Healthcare Services (Cord Blood Banking Service) Regulations FAQ

Table of Contents

General

1. Who is required to hold a cord blood banking service licence under the Healthcare Services Act (HCSA)?
• Any person or business conducting activities on the handling, processing and storage of cord blood obtained from an individual and intended for clinical use or transplant in the same or another individual is required to hold a cord blood banking service licence under the HCSA. • Hospitals which partner with cord blood banks for the collection of cord blood during delivery of the infant donor do not need to hold a cord blood banking service licence under the HCSA.

Personnel

2. Why is there a need for a separate Quality Personnel to be appointed, who shall be a different individual from the CGO, or any persons designated to fulfil CGO responsibilities? Is the qualification and/or training in Quality Management (QM) generic or healthcare-specific? Does on-the-job training count?
• The Quality Personnel will need to exercise authority over and take responsibility for the maintenance of quality systems, policies and procedures established by the CGO, and therefore shall be a different individual from the CGO. • The training and experience in QM for the Quality Personnel need not be healthcare-specific. However, relevant industry experience is preferred, for example in blood banking, tissue banking, or the clinical laboratory, • On-the-job training is acceptable.

Staff involved in provision of service

3. What would constitute an adequate number of staff to provide the service?
• The appropriate number of staff required is not prescribed as that will depend on factors such as the scale of service provision and patient load, which may vary for different licensees. Licensees are expected to make a reasonable assessment of the appropriate number of staff needed to meet the intended outcomes of the service.

4. Can a staff with less than 2 years of relevant experience perform tasks? What does "close supervision" of a staff member with less than 2 years of relevant experience entail?

- Yes, a staff with less than two years of relevant experience can perform tasks so long as the staff does so under the close supervision of the CGO, or other personnel with at least two years of relevant experience.
- There should be arrangements in place whereby the CGO or a sufficiently experienced staff member can effectively monitor and guide the less experienced staff member in performing cord blood banking activities as appropriate. The extent of supervision required (e.g. providing direct supervision on-site, or remaining contactable to give guidance when needed) should be determined by the supervisor based on an assessment of the particular staff's level of competency.

Donor recruitment, evaluation and collection

5. When should consent of the mother of the infant donor be obtained?

- Express written consent of the mother for the donation of cord blood must be obtained before the mother is in active labour.

6. What are the elements required in the taking of informed consent?

- The information discussed with the mother of the infant donor as part of consent taking should at minimum include the following:
    a. Purposes for which the cord blood is collected (i.e. whether the cord blood will be stored for family use or donated for public use);
    b. The cord blood may be donated for research or disposed (as appropriate) if the mother or infant donor no longer intends to bank the unit;
    c. The screening process, such as disclosure of lifestyle, medical, genetic, travel history of the mother, and the mother's immediate family;
    d. The relevant medical history of the infant donor's father and his immediate family, where available;
    e. Explanation of the procedure by which cord blood will be collected e.g. *in utero* or *ex utero*, and related activities;
    f. Benefits and limitations of cord blood in current and possible future clinical application substantiated by prevailing evidence available (e.g. the medical indications for which cord blood transplant is proven effective as a treatment);

g. The right to withdraw consent for the collection of cord blood without prejudice at any time before delivery;

h. Tests performed on the cord blood and mother's blood samples to assess suitability of cord blood for use (which must include potency testing), the expected turnaround time and mode of communication of any abnormal test results (including incidental findings) to the mother and/or her physician (where the mother has consented), and that reference samples shall be stored for future testing;

i. The disposition of the cord blood (i.e. whether to be stored or discarded), should the cord blood be tested to be of low potency, or found to be contaminated after testing.

j. Any possible risks, adverse reactions and potential future complications to the mother and/or infant donor;

k. The extent to which information identifying the mother and infant donor will be kept confidential;

l. Regulatory obligations of the cord blood bank and the regulatory agencies involved, e.g. mandatory reporting of infectious disease results to the Ministry;

m. Disclosure of any conflict of interest (e.g. between the cord blood bank and the person taking informed consent, physician in charge.);

n. If the cord blood unit may potentially be used for reasons other than the primary intent of clinical transplantation (e.g. research), this shall be fully disclosed and the consent shall be approved by relevant Institutional Review Board or ethics board in accordance with any prevailing local law.

Evaluation and screening of donors etc.

7. What should the mother of the infant donor be screened for?

- Screening of mothers include whether there is risk to the mother/ infant donor in donating cord blood, based on the mother's medical history and any potential high-risk behaviour, as well as the medical history of the egg donor in the case of donor-received children.
- The mother should also be minimally screened for the following infectious diseases: Human Immunodeficiency Virus, Hepatitis B, Hepatitis C, Syphilis, Human T-cell lymphotropic virus (both types I and II) and Cytomegalovirus (CMV).

