

***LABORATORY BIOSAFETY / JORDAN  
SUBMITTED TO THE REGIONAL  
BIOSECURITY WORKSHOP***

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# The Hashemite kingdom of Jordan

- The total area of Jordan is about " 92" thousands square kilometers, 70% is desert.
- The estimated population is about 5.8 millions.
- 40% under "15" years.
- 2.5%of the total population is above (65) years.

**Legend**  
Jordan Governorates

- Ajloun
- Amman
- Aqaba
- Balqa
- Irbid
- Jerash
- Karak
- Ma'an
- Madaba
- Mafraq
- Tafleeh
- Zarqa
- Jordan Boundary

Ministry Of Health - Copyright (C) 2008.

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**المحافظات**

- مديريات الصحة
- التجمعات السكانية
- مراكز المدن والقرى
- مستشفيات حكومية
- مستشفيات الجامعات
- خدمات طبية متكيفة
- مستشفيات خاصة
- المراكز الصحية:**
- مراكز صحية شاملة
- مراكز صحية أولية
- مراكز صحية فرعية

# Health services in Jordan

- The health policy in Jordan is supervised by a Higher Health Council headed by the Prime Minister and includes health leaders from public and private sectors.
- Health Services in Jordan is provided by different sectors:
  1. Ministry of Health.
  2. Royal / Military Medical Services.
  3. University/medical school- attached Hospitals.
  4. UNRWA: provide services to Palestinian refugees.
  5. Private Sector.
  6. Charity Societies/NGOs.

# Laboratory Services in Jordan

**650 medical** laboratories operating in Jordan  
as follows:

**Ministry of Health operates “238” Laboratories:**

- (135) Peripheral/ PHCMC.
- (68) Intermediate/CHCMC.
- (5) public health laboratories.
- (27) Hospital laboratories.
- (1) Tuberculosis laboratory.
- (1) Malaria and Bilharsia laboratory.
- (1) National Public Health Laboratory.

## Laboratory Services in Jordan/ other sectors

- Royal Medical Services/military:
  - (8) hospital laboratories.
  - ?? Intermediate level laboratories.
- University Hospitals  
(2) laboratories in the two medical school affiliated hospitals.

## Laboratory Services in Jordan/ other sectors...continue

- UNRWA: operates (24) laboratories.
- Charity Societies: operates (15) laboratories of peripheral & intermediate levels.
- Private Sector: operates ” 360 ” laboratories:
  - (55) hospital-based laboratories.
  - (305) individual laboratories.

# Medical microbiology service capability

Microbiology lab. services is provided at “247” laboratories, mostly of **BSL2** :

1. All (27) MOH hospital laboratories.
2. (6) MOH public health laboratories located in “6” of the “12” governorates.
3. (200) of the “360” private laboratories.
4. (8) military hospital laboratories.
5. (4) of the “24” UNRWA laboratories.
6. (2) University Hospitals laboratories.

# Legislations Regulating Biosafety In Jordan/1

## 1. Ministry of Health:

**\* Public Health Law updated in 2008.**

- **Bylaw of licensing private laboratories.**
- **Bylaw of licensing private hospitals.**
- **Bylaw of conducting pharmaceutical research.**
- **Regulations of managing medical wastes issued in 2001.**

# Legislations Regulating Biosafety In Jordan/2

## 2. Ministry of Environment.

### \* **Law of Environment Protection.**

- Bylaw of Protection the Environment from contamination.
- Bylaw of Protection Water from contamination.
- Bylaw of Protection Air from contamination.
- Bylaw of managing Solid wastes.

## 3. Ministry of Municipalities.

# Public Health Law 47/2008

## \*Paragraph 22/b states that:

-Each person who does not notify /report an infectious case or exposes any person to infectious disease or deliberately transmits an infectious disease to others or does not comply with preventive measures to avoid transmission of an infectious disease is considered guilty and should be submitted to penalty according to this law.

# Public Health Law 47/2008

## \*Paragraph 46/b states that:

- All medical wastes “Liquid ,Solid or gaseous” produced by any medical facility such as hospitals ,health care centers ,clinics , laboratories ,research institutes, drug factories...etc are considered Health hazards unless being properly treated according to the issued instructions.

# Public Health Law 47/2008/**Penalty**

**\*Paragraph 62/a states that:**

**- A penalty of Incompliance with paragraph 22/b or paragraph 46/b is:**

**\* Sentence to Jail for “4 months- 3 years”  
or fine of “5000” JDs or **Both.****

# Regulations for managing medical wastes/1

- \* Issued in 2001 and are obligatory for public & private sectors.
- \* Apply for all types of medical wastes” solid ,liquid and gaseous” produced at:
  - 1.All health care institutions.
  - 2.Medical laboratories.
  3. Medical research centers .
  4. Human and veterinary drug factories and drug stores.
  5. Veterinary clinics.
  6. House nursing care.

# Regulations for managing medical wastes/2

\*Classify and define dangerous medical wastes into :

1. Infectious wastes .
2. Pathological wastes.
3. Sharp wastes .
4. Chemical wastes .
5. Pharmaceutical wastes .
6. Container filled under pressure.
7. Gene –toxic wastes .
8. Radioactive wastes .
9. Wastes containing big amounts of heavy metals.

