved DTG dose)
- TLE400 as alternative 1st line option. TLE600 in special circumstances
- Switching of stable patients using suboptimal regimens is recommended. Switching those on TLE with suppressed VL should be considered
- DTG as preferred option in 2nd line in those who not used DTG in 1st line
- Boosted PI as preferred option in those who already used DTG in 1st line
- DTG BD in TB/HIV patients using rifampicin is safe
- DRV/r as anchor drug in 3rd line, associated with DTG BD (± 1-2 NRTIs as optional)
DTG as preferred option in 1st line: improved efficacy and durability when compared with EFV

- Better than EFV in the majority of critical outcomes (high quality of evidence)
- Rapid viral load suppression
- Once daily and well tolerated
- High genetic barrier to resistance
- Few drug interactions
- Single and fixed dose generic formulations
- Comparable price with EFV containing regimens in LMICs (good potential for further reduction)
**EFV400 as alternative 1st line option: improved tolerability and less treatment discontinuation when compared with EFV600**

- Comparable in terms of critical efficacy outcomes, but better tolerability and less treatment discontinuation due AEs when compared with EFV600 containing regimens (moderate to high quality of evidence)
- Can be safely used in TB and PW
- Fixed-dose generic formulations

**TAF only in special situations in adults with renal impairment/osteoporosis (alternative option in children)**

- No demonstrated significant clinical advantage with the use of TAF over TDF in adult PLHIV without renal or bone problems (comparable critical efficacy and toxicity outcomes – differences only in lab markers)
- Limited safety data in PW and young children
- Drug interaction with rifampicin (cannot be used)
- Significant body weight gain when used with DTG (ADVANCE)
DTG as preferred option in 2\textsuperscript{nd} line: improved tolerability and less treatment discontinuation when compared with PIs

- Comparable in terms of critical efficacy outcomes, but better tolerability and less treatment discontinuation when compared with PI containing regimens (moderate to high quality of evidence)
- Once daily and lower pill burden
- Can be used in TB coinfection (double dose)
- Few drug interactions
- Single and fixed-dose generic formulations
- Lower price when compared with PI containing regimens in LMICs
By mid 2019, 123 LMICs (90%) informed that have included or are planning to include DTG in their HIV treatment policy:

- TLD adopted as preferred 1st line option in national guidelines: 41
- DTG introduced/introducing in national guidelines and procurement initiated: 82

- Approximately 4-5 million on PLHIV using DTG globally (accelerated uptake expected in 2019/2020)

*WHO, preliminary data

New ARVs in WHO medicines lists (EML and EoI)
TLD and TLE400 in EML (page 20)
https://apps.who.int/iris/bitstream/handle/10665/325771/WHO-MVP-EMP-IAU-2019.06-eng.pdf?ua=1

TLD, TED, TEE400, TLE400, DRV/r in 17th HIV EoI (April 2019)

https://www.who.int/hiv/pub/arv/treat-all-uptake/en/
Prevalence of NTDs by ARV Exposure (Tsepamo study)

Different phenotypes of neural tube defects

<table>
<thead>
<tr>
<th></th>
<th>Conception (n)</th>
<th>Pregnancy (n)</th>
<th>HIV Negative (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total NTDs per exposures, n/N</strong></td>
<td>5/1683</td>
<td>15/14792</td>
<td>3/7959</td>
</tr>
<tr>
<td><strong>Prevalence difference, % (95% CI)</strong></td>
<td>Ref</td>
<td>0.20 (0.01-0.59)</td>
<td>0.26 (0.07-0.66)</td>
</tr>
<tr>
<td>NTDs per exposures since May 2018, n/N</td>
<td>1/1275</td>
<td>1/3492</td>
<td>0/2172</td>
</tr>
</tbody>
</table>
Both models show that use of EFV for WCP initiating ART rather than DTG in order to avoid NTDs (& NNDs) would likely lead to other substantial negative impacts at population level.

