

Environmental Mitigation and Monitoring Plan



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September, 2010

1. Introduction

In Africa, a number of community-based and small scale healthcare activities such as indoor residual spraying (IRS), immunization posts, reproductive health posts, urban clinics, and small hospitals provide important healthcare services to individuals and communities which might otherwise have little or no access to such services. They are the front lines of defense against epidemics such as AIDS, malaria and other infectious diseases like measles and cholera.

In most parts of Africa, the management of healthcare waste occurring in small-scale facilities is often insufficient. Training and supplies are minimal. It is common practice in urban areas to dispose of healthcare waste along with the general solid waste or to bury it without treatment in unlined pits. In some small hospitals, there is incineration of waste in dedicated on-site incinerators, but sites often fail to operate them properly. Unwanted chemicals like those used in IRS may be dumped carelessly without following WHO recommended procedures.

The transmission of disease waste is the greatest and most common threat from infectious healthcare waste. If not treated in a way that destroys the pathogenic organism, dangerous quantities of microscopic disease-causing agents will be present in the waste. These agents can enter the body through punctures and other breaks in the skin.

Chemicals used in IRS can be hazardous to individuals and the environment. These chemicals may be toxic, corrosive, flammable and reactive. If these chemicals or the waste are disposed of in unlined landfills, these wastes may contaminate ground and surface water especially when large quantities are disposed.

In Zambia, safe waste disposal practices need further development and strengthening. In 54 districts, there are IRS activities and most of the remaining 18 districts have community-based healthcare activities. It is against this background that the Zambia Integrated System Strengthening Program (ZISSP) has proposed an environmental mitigation and monitoring plan to improve waste management practices and recommend procedures that reduce the risk at the least cost.

2. Objective

To develop an environmental mitigation and monitoring plan that reduces risk and provides guidance on healthcare waste and chemical disposal at the least cost.

3. Environmental Compliance in IRS

Indoor residual spraying (IRS) involves use of insecticide which may be hazardous to the spray operators. Therefore the safety of IRS personnel in the field is vital. To assure safety, it is important that there is appropriate personal protective equipment (PPE) for the spray operators. The personal protective equipment should conform to WHO Pesticide Evaluation Scheme (WHOPES) specifications. ZISSP will assure that PPEs are procured and distributed through the channel specified by USAID and PMI. The PPEs will be sufficient to assure that spray operators are well protected. ZISSP will work with the National Malaria Control Centre (NMCC) to ensure that PPEs are correctly used. This will be enforced during trainings of both supervisors and spray operators.

To ensure that emerging issues are incorporated in the guidelines, ZISSP will support NMCC to review and print the following guidelines to support environmentally sound IRS practices:

- IRS DDT Guidelines
- Guidelines for Sound Management of IRS Insecticides
- Environmental Safeguards and Storage for IRS

These guidelines will be printed and disseminated to all stakeholders

ZISSP will work with the DMOs to ensure that the responsible use of insecticides for the IRS program by ensuring that procedures for handling insecticides are adhered to as stipulated by law. ZISSP will support the ECZ in environmental monitoring as well as a supplemental environmental assessment. This is to make sure that districts implementing IRS are following the guidelines for use of insecticides.

To enable districts meet the ECZ standards, ZISSP will work with the DMOs to maintain the storage facilities in the target districts. These storage facilities will adhere to minimum standards required by ECZ and the UN Food and Agriculture Organization requirements. An Environmental Monitoring and Mitigation Plan has been developed, and is presented in Annex I. It aims to ensure compliance with environmental monitoring requirements.

ZISSP will work with the PMOs to encourage the districts to use the evaporators and soak pits which were built in most target districts. This is to ensure that insecticide waste does not find its way into the environment. It is also important to repatriate DDT wastes back to the manufacturer for safe disposal and incineration. ZISSP will support NMCC and ECZ to ensure that DDT and other insecticides are handled in a professional manner as required by both national and international regulations. ZISSP will work with NMCC to coordinate and facilitate the collection and export of DDT waste back for destruction by an approved facility in South Africa. A certificate of the destruction will be obtained for DDT waste. ZISSP will also provide support to the ECZ to conduct environmental inspections of IRS to ensure that environmental regulations are adhered to in the target districts.

4. Environmental Compliance in Child Health and Nutrition

In child health and nutrition (CHN), adherence to injection safety and disposal practices in routine immunization programs is important to minimizing the transmission of disease. ZISSP will support the DMOs to address this issue during the training of health workers in the districts as well as during supervisory visits. ZISSP will work with the DMOs to ensure that safe techniques for administering vaccines are emphasized to guarantee that both the health workers and the clients are safe. During training and supervisory visits, ZISSP will work with the DMOs to emphasize safe disposal of used syringes and needles to mitigate risk of exposure. ZISSP will support the PMOs to disseminate updates related to injection safety.

An assessment of injection safety and waste management practices conducted by the Zambia Health Services and Systems Program (HSSP) showed that most of the service providers adhered to safe injection administration practices. However, the assessment observed that disposal and incineration practices require strengthening. During the Integrated Child Health Week and Measles Supplemental vaccination exercise that usually targets 2.5 million children, ZISSP will work with DMOs to ensure that emphasis is put on good waste disposal

and incineration practices. ZISSP will also work with the PMOs and DMOs in the development of injection sharps waste management plans at all levels during training and monitoring of activities.