8. If the mother of the infant donor screens positive for any of the diseases, there may be release of the cord blood on exceptional grounds if the CGO is satisfied that there is clinical indication and urgency for its use. What are some of these exceptional circumstances?

- Cord blood from an infant donor whose mother who is screened positive for any of the diseases stipulated above may be distributed for autologous use only. The only exception is CMV as its seroprevalence in the local population is high[1] and exposure to CMV is related to the frequency of transfusion[2]. For allogenic usage of CMV positive products, recipients shall be counselled, with written consent taken, prior to use of these products.
- CMV positive products do not require segregated storage, and is not an exclusion criterion for cord transplant. However, CMV is still tested for in both mother and recipient as there is a risk of CMV infection reactivating / developing after cord blood transplantation.
- The CGO should decide whether such exceptional circumstance exists after considering all facts surrounding the case (e.g. views of the clinician attending to the patient receiving the cord blood).

9. Do the regulations apply to both autologous and allogenic distribution, and are there any further requirements specifically for allogenic units and usage?

- The regulations apply to both autologous and allogenic distribution.
- CMV positive units to be distributed for allogenic usage will require additional recipient counselling and consent taking. In addition, unless there is an urgent medical need (e.g. where no comparable cellular therapy product is available in the situation, and the recipient is likely to suffer death or serious morbidity without the cord blood unit), units are prohibited to be distributed for allogenic usage if information on donor eligibility is incomplete.

Collection of cord blood

10. A cord blood banking licensee must ensure that cord blood is collected in a manner that is safe for the infant donor and his mother. What does this entail?

- There should be documentation that cord blood collection is conducted within acceptable obstetric practices and in the patients' best interest.
- Cord blood collections *in utero* shall only be obtained from infant donors after a minimum of 34 weeks' gestation. Related cord blood collected *in utero* at

[1] Leong, H., Tan, B., Lim, S., & Chan, K. (2010). Seroprevalence of human cytomegalovirus infection in Singapore. International Journal Of Infectious Diseases, 14, e475. doi: 10.1016/j.ijid.2010.02.673
[2] NetCord-FACT International Cord Blood Standards Accreditation Manual, Seventh Edition (2020)

less than 34 weeks' gestation shall be based on an evaluation of infant donor safety by the healthcare professional delivering the infant donor.

Processing, testing and quarantine

11. There should be tests on cord blood units to determine their safety, viability and integrity. What tests are required?

- Tests should be performed on an appropriate sample of a cord blood unit. These include:
    a. ABO group and Rh type;
    b. Human Leukocyte Antigen (HLA) testing on all product intended for allogeneic use;
    c. HLA class I and II typing on all products designated for possible allogeneic use by DNA-based methods and the verification of HLA typing results is performed on a thawed segment or thawed representative sample; and
    d. Sterility testing from a representative sample of the final cord blood unit after processing using a system validated for the growth of aerobic and anaerobic bacteria and fungi.
- The sample of cord blood after processing (but before the addition of cryoprotectant) should also be tested for total nucleated cell count and its viability, total CD34 cell and its viability, nucleated red cell count or corrected total nucleated cell count, and colony-forming unit or validated functional assay.

12. Can I outsource testing of the cord blood to other providers? What about other cord blood banking activities?

- A licensee may outsource testing of the cord blood to other clinical laboratories and cord blood banks licensed under the HCSA, or overseas clinical laboratories and cord blood banks accredited, certified or licensed by any of the following organisations:
    a. American Society of Histocompatibility and Immunogenetics (ASHI);
    b. European Federation for Immunogenetics (EFI);
    c. College of American Pathologists; or
    d. Any comparable accreditation body acceptable to the Director.
- A licensee may outsource donor recruitment as well. **However, core cord blood banking activities, namely processing, storage and distribution, should <u>not</u> be outsourced, except for the purposes of business continuity planning.**

- For any outsourced activity, the licensee is expected to retain oversight and remain ultimately responsible for compliance with the relevant Regulations and ensuring donor safety and welfare, as well as the safety and quality of the cord blood.

Re-identification and notification of infant donors and their respective mothers in the event of abnormal or incidental findings

13. What are incidental findings?

- Incidental findings are observations or other findings that may be picked up during a test which are beyond the primary objectives of the test, and may have potential health or reproductive importance to the infant donor or the mother.
- Incidental findings differ from abnormal findings, which are observations or other findings that arise as a result from the primary objectives of the test.

14. Am I expected to follow-up with a donor if there are abnormal or incidental findings from the screening or tests conducted?

- The licensee should first inform the mother of the infant donor of all the necessary tests to assess the suitability of the cord blood for use, and thereafter establish and implement a process to ascertain whether the mother consents to:
  a. The mother or the infant donor being re-identified and informed about any abnormal or incidental findings; and,
  b. Informing the medical practitioner caring for the mother about any abnormal or incidental findings.
- The licensee should then follow up and inform the mother, and the attending medical practitioner (where the mother has consented), of any incidental findings accordingly.