Risk-benefit assessment of EFV vs DTG at population level

Both models show that use of EFV for WCP initiating ART rather than DTG in order to avoid NTDs (& NNDs) would likely lead to other substantial negative impacts at population level.
Folate Food Fortification and NTD risk

Williams, MMWR, 2015

Fortification begun

USA

36% decline

66% decline

Table 2. Regional meta-analysis of overall birth prevalence of neural tube defects

<table>
<thead>
<tr>
<th>Region</th>
<th>Number of studies</th>
<th>Overall NTD birth prevalence per 10,000 live births</th>
<th>95% Confidence intervals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australasia</td>
<td>1</td>
<td>12.10</td>
<td>10.45–13.94</td>
</tr>
<tr>
<td>Latin America and the Caribbean: with folic acid fortification</td>
<td>12</td>
<td>7.78</td>
<td>6.58–8.97</td>
</tr>
<tr>
<td>Latin America and the Caribbean: without folic acid fortification</td>
<td>1</td>
<td>22.89</td>
<td>18.01–28.69</td>
</tr>
<tr>
<td>Eastern Europe and Central Asia</td>
<td>6</td>
<td>9.92</td>
<td>7.6–12.24</td>
</tr>
<tr>
<td>Sub-Saharan Africa: with folic acid fortification</td>
<td>1</td>
<td>9.95</td>
<td>7.26–13.30</td>
</tr>
<tr>
<td>Sub-Saharan Africa: without folic acid fortification</td>
<td>6</td>
<td>15.27</td>
<td>10.19–20.34</td>
</tr>
<tr>
<td>East Asia</td>
<td>9</td>
<td>19.44</td>
<td>15.46–23.41</td>
</tr>
<tr>
<td>Northern Africa and Western Asia</td>
<td>9</td>
<td>17.45</td>
<td>13.56–21.34</td>
</tr>
<tr>
<td>Europe</td>
<td>17</td>
<td>8.63</td>
<td>6.80–10.47</td>
</tr>
<tr>
<td>Southeast Asia</td>
<td>2</td>
<td>6.76</td>
<td>5.77–7.75</td>
</tr>
<tr>
<td>North America</td>
<td>NA</td>
<td>Both countries in region have data</td>
<td></td>
</tr>
<tr>
<td>Southern Asia</td>
<td>11</td>
<td>31.96</td>
<td>23.81–40.12</td>
</tr>
</tbody>
</table>

Blencow & H et al. Ann NY Acad Sci 2018
Programmes should strengthen the integration of sexual and reproductive health services within HIV treatment programmes to ensure reliable and consistent access to contraception for women and adolescent girls living with HIV.
Access to DTG as preferred 1\textsuperscript{st} line among WCBP in 36 LMICs, Nov 2019
(preliminary data - Nov 2019)

36 countries

- **All WCBP non-DTG based regimen** 3 countries
  - Burundi, Gabon, Equatorial Guinea

- **WCBP can access DTG if on Contraception** 25 countries
  - ANY contraception 2 countries
    - Cameroon, Ukraine
  - Long Acting Contraception 15 countries
    - Botswana, Brazil, CAR, Chad, Congo, Cote d'Ivoire, DRC, Gabon, Kenya, Haiti, Mozambique, Nigeria, Sao Tome & Principe, South Africa, Venezuela
  - Consistent reliable contraception 8 countries
    - Argentina, Burkina Faso, Ethiopia, Ghana, Niger, Senegal, Syria, Togo

- **Informed choice** 8 countries
  - Eswatini, Lesotho, Malawi, Tanzania, Rwanda, Uganda, Zambia, Zimbabwe
## TLD transition at a glance

