1. Scope and purpose

The overall purpose of these guidelines is to provide guidance on best clinical practice in the treatment and management of women living with the human immunodeficiency virus (HIV) in the UK during pregnancy and postpartum, and their infants. The scope includes guidance on the use of antiretroviral therapy (ART) both to prevent vertical transmission of HIV and for the welfare of the woman and her baby, guidance on mode of delivery and recommendations in specific patient populations where other factors need to be taken into consideration, such as co-infection with other agents. The guidelines are aimed at clinical professionals directly involved with, and responsible for, the care of pregnant women living with HIV. The 2018 guidelines have identified significant developments that have either led to a change in recommendation or a change in the strength of recommendation. More detail has been added in areas of controversy, particularly breastfeeding. New data that simply support the existing data have not routinely been included in this revision. A new section on the postpartum management of women has been added. Of note, the term 'HIV' refers to HIV-1 throughout these guidelines, unless HIV-2 is specified.

1.1 Guideline development process

The British HIV Association (BHIVA) revised and updated the Association's guideline development manual in 2011 (www.bhiva.org/BHIVA-guideline-development). BHIVA has adopted the modified GRADE system for the assessment, evaluation and grading of evidence and the development of recommendations. Full details of the guideline development process including selection of the writing group and the conflict of interest policy are outlined in the manual.

The guidelines were commissioned by the BHIVA Guidelines Subcommittee; the Subcommittee nominated the Chair and Vice-chair of the writing group, who then nominated a writing group of experts in the field based on their knowledge, expertise and freedom from conflicts of interest (the conflict of interest statements of members of the writing group are available and have been published along with these guidelines on the BHIVA website). In addition, BHIVA members were asked to volunteer as authors for the guidelines, again based on their knowledge, expertise and freedom from conflicts of interest.

The scope, purpose and guideline topics were agreed by the writing group. Questions concerning each guideline topic were drafted and a systematic literature review undertaken by an information scientist. Details of the search questions (including the definition of populations, interventions, comparators and outcomes) are outlined in Appendix 1, and details of the search strategy can be found on the BHIVA website (www.bhiva.org/pregnancy-guidelines). The literature searches for the 2018 guidelines covered the period from July 2013 to July 2017 (with an additional search on ART in pregnancy from July 2017 to May 2018 in response to consultation comments), and included abstracts from selected conferences. For each topic and healthcare question, evidence was identified and evaluated by writing group members with expertise in the field. Using the modified GRADE system (see Appendix 2), members were responsible for assessing and grading the quality of evidence for predefined outcomes across studies and developing and grading the strength of recommendations. All writing group members received training in use of the modified GRADE criteria before assessing the evidence.

Owing to the lack of data from randomised controlled trials in several important areas, the writing group was unable to assign high grades (in areas such as mode of delivery); however, recommendations have been given on best practice where decisions need to be made on the balance of available evidence. Recommendations are summarised and numbered sequentially within the text.

The guidelines were published online for public consultation and external peer review was commissioned, comments from which resulted in minor revision prior to final approval by the writing group.

1.2 Patient involvement

BHIVA views the involvement of patient and community representatives in the guideline development process as both important and essential. The writing group included two patient representatives who were involved in all aspects of the guideline development.

1.3 Dissemination and implementation

The following measures have been/will be undertaken to disseminate and aid implementation of the guidelines:

- E-publication on the BHIVA website and in the journal *HIV Medicine*;
- Publication in *HIV Medicin*e;
- Shortened version including concise summary of recommendations;
- E-learning module accredited for CME;
- Educational slide set to support local and regional educational meetings;
- National BHIVA audit programme;
- Presentation of significant changes and additions at a BHIVA national conference.

1.4 Summary of guideline update and date of next review

There have been some changes in recommendations.

- Prevalence data on HIV in pregnancy: updated.
- Infant feeding: updated advice including new data on breastfeeding and the emotional impact of not breastfeeding on women. The use of cabergoline in non-breastfeeding women is also discussed.
- Psychosocial care: section 4 on The psychosocial care of women living with HIV during and after pregnancy has been expanded and its position moved within the guidelines to reflect its importance.
- Safety: new data have been included on tenofovir DF, raltegravir, rilpivirine, dolutegravir, elvitegravir and cobicistat.
- Prescribing: all women (including elite controllers) are recommended to start on treatment and remain on lifelong treatment.
- Infant post-exposure prophylaxis (PEP): length of infant PEP has been shortened where risk of vertical transmission is VERY LOW.
- Hepatitis: information has been added on tenofovir alafenamide for hepatitis B virus (HBV) infection and on direct-acting agents for hepatitis C virus (HCV) infection.
- A new section has been added on the postpartum management of women living with HIV.

