

Waste Management in University Laboratories, Baghdad/Iraq

Israa Hussein Hamzah¹, Sawsan Mohammed Kareem¹, HibaTaqi
Bahiya², Mahdi Falh Al-Jewari²

(1) College of Science / Al-Mustansiriyah University, (2) Iraqi National Monitoring Authority
(INMA)

Email of Corresponding author: esraa_hassan17@yahoo.com

Abstract

In this work, two groups worked to assessment the biosafety rules which used through waste management in the university research laboratories. The first from an internal survey of laboratory staff and the second a similar survey from an external monitoring authority (INMA). Together the groups worked to coordinate their assessments and share their results, which supported their common goal of ensuring safe and Laboratories subsequently ensuring safe environmental in Baghdad, Iraq. We described assessment by made survey in five laboratories and assessed current waste management and dispose of hygienically.

Keywords: Biosafety; Waste management; Iraqi laboratories

Introduction

Any waste that directly or indirectly represents a threat to human health or to the environment by introducing one or more of the following risks: Explosion or fire, Infections, pathogens, parasites or their vectors, Chemical instability, reactions or corrosion, Acute or chronic toxicity, Cancer, mutations or birth defects, Toxicity or damage to the ecosystems or natural resources, Accumulation in the biological food chain, persistence in the environment or multiple effects.

Laboratory services are an essential component of quality health-care delivery. They can be utilized effectively at every level of the health-care system, including primary health care and point-of-care testing. Quality laboratory results are required to support clinical diagnosis, rationalize and monitor treatment, for epidemiological purposes, for the surveillance and control of diseases of public health importance, and to provide early warning of disease outbreaks. This improves the accuracy of health information and promotes effective national health planning.

The level of risk depends on the activities within the laboratory, and the types and sources of material entering the laboratory. Occupational injuries and illnesses may result from bad practices, ignorance, inexperience and failure to follow established procedures.

All laboratory activities may be subject to errors, and studies have shown that errors in the laboratory can occur in all the phases of diagnostic procedures. Examples of errors that can occur in each phase are (Pre-analytical phase, Analytical phase, Post-analytical phase).

Main goals

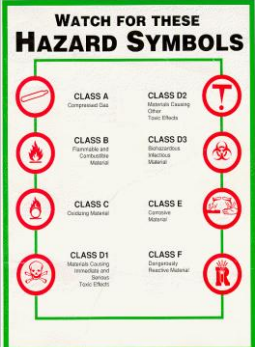





- 1) Increase safety which involves taking precautions to protect researchers and coworkers against infection, injury or poisoning.
- 2) Other people who may come in contact with testing by-products
- 3) Protect integrity of test products and Disinfect and dispose of infectious materials
- 4) Protect environment from hazardous material
- 5) Help analytical, medical, teaching, and biotechnology labs properly manage hazardous materials and reduce dangerous waste.
- 6) Follow written safety procedures and keep proper safety records

Material and methods Assessment the survey by checklist questions in five laboratories depended on international standered rules for deal with waste management's which are

*Sandia national laboratories (<http://www.sandia.gov>)

*International Guidelines (World Health Organization) (WHO) –Laboratory Biosafety Manual (LBM) 3rdEditio

Result and discussion

Steps of waste management	Questions	Answer laboratory			Shapes
		Yes	No	Rather	
Segregation	I: Do you have clearly labeled for waste containers with relevant information (e.g., contents, source, responsible party contact information)?		✓		
	II: Do you have a system adopted for identification and separation of laboratory waste and waste containers (e.g., solid, liquids, sharps, chemicals)?			✓	
Collection and Storage	Are there adequate procedures for the collection and storage of waste, including temporary storage and to maintain its integrity until transport packaging materials?			✓	
Transport	I: is there responsible for waste management?		✓		
	II: is there a periodic training of those responsible for waste management?		✓		
Treatment primary treatment	is there a program to reduce waste generation in laboratory as primary treatment	✓			
Secondary treatment	Do you have specialized committee responsible on cleaning service, laboratory waste management and disposal waste in biosafety methods as soon as possible?	✓			
					

Conclusions

- 1) This project will serve to ensure safe work practices in university laboratories in Iraq and minimize risk to acceptable levels.
- 2) The need of identify on different methods for segregation and storage of biological waste is necessary for different types of waste.

إدارة النفايات في مختبرات جامعة بغداد / العراق

إسراء حسين حمزة ١، الدكتورة سوسن محمد كريم ١، هبة طارق بهية ٢، مهدي فالح آل جويري ٢

(١) كلية العلوم / جامعة المستنصرية، (٢) هيئة الرقابة الوطنية العراقية

البريد الإلكتروني: esraa_hassan17@yahoo.com

الخلاصة:

في هذا العمل، عملت مجموعتين لتقييم قواعد السلامة الأحيائية التي تستخدم من خلال إدارة النفايات في مختبرات البحوث الجامعية. الأول تضمن مسح استطلاع داخلي لكوادر المختبرات والثاني استطلاع مماثل من هيئة المراقبة خارجية. عملت المجموعات معا لتنسيق عمليات تقييم وتبادل نتائجها، التي تدعم الهدف المشترك المتمثل في ضمان ضمان بيئة آمنة في بغداد، العراق. وصفنا التقييم من قبل مسح الاستطلاع في خمسة مختبرات وتقييم إدارة النفايات الحالية والتخلص منها صحيا.

كلمات البحث: السلامة الأحيائية؛ إدارة المخلفات؛ المختبرات العراقية

Reference

1. Sandia national laboratories (<http://www.sandia.gov>)
2. International Guidelines (World Health Organization) (WHO) – Laboratory Biosafety Manual (LBM) 3rdEdition