Integrated Management of Childhood Illnesses (IMCI) assessments examine the overall organization and environment of the health facility. ZISSP will work with the Ministry of Health (MOH) through PMOs and DMOs to assure that assessors emphasize issues of cleanliness and disposal of medically generated waste. ZISSP will support the districts to re-enforce the implementation of injection safety and disposal guidelines to improve quality of care.

5. Environmental Compliance in Integrated Reproductive Health

In reproductive health, adherence to injection safety and disposal practices in Emergency Obstetric and Neonatal Care (EmONC) and Long Term Family Planning (LTFP) activities is of paramount importance. ZISSP will work with the training institutions to address these areas during the training of health workers in EmONC and family planning as well as during supervisory visits. The issues to be emphasized include safe techniques of administering any injections (e.g. Depo Provera) to ensure that both the health worker and the client are safe. Disposal and incineration practices will be strengthened during mentorship trainings.

ZISSP will work with MOH to ensure that assessments of EmONC and FP sites in the technical support supervision visits for EmONC and LTFP include a component on improving waste management practices. These assessments look at the overall organization and environment of the health facility to support adherence to EmONC or LTFP procedures, practices and enabling environment. Therefore, ZISSP will work with DMO assessment teams to train health workers to focus on adherence to the standards for cleanliness, disposal of medically generated waste, and the performance of the health workers in injection safety. Additionally, infrastructure, including water and waste disposal, will be examined. During feedback, health workers will be able to suggest areas of improvement where gaps are identified in their health facilities. In addition to this, ZISSP will work with PMOs and DMOs to orient managers prior to training and emphasize the importance of infrastructure and adherence to standards of practice.

6. Conclusion

ZISSP will work with all partners and relevant departments of the Ministry of Health to make sure that the guidelines and procedures recommended above which aim at improving waste management and reducing risk are implemented. ZISSP will also support the Environmental Council of Zambia to ensure that all facilities in the districts implementing IRS meet the WHO guidelines on waste management and disposal.

Annex I: Environmental Mitigation and Monitoring Plan

No.	Activity	Mitigation measure(s)	Monitoring indicator(s)	Monitoring and Reporting Frequency	Party(ies) responsible
Indoor Residual Spraying					
1.	Review IRS guidelines	Incorporate emerging issues	Five volumes of IRS guidelines reviewed and updated	Annually	NMCC, ZISSP, ECZ, DHOs, PHOs
2.	License storage facilities annually by ECZ	All storage facilities need to be licensed to meet compliance	Issuance of the license by ECZ	Annually	ZISSP, ECZ, NMCC, DHOs
3.	Conduct supervision and monitoring of IRS sites (beginning, mid and end of implementation)	Compliance to guidelines, standards and procedures	Three rounds of supervision conducted and documented then analyzed in post-spray review meeting	Three times during the spray campaign	ZISSP, NMCC, DHOs, PMOs, UNZA, consultants
4.	Support NMCC conduct training in judicious use and handling of insecticides (Managers, supervisors, storekeepers, and drivers)	Compliance to guidelines, standards and procedures	Number of people trained	Annually	ZISSP, NMCC, DHOs, PMOs, UNZA, consultants
5.	Compliance inspection of storage facilities by ECZ (e.g stores, change rooms, evaporation tanks, soak pits, fire fighting equipment and thermometers)	Compliance to guidelines, standards and procedures	Compliance inspection report	Annually	ZISSP, NMCC, ECZ
6.	Waste disposal (DDT and pyrethroids)	Collection and repatriation of DDT waste to South Africa and incineration of pyrethroid waste in	(i) Proportion of IRS chemicals expired (ii) Proportion of expired IRS chemicals earmarked for	Annually	ZISSP, NMCC, ECZ, Chemical suppliers

No.	Activity	Mitigation measure(s)	Monitoring indicator(s)	Monitoring and Reporting Frequency	Party(ies) responsible
		identified incineration sites	incineration that have been incinerated (iii) Weight (Kg) of DDT waste repatriated (iv) Weight (Kg) of chemical waste incinerated (v) Appropriate documentation of safe disposal		
7.	Training of clinicians in poison management	Poison management	Proportion of IRS districts with trained clinicians, number of clinicians trained in poison management	Annually	ZISSP, NMCC, DHOs,
Maternal, Neonatal, and Child Health and Integrated Reproductive Health					
8.	Dissemination of updates on injection safety	Safe disposal of used syringes and needles	Safe injection guidelines available in all 72 districts	Annually	ZISSP, DHOs, PHOs, MOH
9.	Dissemination of medical waste guidelines	Safe disposal of medical waste	Safety guidelines on medical waste available in all 72 districts	Annually	ZISSP, DHOs, PHOs, MOH
10.	Supervision of health workers in injection safety and medical waste disposal	Compliance to safety and waste disposal guidelines	Number of supervisory visits by DHOs, reports on incineration	Annually	ZISSP, DHOs, PHOs, MOH