<table>
<thead>
<tr>
<th>Treatment transition scenario</th>
<th>Preferred approach</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DTG in people living with HIV initiating ART</strong></td>
<td></td>
</tr>
<tr>
<td>Adult men, post-menopausal women and adolescent boys</td>
<td>Initiate TLD</td>
</tr>
<tr>
<td>Pregnant/Breastfeeding women and adolescent girls</td>
<td>Initiate TLD</td>
</tr>
<tr>
<td>Women and adolescent girls of childbearing age potential</td>
<td>Initiate TLD + informed decision on use of contraception and folate supplementation</td>
</tr>
<tr>
<td>Children</td>
<td></td>
</tr>
<tr>
<td>if body weight ≥ 20 kg</td>
<td>Initiate ABC/3TC + DTG (20-29.9 kg) or TLD (≥ 30 kg)</td>
</tr>
<tr>
<td>if body weight &lt; 20 kg</td>
<td>Initiate ABC/3TC + LPV/r</td>
</tr>
<tr>
<td>TB co-infection</td>
<td>Initiate TLD (DTG BD)</td>
</tr>
<tr>
<td><strong>DTG in people living with HIV already using first-line regimen</strong></td>
<td></td>
</tr>
<tr>
<td>Clinical/immunological failure or viral load non-suppressed</td>
<td></td>
</tr>
<tr>
<td>If DTG not used in the regimen</td>
<td>Switch to AZT+3TC + DTG</td>
</tr>
<tr>
<td>If DTG used in the regimen</td>
<td>Switch to AZT + 3TC + PI/r</td>
</tr>
<tr>
<td>Viral load suppressed</td>
<td>Substitution to TLD regimen may be considered</td>
</tr>
<tr>
<td>Clinically/immunologically stable and VL unknown</td>
<td>Prioritize VL testing or consider programmatic / clinical indications for substitution to TLD</td>
</tr>
<tr>
<td>Clinically/immunologically stable on suboptimal first-line ARV regimens</td>
<td>Substitution to TLD</td>
</tr>
<tr>
<td><strong>DTG in people living with HIV using second-line regimen</strong></td>
<td></td>
</tr>
<tr>
<td>Clinical/immunological failure or viral load non-suppressed</td>
<td>Switch to DTG (BD) + DRV/r (BD) ± NRTI</td>
</tr>
</tbody>
</table>
INSTI and new story of weight gain among PLHIV
ADVANCE: BMI category over time in women (obese at baseline excluded)
WHO support to countries for implementation of active toxicity monitoring and safe introduction of DTG and other new ARVs – guidance, tools and technical assistance

1. Guidance and tools inc. WHO ARV toxicity monitoring implementation tool and training materials

New indicators for toxicity in case surveillance & routine monitoring

General population inc. children & adolescents

Pregnant women

Pregnancy & birth defect registry tools

WHO global ARV toxicity monitoring database

Central registry for drug safety in pregnancy

Toolkit with PV module for children

Generic DTG ADR notification form

WHO global databases

South Africa

UNAIDS partnership

UNAIDS UNAIDS UNAIDS

Brazil

Korea MOH and KIC

UNAIDS partnership

WHO / TDR central database for safety evaluation of DTG

UNAIDS

UNAIDS

Malawi

Botswana

WHO / TDR Global registry for Drug Safety in Pregnancy

TDR

TDR

TDR

TDR

TDR

TDR

TDR

TDR
Implementing DTG introduction/transition

- Revise national guidelines according country context, considering clinical, epidemiological and programmatic factors

- Ensure adequate supply to meet anticipated demand (phased approach recommended)

- Ensure sufficient buffer stocks of older and new drugs throughout the transition period and beyond.

- Train health care workers

- Update registers and forms

- Implement active toxicity surveillance

- Appropriate communication/messaging to communities
View to 2020/2021 – Updating the Consolidated HIV Guidelines - Scoping for PICOs have started

Potential Cross-Cutting work

- Values and Preferences
- Community engagement
- Programmatic examples
- Good practice case studies
## What is next in WHO ART Guidelines: priorities and challenges

<table>
<thead>
<tr>
<th>Priorities</th>
<th>Challenges</th>
</tr>
</thead>
</table>
| **Accelerate/consolidate TLD transition**                                  | • Long term safety (NTD and emerging AEs – body weight gain, metabolic syndrome)  
• Transition in stable patients  
• Robustness in real life conditions and with NRTI resistance               |
| **Role of alternative regimens/drugs (TLE, bPIs)**                         | • How to guarantee adequate supply chain / availability                     |
| **Accelerate the phase out of suboptimal drugs (eg: NVP)**                 | • Removal from next EML?  
• Support to accelerated phase out plans                                      |
| **Role of DRV in ART sequencing**                                         | • Dose reduction and better formulations (FDCs, nanomedicines)  
• High cost as an important barrier  
• Would be better promote DRV/r in 2\(^{nd}\) line or reserve it for 3\(^{rd}\) line? |
| **Role of TAF (should replace TDF?)**                                      | • Long term safety (body weight gain and other emerging AEs)  
• Transition in stable patients (all patients or only high risk groups?)     |
| **Role of dual therapy (including long acting drugs and emerging classes) in LMIC context** | • What are the options in short, medium and long term?  
• Can we go beyond than simplification strategy?  
• Limited data on long term safety                                      |
# Major pipeline compounds for HIV Treatment and Prevention (end 2019)

