

BLOOD BANK'S ENVIRONMENT ASPECTS AND IMPACTS



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ABSTRACT

There has been growing concern regarding the reduction of energy and water use and recycling of solid waste in medical facilities. Medical facility managers evaluating environmental impacts of their organization have always considered control of infectious waste as a significant potential impact in the area of natural resource contamination and human health and safety. However, in order to accurately determine environmental impacts of a medical facility an evaluation of the medical center's environmental aspects and impacts are needed.

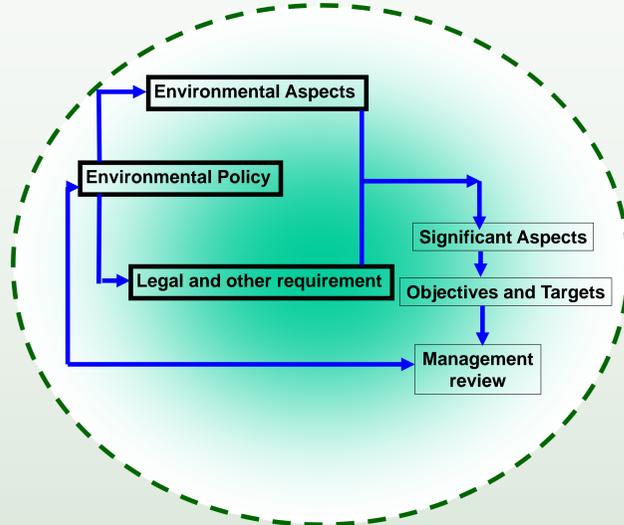
An environmental aspect is an element of an organization's activities, products or services that can interact with the environment. The identification of environmental aspects is an important step towards recognizing an organization's impacts on the local community, the country, and the world. Identification of an organization's impacts is necessary in setting and formulating objectives, targets, and other programs that may be directed towards solving environmental problems.

From the desire to maintain the Centre Regional de Transfusion Sanguine (CRTS) of Rabat's leading position in controlling the impacts of its activities on its surroundings stemmed the aspiration to establish an Environmental Management System following the structure of ISO 14001-2004 international standard. Developing an EMS will help the Blood Bank assess and manage the environmental impacts its activities have on the environment. Having an EMS in place will also help the Blood Bank investigate its activities, develop a more detailed understanding of their processes, and establish objectives and targets that are related to the facility's long-term environmental plan.

The goal of this research was to identify and monitor the activities, products and services with CRTS department. First, a list of all the CRTS departments was created along with a description of their activities. Then, department managers and employees provided input to determine each department's aspects and impacts. An aspects and impacts ranking matrix was developed using a modified ranking method of the U.S. Veteran's Administration's Green Environmental Management System.

Once the CRTS environmental aspects and their associated impacts were identified the CRTS evaluated the environmental significance of each of the impacts using the ranking matrix. The results of the CRTS aspects and impacts ranking process demonstrated that integration of an EMS in blood transfusion centers was a needed step in creating strategies to reduce a medical center's environmental impact.

EMS Structure



Identification of Aspect/Impact in a Blood Bank

Aspects are defined as those operations or activities over which all the blood bank sites has either control or significant influence and which have the capacity to affect the environment.

Impacts are defined as the effects upon the environment, positive or negative, which the environmental aspects of the operations and activities produce

