Ministry of Health & Population
National AIDS Program
Arab Republic of Egypt

Infection Control Practices Assessment Tool For Blood Banks

fhi Family Health International
Impact Implementing AIDS Prevention and Care Project

USAID

Development of this tool was a fully collaborative effort with the Egyptian Ministry of Health and Population (MOHP), Family Health International (FHI) and the United States Agency for International Development (USAID). This activity was funded through FHI's Implementing AIDS Prevention and Care (IMPACT) Project, Cooperative Agreement HRN-A-00-97-00017-00.
The views expressed in this document do not necessarily reflect the views of USAiD.

Ministry of Health & Population
National AIDS Program
Arab Republic of Egypt

Infection Control Practices Assessment Tool For Blood Banks

Contributors

Universal Precautions Task Force

Dr. Helmy Salah El Din – MOHP

Dr. Mary Salama – FHI Consultant

Dr. Ayat Selim – MOHP

Dr. Sherine Shawky – FHI Consultant

Dr. Frank Mahoney – NAMRU-3

Dr. Caroline Bodenschatz – NAMRU-3

Mr. Patrick Haenggi – NAMRU-3

Dr. Gina Dallabetta – FHI

Dr. Cherif Soliman – FHI

Technical Reviewers

Prof. Dr. Salwa Youssef – MOHP

Dr. Emad Yanni – USAID

Dr. Amr Kandil – MOHP

Ms. Dina Khaled – FHI

Acknowledgements

The Ministry of Health and Population (MOHP) acknowledges the valuable efforts made in developing this tool for the assessment of infection control practices in blood banks. Special thanks are due to the members of the investigating team and the field workers that pre-tested this tool in the field.

Gratitude is due to the MOHP personnel in the General Directorate of Blood Affairs, the National Blood Transfusion Services and the blood banks included in the pre-testing of this tool.

Great thanks are also due to the United States Agency for International Development (USAID) for their support of blood safety and to Family Health International (FHI) for their technical efforts in the development and production of the assessment tool.

These activities were a fully collaborative effort between the Egyptian MOHP, USAID and FHI.

Dr. Helmy Salah El Din
Director
General Directorate of Blood Bank Affairs
Ministry of Health and Population

Acronyms

BB	Blood Bank
ELISA	Enzyme-linked immunosorbant assay
FHI	Family Health International
HBs Ag	Hepatitis B surface antigen
HBV	Hepatitis B Virus
HCV	Hepatitis C Virus
HIV	Human Immunodeficiency Virus
IC	Infection Control
IMPACT	Implementing AIDS Prevention and Care
MOHP	Ministry of Health and Population
NBTC	National Blood Transfusion Center
NBTS	National Blood Transfusion Services
NGO	Non Governmental Organization
Ob/Gyn	Obstetric and Gynecology
SOPs	Standard Operating Procedures
USAID	United States Agency for International Development
WHO	World Health Organization

Introduction

Blood bank activities have always focused on the blood testing procedures performed, while little overall attention has been paid to infection control practices and the application of universal precautions. In the past, knowledge and practices regarding universal precautions were rarely assessed. In order to fill this gap, Family Health International (FHI) has provided technical assistance to the Ministry of Health and Population (MOHP) in conducting an assessment of universal precautions throughout 21 blood banks (BB) in Egypt. This activity was implemented under the Implementing AIDS Prevention and Care (IMPACT) Project, being funded by the United States Agency for International Development (USAID). Since 1998, the IMPACT Project has been working in Egypt to improve blood safety, promote universal precautions, perform disease surveillance, and expand HIV/AIDS prevention and care activities. The importance of infection control (IC) practices has been raised after establishing an Infection Control Program as a separate activity within the MOHP in Egypt. This program raised awareness for the need to assess the circumstances and practices that may cause the transmission of blood borne pathogens within health care settings, including blood banks. FHI and the MOHP are working to gain a deeper understanding of the current activities and practices related to universal precautions in blood banks. Results of this activity will be used as a guide for future interventions to promote blood donation and ensure blood safety, as well as the safety of staff, blood donors and recipients alike.