<table>
<thead>
<tr>
<th>Drug Class</th>
<th>Phase I</th>
<th>Phase II</th>
<th>Phase III</th>
<th>Phase IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>NRTI/NRTTI/NRTTI</td>
<td>MK-8583</td>
<td>GS9131*</td>
<td></td>
<td>TAF*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Islatravir (MK8591)*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NNRTI</td>
<td>ACC007</td>
<td>Elsufavirine</td>
<td>Rilpivirine LA*</td>
<td>Doravirine</td>
</tr>
<tr>
<td>Integrase Inhibitors</td>
<td></td>
<td></td>
<td>Cabotegravir *</td>
<td>DTG* Raltegravir HD* Bictegravir</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entry inhibitors/bNAbs</td>
<td>Combonectin</td>
<td>ABX-464</td>
<td>Leronlimab (PRO140)</td>
<td>Ibazalumab*</td>
</tr>
<tr>
<td></td>
<td>VRC01*</td>
<td>3BNC117</td>
<td>UB-421</td>
<td></td>
</tr>
<tr>
<td></td>
<td>VRC01–LS*</td>
<td></td>
<td>Albuviritide</td>
<td></td>
</tr>
<tr>
<td></td>
<td>VRC07-523LS</td>
<td></td>
<td>Fostemsavir</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PGT-121</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capsid inhibitors</td>
<td>GS-6207 (GS-CA1)</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>HRF-4467</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maturation inhibitors</td>
<td>GSK-3640254</td>
<td>GSK-2838232</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unknown mechanism</td>
<td>MK-8527</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>MK-8558</td>
<td></td>
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</tr>
</tbody>
</table>

* Potential use for PreP

- New drugs/formulations
- Biologics

Adapted from TAG pipeline report, 2019
STIs: Current Key Facts and Challenges

- More than 1 million sexually transmitted infections (STIs) occur every day.
- 376 million chlamydia, gonorrhea, syphilis and trichomoniasis infections occur each year.
- More than 500 million people have herpes genital infections
- 300 million women have a HPV infection (likely similar in men).
- The majority of STIs occur without symptoms.
- Some STIs can increase the risk of HIV acquisition (3-5 X).
- Other STIs consequences: congenital infections, infertility and cervical cancer.
- Drug resistance for gonorrhea is a major threat to controlling this STI worldwide
- STI vaccines: HPV and HBV only

Main Challenges for STI control

- Behaviour changes is complex and multifactorial
- Health services for screening and treatment of STIs remain weak
- STI services frequently not integrated in routine care
- Key populations for STIs often do not have access to adequate health services.
### WHO STI guidelines: current and planned updates

<table>
<thead>
<tr>
<th>Phases</th>
<th>Topics</th>
<th>Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1</td>
<td>Treatment of specific STIs: Chlamydia, gonorrhoea, HSV-2 and syphilis</td>
<td>2016</td>
</tr>
<tr>
<td></td>
<td>Syphilis screening and treatment of pregnant women</td>
<td>2017</td>
</tr>
<tr>
<td></td>
<td>STI syndromic approach and clinical management package</td>
<td></td>
</tr>
<tr>
<td>Phase 2</td>
<td>STI prevention: condoms, behaviour change communication, biomedical</td>
<td>2020</td>
</tr>
<tr>
<td></td>
<td>interventions and vaccines</td>
<td></td>
</tr>
<tr>
<td>Phase 3</td>
<td>Treatment of specific STIs and reproductive tract infections (RTIs)</td>
<td>2021</td>
</tr>
<tr>
<td></td>
<td>not addressed in Phase 1: Trichomonas vaginalis (trichomoniasis),</td>
<td></td>
</tr>
<tr>
<td></td>
<td>bacterial vaginosis, Candida albicans (candidiasis), Hemophilus ducreyi</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(chancroid), Klebsiella granulomatis (donovanosis), human papillomavirus</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(HPV; genital warts/cervical cancer), Sarcoptes scabiei (scabies) and</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Phthirus pubis (pubic lice)</td>
<td></td>
</tr>
<tr>
<td>Phase 4</td>
<td>STI laboratory diagnosis and screening</td>
<td>2022</td>
</tr>
</tbody>
</table>
STI Treatment guidelines at a glance