We aim to revise these guidelines by 2021. In the meantime, the writing group will confer at least annually to consider new information from high-quality studies and will issue revisions or updates should clinically important and relevant data become available.

2. Recommendations and auditable outcomes

2.1 Recommendations

Section 4. The psychosocial care of women living with HIV during and after pregnancy

4.1 Psychosocial issues around HIV and pregnancy

4.1.1	Antenatal HIV care should be delivered by a multidisciplinary team (MDT).	1D
4.1.2	We recommend that pregnant women living with HIV are offered peer support where available.	1B

4.2 Perinatal mental health assessment

4.2	Assessment of antenatal and postnatal depression should be undertaken at booking, and 4–6 weeks postpartum and 3–4 months postpartum in accordance with National Institute for Care and Health Excellence (NICE) guidelines.	1D

Section 5. Screening and monitoring of pregnant women living with HIV

5.1 Sexual health screening

5.1.1	Sexual health screening is recommended for pregnant women newly diagnosed with HIV.	1B
5.1.2	For women living with HIV and already engaged in HIV care who become pregnant, sexual health screening is suggested.	2C
5.1.3	Genital tract infections should be treated according to British Association for Sexual Health and HIV (BASHH) guidelines.	1B

5.2 Laboratory monitoring of pregnant women living with HIV

5.2.1	Pregnant women who are newly diagnosed with HIV do not require any additional baseline investigations compared with non-pregnant women living with HIV other than those routinely performed in the general antenatal clinic.	1D
5.2.2	HIV resistance testing should be completed and results available prior to initiation of treatment, except for late-presenting women (after 28 weeks). Women should be encouraged to continue combination (c)ART post-delivery but, where they chose to stop cART, a further resistance test is recommended to ensure that mutations are not missed with reversion during the off-treatment period.	1D
5.2.3	In women conceiving on cART there should be a minimum of one CD4 cell count at baseline and one at delivery.	2D
5.2.4	In women who commence cART in pregnancy, a CD4 cell count should be performed as per routine initiation of cART with the addition of a CD4 count at delivery even if starting at CD4	1C

	>350 cells/mm^3.	
5.2.5	In women who commence cART in pregnancy, an HIV viral load should be performed 2–4 weeks after commencing cART, at least once every trimester, at 36 weeks and at delivery.	1C
5.2.6	In women commencing cART in pregnancy, liver function tests (LFTs) should be performed as per routine initiation of cART and then with each routine blood test.	1C
5.2.7	In the event that a woman who has initiated cART during pregnancy has not suppressed plasma viral load to <50 HIV RNA copies/mL, the following interventions are recommended: • Review adherence (including a full exploration of potential impacting factors) and concomitant medication; • Perform resistance test if appropriate; • Consider therapeutic drug monitoring (TDM); • Optimise to best regimen; • Consider intensification.	1C

Section 6. Current issues on the use of ART in pregnancy and pregnancy outcomes

6.1 Conceiving on cART

6.1.1	It is recommended that women conceiving on an effective cART regimen should continue this treatment.	1B
	Exceptions are: Non-standard regimens, for example protease inhibitor (PI) monotherapy; Regimens that have been demonstrated to show lower pharmacokinetics in pregnancy such as darunavir/cobicistat and elvitegravir/cobicistat, or where there is an absence of pharmacokinetic data such as raltegravir 1200 mg once daily (od) (should be administered 400 mg twice daily [bd]). These should be modified to include (depending on tolerability, resistance and prior antiretroviral history) one or more agents that cross the placenta. A woman planning a pregnancy and/or conceiving on dolutegravir should see her physician as soon as possible to discuss current evidence on neural tube defects (see section 6.5).	2D
6.1.2	Women taking dolutegravir who are trying to conceive or in the first trimester of pregnancy (<12 weeks' gestation) should be recommended to take folic acid 5 mg od (see section 6.5).	1B
	Women on regimens that do not contain dolutegravir should take the standard recommended dose of folic acid 400 µg od, unless they meet the criteria for a higher dose of folic acid (see NICE guidance on maternal and child nutrition: https://www.nice.org.uk/guidance/ph11). It is recommended that all women start folic acid supplementation before pregnancy and continue to 12 weeks' gestation (the end of the first trimester).	