Two different research tools were used: the “blood bank questionnaire” and “health care worker questionnaire”. Experts from the MOHP General Directorate of Blood Affairs (GD), Infection Control Program, NAMRU-3 and FHI revised the tools. Three physicians from the GD, experienced in blood bank procedures, were trained by FHI to perform the study. The tools were pre-tested for comprehensibility and appropriateness in the Shoubra General Hospital Blood Bank in Cairo and Boulak El Dakrour General Hospital Blood Bank in Giza during June 2002. Changes were made based on findings of the pre-tests.

Below is a description of the various uses of this tool.

- Assessing the infection control-related activities in blood banks:
    - Location of blood banks
    - Orientation and training activities
    - Infection control practices
    - Blood donation activities
    - Blood screening activities
    - Blood bank laboratory activities
    - Disposal of reactive units and biohazardous waste
    - Blood and blood product storage procedures
    - Availability of resources and supplies
    - Information systems
- Assessing the infection control related activities of blood bank staff:
    - Staff training
    - Staff knowledge
    - Staff practices
    - History of occupational exposure
    - Prevalence of hepatitis B vaccination

Blood Bank Questionnaire

Date: ..... Interviewer name: .....

Governorate: ..... Name of Hospital/BB: .....

Number of beds: .....

Interview with the Director of the Blood Bank

Name : .....

Title: Physician ☐ Chemist ☐ Technician ☐ Others (specify) _____

Status of BB: Main Blood Bank ☐ District Blood Bank ☐ Storage Blood Bank ☐

1. What are the activities of your blood bank?

	Yes	No
Donation	☐	☐
Screening	☐	☐
Component preparation	☐	☐
Blood grouping & cross matching	☐	☐
Therapeutic transfusion	☐	☐

2. Is the blood bank a separate department inside the hospital? ☐ ☐
   If no, is it shared by: Laboratory ☐ ☐
   Other departments (specify) _____

3. How many rooms available in the blood bank? _____

4. Staff (Number of staff in each shift)

		Shift		
		Morning	Afternoon	Night
Doctors:	- Specialists			
	- Residents			
	- General practitioner			
Chemists				
Technicians				
Nurses				
Other Staff (specify)				

		Yes	No
5. Do you have any orientation programs for new staff?		☐	☐
6. Do you have any training programs for new staff?		☐	☐
7. If yes, where?	In the blood bank	☐	☐
	Outside the blood bank	☐	☐
8. Are there any records maintained on occupational exposures (needle stick or sharps injury)? If yes, review records.		☐	☐
9. Is there a written policy for post-exposure procedures? (can we see it?)		☐	☐
10. Are there any person(s) responsible for infection control in the facility? If yes, who are the members:		☐	☐
	Hospital Director	☐	☐
	Head of surgery department	☐	☐
	Head of Ob/Gyn department	☐	☐
	Head of dentistry department	☐	☐
	Head nurse of the hospital	☐	☐
	Supervisor of housekeepers	☐	☐
	Head of pharmacy	☐	☐
	Director of laboratory	☐	☐
	Director of central supply	☐	☐
	Financial & administrative director	☐	☐
11. Do you have written guidelines on safety and infection control in the blood bank? (can we see it?)		☐	☐
12. What kind of blood donations do you collect?			
	Voluntary non-remunerated	☐	
	Voluntary remunerated	☐	
	Family replacement	☐	
	Directed	☐	
	Obliged	☐	
	Paid	☐	
13. Do you have written donor selection criteria? (can we see it?)		☐	☐
14. Is a blood donor questionnaire available? (can we see it?)		☐	☐
15. Do you have a donor record? (can we see it?)		☐	☐
16. Do you have mobile donor clinic sessions?		☐	☐