- Global recommendations for Chlamydia, Gonorrhoea, Genital Herpes and Syphilis
- Ceftriaxone and Azithromycin recommended for Gonorrhoea
- Azithromycin and Doxycycline are options in treatment regimens for Chlamydial infection
- Azithromycin increasing resistance to gonorrhoea and Mycoplasma genitalium
- Dual therapy as preferred approach for treatment of gonorrhoea (controversial issue that need to be further investigated)
- Penicillin and Acyclovir continue to be cornerstone options for syphilis and genital herpes, respectively
- Ceftriaxone and doxycycline as alternative options in syphilis
Key Messages: N. gonorrhoea guidelines
(http://www.who.int/reproductivehealth/publications/rtis/gonorrhoea-treatment-guidelines/en/)

• **Local resistance data** to determine the choice of therapy (both for dual therapy and single therapy).

• Use of **dual therapy** over single therapy
  • Ceftriaxone 250 mg or Cefixime 400 mg plus Azithromycin 1 gram 1x

• **Quinolones are no longer recommended**

• **Treatment Failure:** dual therapy with increased dosing
  • Ceftriaxone 500 mg plus Azithromycin 2 grams
  • Gentamicin or Spectinomycin plus Azithromycin 2 grams

• For all neonates, topical ocular prophylaxis for the prevention of gonococcal and chlamydial **ophthalmia neonatorum**
Key Messages: Chlamydia and LGV

(http://www.who.int/reproductivehealth/publications/rtis/chlamydia-treatment-guidelines/en/)

- *Clamydia trachomatis*
  - *Azithromycin or Doxycycline* remain to be treatment of choice
  - *Ano-rectal infection: Doxycycline* over Azithromycin

- *Lymphogranuloma venereum*
  - *Doxycycline* 100 mg orally twice daily for 21 days over azithromycin 1 g orally, weekly for 21 days
Key Messages: Genital Herpes Simplex Virus


<table>
<thead>
<tr>
<th>Primary</th>
<th>Episodic</th>
<th>Suppressive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acyclovir 400 mg TID x <strong>10 days</strong></td>
<td>Acyclovir 400 mg TID x <strong>5 days</strong></td>
<td>Acyclovir <strong>400 mg BID</strong></td>
</tr>
<tr>
<td>Acyclovir 200 mg 5 x day x 10 days</td>
<td>Acyclovir 800 mg BID x 3 day</td>
<td>Valacyclovir 500 mg OD</td>
</tr>
<tr>
<td>Valacyclovir 500 mg BID x 10 days</td>
<td>Acyclovir 800 mg TID x 2 days</td>
<td>Famciclovir 250 mg BID</td>
</tr>
<tr>
<td>Famciclovir 250 mg TID x 7-10 days</td>
<td>Valacyclovir 500 mg BID x 3 days</td>
<td></td>
</tr>
</tbody>
</table>

**Suppressive therapy:** Individuals who have **frequent recurrences** (such as four to six times per year), severe symptoms or episodes which cause distress will likely choose suppressive therapy over episodic therapy.