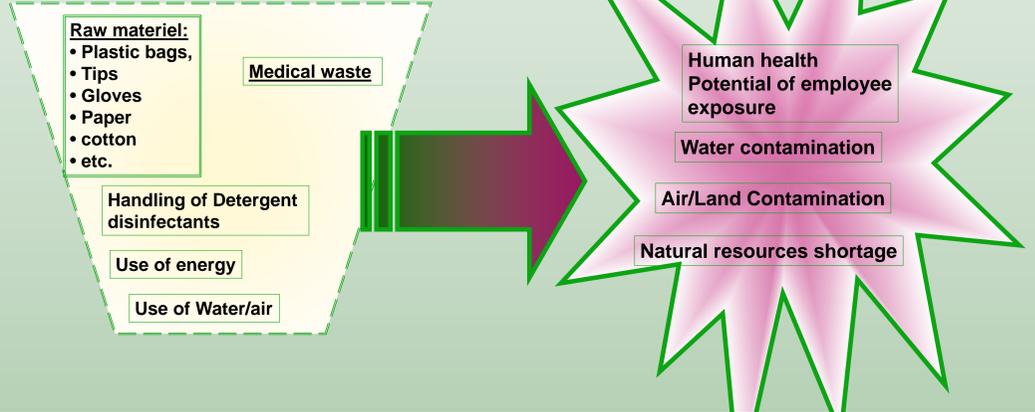
Activity 1 : Chemical Storage

Aspect: Overflow from tanks
Impact: Water pollution, soil contamination, ground water pollution, contamination, air pollution
Control (s): Training, inspection

Activity 2 : Packaging of final product

Aspect: Wastage of cardboard boxes
Impact: Resource depletion
Control (s): Recycling, reuse containers

Blood bank's Aspects



Explanation of Aspects and Impacts Template Scoring *

Compliance

The extent to which the aspect is regulated by law, regulation, Executive Order or other requirement	Score Assigned
The aspect is not regulated or is in full compliance.	0
Compliance activity has been initiated.	1
Compliance activity has been scheduled.	2
There is an awareness of non-compliance status, considering compliance options.	3
The aspect is out of compliance and the Centre has taken no compliance activity to date.	4

Risk

The degree of risk to any exposed human populations or exposed ecosystems	Score Assigned
Minor risk to human population and/or ecosystems.	0
Moderate risk to sensitive human populations and/or ecosystems.	1
Moderate risk to general human populations and/or ecosystems.	2
High risk to sensitive human populations and/or ecosystems.	3
High risk to the general human population and/or ecosystems.	4

Frequency

Frequency that this activity occurs	Score Assigned
< Once per calendar year	0
Biannually or less	1
Monthly	2
Weekly	3
Daily or more	4

Control

The extent to which the aspect is under control of the Medical Center	Score Assigned
Blood Center has no control or influence.	0
Blood Center has some influence or control.	1
Blood Center has influence party with other entities with some level of control.	2
Blood Center has significant influence.	3
Blood Center has total control over this aspect.	4

* Modified from US Veterans Administration Aspects Ranking

Some Results

Blood Bank Department	Activities	Environmental Aspect	Environmental Impact	Compliance	Risk	Frequency of Activity	Total Score	Control	Significant Aspects **🔔**
Virology Laboratory	Screening for blood transmissible diseases	Medical waste	Soil Water Contamination human health due to improper handling/disposal	0	4	4	8	2	6
		Handling of infected blood	Potential of employee exposure	0	4	4	8	2	6
		Generation of infected solid waste	Contamination of Air/Land	0	4	4	8	2	6
	Operation of equipment	Use of energy	Use of natural resources	0	1	3	4	2	2
	Chemical use	Waste water discharge	Water contamination	0	1	3	4	1	3
	Chemical Storage	Potential of spills	Contamination of Soil/ Water	0	1	1	2	1	1
	Cleaning and disinfecting surfaces and equipment	Detergent disinfectants	Potential employee/ patient exposure	0	1	2	3	1	2
Purchasing Department	ordering the supplies requested by the other departments	Energy use	Use of Natural resources	0	2	1	3	3	0
	receiving and storing the supplies once delivered	Potential for spills in the case of accidents	land/ water contamination	0	1	1	2	2	0

🔔 The total of the scores will determine which environmental aspects are significant and, therefore, require detailed operational controls. The Blood Bank Environment Committee will establish the significant aspect cut-off score after review.

Environmental aspects and impacts will be re-evaluated whenever there are significant changes in materials, activities, procedures or other legal requirements (at least annually)

Conclusion : Good Environmental Management

1. Reduce liability and risk
2. Minimize waste and energy bills
3. Facilitate better business processes
4. Improve compliance
5. Enhance Blood bank's reputation
6. Gain Blood Donors' recognition
7. Improve employee safety
8. Gain marketing potential
9. Gain International recognition