	Yes	No
17. If yes, where do you go?		
Schools	☐	☐
Colleges	☐	☐
Factories	☐	☐
Gardens	☐	☐
Stadiums	☐	☐
Book fair	☐	☐
Others (specify)_____		
18. Is there a tap with running water for hand washing available near these outside sessions?		
Always	☐	
Sometimes	☐	
Never	☐	
19. Do you return waste from mobile sessions to the blood bank?	☐	☐

Donation Area

Observation

20. Is donation area used only for donation?	☐	☐
21. Are any educational materials, leaflets or posters seen in the donor area?	☐	☐
22. Are any guidelines or Standard Operating Procedures (SOPs) available?	☐	☐
23. Is there a separate clean area for preparing bleeding process materials?	☐	☐
24. Is blood contaminated material visible?	☐	☐
25. Mention available material for waste		
Safety box for sharps	☐	☐
Container with disinfectant for glassware	☐	☐
Container for fluid waste	☐	☐
Leak proof waste basket	☐	☐
Others (specify)_____		
26. Does staff wash his/ her hands before examining donors?	☐	☐
27. Does staff wear gloves?	☐	☐

	Yes	No
28. If yes, does staff change gloves between donors?	☐	☐
29. Does staff reuse lancets for more than one donor?	☐	☐
30. Is venipuncture site disinfected?	☐	☐
31. If yes, what did staff use for disinfection?		
70% alcohol	☐	☐
Betadine	☐	☐
Others (specify) _____		
32. What was the procedure done?		
Circular	☐	☐
One direction	☐	☐
33. How was the procedure done?		
Once	☐	☐
Several times	☐	☐
34. Is a closed system applied during blood collection?	☐	☐
35. Is a new bag used for each venipuncture?	☐	☐
36. Does staff recap needles after the donation procedure?	☐	☐
37. Was blood bag labeled with:		
Donation number	☐	☐
Donation date	☐	☐
Expiry date	☐	☐
38. Was venipuncture site covered with bandage after donation?	☐	☐
39. Are sharps & needles appropriately disposed?	☐	☐

40. General comments on observation

_____

_____

_____

_____

_____

Discussion with Person in Charge of Donation Area

41. What do you do in case of shortage of test kits to screen?

	HIV		HBs Ag		HCV		Syphilis	
	Yes	No	Yes	No	Yes	No	Yes	No
Stop issuing blood	☐	☐	☐	☐	☐	☐	☐	☐
Perform rapid test	☐	☐	☐	☐	☐	☐	☐	☐
Pooling of several samples	☐	☐	☐	☐	☐	☐	☐	☐
Send sample tubes to other lab for screening	☐	☐	☐	☐	☐	☐	☐	☐
Issue blood without testing	☐	☐	☐	☐	☐	☐	☐	☐
Others (specify)	☐	☐	☐	☐	☐	☐	☐	☐

42. What do you do in case of initially reactive test results?

	HIV		HBs Ag		HCV		Syphilis	
	Yes	No	Yes	No	Yes	No	Yes	No
Repeat the test	☐	☐	☐	☐	☐	☐	☐	☐
Results accepted	☐	☐	☐	☐	☐	☐	☐	☐

43. What is done with repeatedly reactive samples & blood units?

	Yes	No
Refer specimens for confirmation	☐	☐
Discarded in general waste	☐	☐
Autoclaved only	☐	☐
Autoclaved then incinerated	☐	☐
Incinerated only	☐	☐
Bag opened and emptied	☐	☐
Bag opened & emptied with disinfectant	☐	☐
Sent to another hospital for incineration	☐	☐
Buried	☐	☐
Others (specify)_____		