**PLHIV:** increased dosages for episodic and suppressive therapy
Key Message: Syphilis Treatment


<table>
<thead>
<tr>
<th></th>
<th>Adults and Adolescents</th>
<th>Pregnant Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preferred</td>
<td><strong>Benzathine penicillin G</strong></td>
<td><strong>Benzathine penicillin G</strong></td>
</tr>
<tr>
<td></td>
<td>2.4 million units IM QD x 1</td>
<td>2.4 million units IM QD x 1</td>
</tr>
<tr>
<td></td>
<td>2.4 million units IM QD x 3</td>
<td>2.4 million units IM QD x 1</td>
</tr>
<tr>
<td></td>
<td>2.4 million units IM QD x 1</td>
<td>2.4 million units IM QD x 1</td>
</tr>
<tr>
<td>Alternative</td>
<td><strong>Procaine penicillin G</strong></td>
<td><strong>Procaine penicillin G</strong></td>
</tr>
<tr>
<td></td>
<td>1.2 million units IM QD x 10-14 days</td>
<td>1.2 million units IM QD x 10-14 days</td>
</tr>
<tr>
<td></td>
<td>1.2 million units IM QD x 10-20 days</td>
<td>1.2 million units IM QD x 10-14 days</td>
</tr>
<tr>
<td></td>
<td>1.2 million units IM QD x 10-14 days</td>
<td>1.2 million units IM QD x 10-14 days</td>
</tr>
<tr>
<td>Penicillin allergy or stock out</td>
<td><strong>Doxycycline</strong>&lt;sup&gt;1&lt;/sup&gt;</td>
<td><strong>Erythromycin</strong>&lt;sup&gt;2&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>100 mg BID x 14 days</td>
<td>500 mg QID x 30 days</td>
</tr>
<tr>
<td></td>
<td>500 mg QID x 14 days</td>
<td>500 mg QID x 14 days</td>
</tr>
<tr>
<td></td>
<td>500 mg QID x 14 days</td>
<td>500 mg QID x 14 days</td>
</tr>
</tbody>
</table>

<sup>1</sup> Ceftriaxone 1 g IM, QD x 10-14 days or Azithromycin 2 g QD x 1 can be used in special circumstances
<sup>2</sup> Use with caution
Key Message: Congential syphilis


<table>
<thead>
<tr>
<th>Choice</th>
<th>Confirmed congenital syphilis or normal infant born from mother with not adequately treated syphilis</th>
<th>Normal infant born from mother with adequately treated syphilis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preferred</td>
<td>Benzyl penicillin 100K-150K U/Kg IV 10-15 days</td>
<td>Benzathine penicillin G 50K U/kg IM QD x 1</td>
</tr>
<tr>
<td>Alternative</td>
<td>Procaine penicillin G 50K U/kg IM QD x 10-15 days</td>
<td></td>
</tr>
</tbody>
</table>

All pregnant women should be screened for syphilis during the first antenatal visit, regardless of syphilis prevalence.

Because syphilis during pregnancy can lead to severe adverse complications to the fetus or newborn, **stock-outs of benzathine penicillin for use in antenatal care should be avoided.**

Screening algorithms using on site or lab based treponemal/non trepanemal tests according to prevalence and structure capacity.
Challenges: gonorrhoea and chlamydial infection treatment

• Gonorrhoea and AMR
  • Increasing resistance to ceftriaxone and azithromycin
  • Limited national surveillance

• Mycoplasma genitalium
  • How common? Public implication?
  • Resistance and treatment

• Utility of Azithromycin
  • Reported resistance in *N. gonorrhoeae*, *T. pallidum*, *T. pertenue*, *M. genitalium*
Challenges: Syphilis

• Treatment
  • Global penicillin shortage
  • Azithromycin and erythromycin: Does not prevent MTCT of syphilis
  • New treatment option – oral and short course that cross the placental and blood-brain barrier
  • Appropriate dosage of ceftriaxone
  • Ceftriaxone use in infants

• Screen and treat for pregnant women
  • Real test accuracy of sequential test
    • Cohort of women to determine feasibility of sequential test
  • Combined treponemal and non-treponemal test
  • Dual HIV and syphilis screening test and treat
Re-thinking syndromic case management

• **Symptomatic and not for screening**

• **Challenges:**
  • Persistent urethral and cervical infection and role of *Mycoplasma genitalium*
  • **Low diagnostic performance** of vaginal discharge to manage cervical infection
  • **Low diagnostic performance** of ano-rectal infection (entry point is anal sex)
  • GUD generally due to genital HSV

• Develop flowcharts based on specific context and settings – aetiologies of syndromes in countries

• **Point-of-care test** : available, accessible and affordable
Current and future priorities for STI control

• Invest in STI care – symptomatic matters; limitation of syndromic case management

• Support the development of new technologies for STI care (point-of care diagnostic tests for STIs)

• Scale-up effective STI services including HPV and hepatitis B vaccination.

• Promote strategies to integrate STI services e.g. PrEP services

• Monitor and respond to STI antimicrobial resistance.

• Priorities in STI research agenda:
  • Additional drugs for gonorrhoea and syphilis
  • STI vaccines and other biomedical interventions (PreP)?
WHO HIV Apps

https://www.who.int/hiv/hiv-apps/en/