44. What is done with the confirmed negative blood units?

Used	☐	☐
Treated as positive	☐	☐

	Yes	No
45. Is there a record of the discarded blood units? (If yes, please review the record)	☐	☐
46. Do you routinely notify donors of positive screening results?		
HIV	☐	☐
HBs Ag	☐	☐
HCV	☐	☐
Syphilis	☐	☐
47. Do you report HIV positive results to MOHP?	☐	☐
48. What is done with biohazardous waste?		
Discarded in general waste	☐	☐
Emptied in sink	☐	☐
Discarded in a container with disinfectant	☐	☐
Incinerated	☐	☐
Others (specify) _____		
49. Is there a functioning hot air oven in the blood bank?	☐	☐
50. Is there a functioning incinerator in the facility?	☐	☐
51. Do you have frequent shortages of water?	☐	☐
52. Do you have frequent power supply shortages?	☐	☐
If yes, for how long? < 30 minutes	☐	☐
> 30 minutes	☐	☐
If > 30 minutes what do you do? _____		
53. Is there an emergency power supply in case of power failure?	☐	☐
54. Do you use cool boxes for transporting blood units?	☐	☐
55. Do you perform routine maintenance of equipment?	☐	☐
If yes, do you record it?	☐	☐

Discussion with Person in Charge of Blood Bank Laboratory

56. What screening technique do you use routinely:

	ELISA	Rapid	Other	None
HIV	☐	☐	☐	☐
HBV	☐	☐	☐	☐
HCV	☐	☐	☐	☐
Syphilis	☐	☐	☐	☐
Others (specify) _____				

57. What screening technique do you use in emergencies:

	ELISA	Rapid	Other	None
HIV	☐	☐	☐	☐
HBV	☐	☐	☐	☐
HCV	☐	☐	☐	☐
Syphilis	☐	☐	☐	☐
Others (specify) _____				

	Yes	No
58. Do you use quality control samples other than the controls supplied with the kits?	☐	☐
59. How often do you encounter an assay failure?		
Rarely	☐	
Sometimes	☐	
Never	☐	
60. What do you do in case of assay failure?:		
Test repeated	☐	☐
Test repeated by another staff	☐	☐
Others (specify) _____		
61. Are assay failures recorded?	☐	☐
62. Do you reuse tubes, pipette tips, slides, etc..?	☐	☐
63. If yes, how are they cleaned?		
Water	☐	☐
Water & soap	☐	☐
Disinfectant	☐	☐
Hot air oven	☐	☐
Autoclave	☐	☐
Others (specify) _____		
64. Is there a functioning water distiller?	☐	☐
65. Are units randomly cultured for bacterial contamination?	☐	☐

Laboratory Area

Please observe procedures done (Y= Yes, N= No, N/A= Not applicable, X=Not observed).

Procedure	Screening	Grouping & X-matching	Component Preparation
66. Safety & Infection Control guidelines displayed			
67. SOPs (standard operating procedures) available			
68. Non-authorized persons present			
69. Staff wearing lab coats/uniforms			
70. Sink with running water available			
71. Soap for hand washing available			
72. Available materials for waste disposal			
Safety box for sharps			
Container with disinfectant for glassware			
Container for fluid waste			
General waste basket			
Others (specify)			
73. Visible blood contaminated materials e.g. gauze, cotton, etc.			
74. Food or drink seen			
75. Working surface cleaned before starting the procedure			
76. If cleaned, with what?			
Chlorox			
Alcohol			
Savlon			
Water only			
Others (specify)			

77. Staff wears gloves during procedure			
78. Gloves worn outside work place			
79. Expiry dates of kits/reagents checked			
80. Equipment checked before procedure			
81. Samples clearly labeled			
82. Mouth pipetting observed			
83. Test results recorded			
84. Working surface cleaned after finishing the procedure			
85. If cleaned, with what?			
Chlorox			
Alcohol			
Savlon			
Water only			
Others (specify)			
86. Staff washes hands after procedure			

87. General comments on observation

Storage Area

Please check all refrigerators & freezers in the blood bank (Y= Yes, N= No, N/A= Not applicable).

Refrigerators/Freezers	Blood Bank Refrigerator				Domestic Refrigerator				Freezer	
Number										
Number functioning										
88. Location										
	1	2	3	4	1	2	3	4	1	2
89. Test kits/reagents										
90. Blood samples										
91. Blood products										
92. Food or drink										
93. Blood spills										
94. Thermometer inside										
95. Read & record temperature										
96. Any expired kits/ reagents										
97. Any expired blood units										
98. Screened units separate from unscreened										
99. Cross matched separate from stock										
100. Screening results labeled on units										
101. Positive blood units separated from the stock										

102. Temperature chart recorder										
103. Temperature chart on door										
104. Alarm system										
105. Inventory list with expiry dates										
106. Emergency power supply										
107. Record of times door opened										

108. Comments

Availability of Test Kits

	HIV	HBs Ag	HCV	Syphilis
109. Number available				
110. Type				
111. Number of expired kits				

Discussion with Person in Charge of Supplies

		Yes	No
112.	Do you have a system for stock control? (If yes, please see the list)	☐	☐

113. Please comment on availability:		all the time	sometimes	not available
Lab coats		☐	☐	☐
Gloves		☐	☐	☐
Needles		☐	☐	☐
Lancets		☐	☐	☐
Tubes		☐	☐	☐
Pipette tips		☐	☐	☐
Cotton		☐	☐	☐
Alcohol		☐	☐	☐
Blood bags		☐	☐	☐
Reagents		☐	☐	☐
Kits:	HBV	☐	☐	☐
	HCV	☐	☐	☐
	HIV	☐	☐	☐
	Syphilis	☐	☐	☐
Disinfectants		☐	☐	☐
Sharps boxes		☐	☐	☐
Leak proofed waste container		☐	☐	☐

Others (specify)_____

Data from Blood Bank Records

Please complete the following table upon examining blood bank records.

Month	# of donors	# bags screened	# with pos. screening test	Units Issued
January				
February				
March				
April				
May				
June				
July				
August				
September				
October				
November				
December				

Health Care Worker Questionnaire

Date: ---------- Governorate: ----------

Name: ---------- Name of Hospital/BB: ----------

Job:

Physician ☐ Chemist ☐ Nurse ☐ Technician ☐

Clerk ☐ Driver ☐ Housekeeper ☐

Others (Specify) _____

1. Have you received any training on blood bank activities during the past year?
   If yes, by whom:

	Yes	No
MOHP	☐	☐
WHO	☐	☐
NGO	☐	☐
NBTC	☐	☐
Others _____		

2. Have you received any training on infection control during the past year?
   If yes, by whom:

MOHP	☐	☐
WHO	☐	☐
NGO	☐	☐
NBTC	☐	☐
Others _____		

3. Have you received Hepatitis B Vaccine (HBV)? ☐ ☐
   If yes, is it completed? ☐ ☐

4. Are gloves available in the Blood Bank?

Always	☐
Sometimes	☐
Never	☐

5. What kind of gloves are available?

Latex	☐	☐
Plastic	☐	☐
Rubber	☐	☐
Others _____		

6. Do you always wear gloves when there is potential for exposure to blood? (e.g. finger sticks, venipuncture, lab procedures, handling blood products, collecting waste, etc.)? Yes ☐ No ☐

7. If no, why don't you wear gloves during these procedures?

Not available	☐	☐
Allergic to gloves	☐	☐
Loss of sensation	☐	☐
Others (specify)_____		

8. Have you encountered any needle stick injuries? (or any occupational exposure e.g. eye splashes, cuts, wounds, etc.) ☐ ☐

If yes:

9. How many times?_____

10. How did it occur?

During two handed recapping	☐	☐
During lab procedures	☐	☐
During collecting waste	☐	☐
Others (specify)_____		

11. What service was offered to you?

Inform supervisor	☐	☐
Referral	☐	☐
Follow up	☐	☐
Immunoglobulins	☐	☐
Nothing was done	☐	☐
Others (specify)_____		

12. Do you think you can become infected through contact with blood? ☐ ☐

13. If yes, what kind of infection?_____

14. Do you know that some infections are dangerous? ☐ ☐

Comments:_____