# Regulations for managing medical wastes/3

- Clarify processes of separating different types of wastes .
- Clarify types and colors of different waste containers.
- Clarify ways and procedures for primary treatment of different types of waste, including storage & transportation.
- Clarify the specifications of a vehicle used for transportation of different waste.
- Clarify in details the incineration process .

# Bylaw of licensing private laboratories

- Paragraph 15 of the Bylaw of licensing private laboratories states that:

**“All private laboratories in the country should implement biosafety measures and should comply with all issued instructions and decisions related to treatment of medical wastes”.**

# Instructions

**Instructions issued according to the  
“bylaw of licensing private laboratories”  
that related to biosafety measures .**

# 1. Safety of laboratory Workers

- \* Availability of lab. coats , gloves and PPEs.
- \* HBV- vaccine.
- \* Eating and smoking is prohibited.
- \* Use of laboratory Refrigerator for keeping food and drinks is prohibited.
- \* Mouth pipetting is prohibited.
- \* Availability of disinfectants .

## 2. Disposal of laboratory Waste

- a- Sharp disposals should be collected in a hard: autoclavable, leak-proof containers.
- b- Contaminated solid disposals should be collected in an autoclavable red color plastic bags.
- c- The contents of “a & b” should be primarily decontaminated by autoclaving inside the lab.

## **2. Disposal of laboratory Waste**

**d- Uncontaminated disposals should be collected in a black color plastic bags.**

**e. Liquid waste should be treated with 1% sodium hypochlorite prior to disposal.**

## 3. Packaging and transport of Biological substances

- Has been approved by the minister of health on February 8<sup>th</sup>, 2009.
- entered into force by March 16<sup>th</sup>, 2009 after being issued in the official gazette.
- Apply for public and private sectors.
- Regulate packaging and transportation of biological specimens and microbial isolates within the country.

**International transport of biological substances is regulated by IATA & ICAO.**

# Packaging and transport of Biological substances/1

## Paragraph 2 of the Instructions defines:

- \* The biological substance.
- \* The specimen.
- \* The internal transport.

# Packaging and transport of Biological substances/1

## Paragraph 3 deals with packaging:

\* Primary specimen container :

1. should be water and leak proof.
2. should be sealed with Para film and foiled with absorbent paper and again sealed with tape.
3. should be located in one of a **double-pocket biohazard bag** .

# Packaging and transport of Biological substances/2

- \* The request form or any papers associated with the specimen should be located in the other pocket.
- \* The request form should include information related to:
  - Name and address of sender.
  - Address to whom the specimen is sent.
  - Date and time of sending .
  - Name of person carrying the shipment.

# Packaging and transport of Biological substances/3

- **Paragraph 4 deals with transportation:**
  - \* The container should be located in a leak proof, durable box with biohazard label.
  - \* When necessary, ice boxes should be available throughout the transportation process.
  - \* The vehicle should be equipped with disinfectant , gloves , absorbent papers and biohazard hard container.
  - \* A person assigned for transportation should be well trained to tackle any accident that may happen.

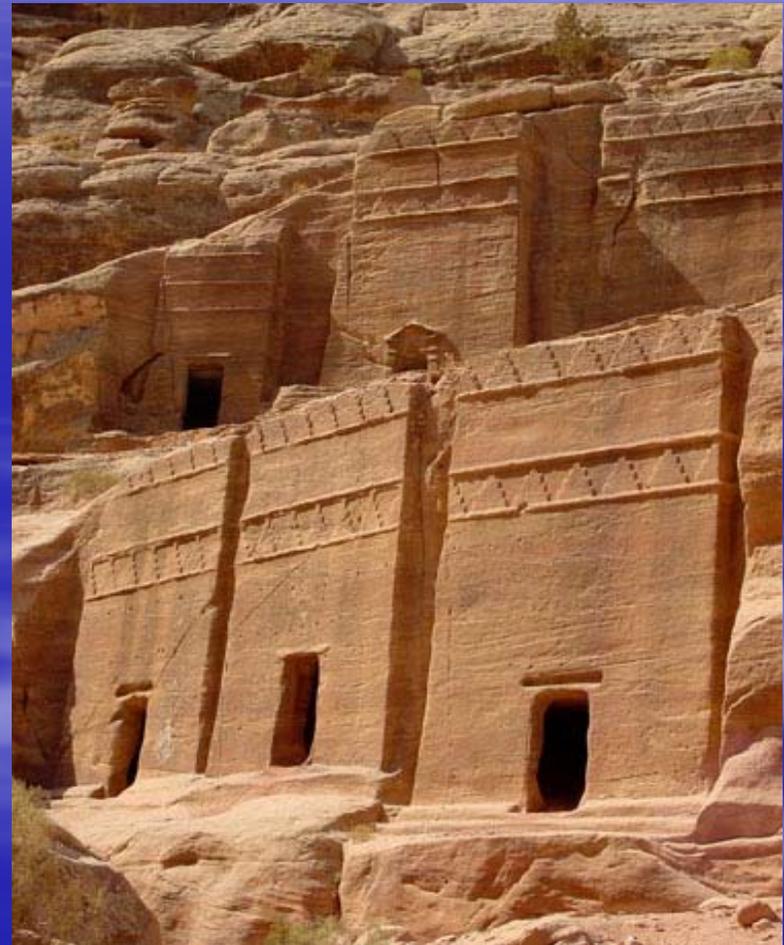
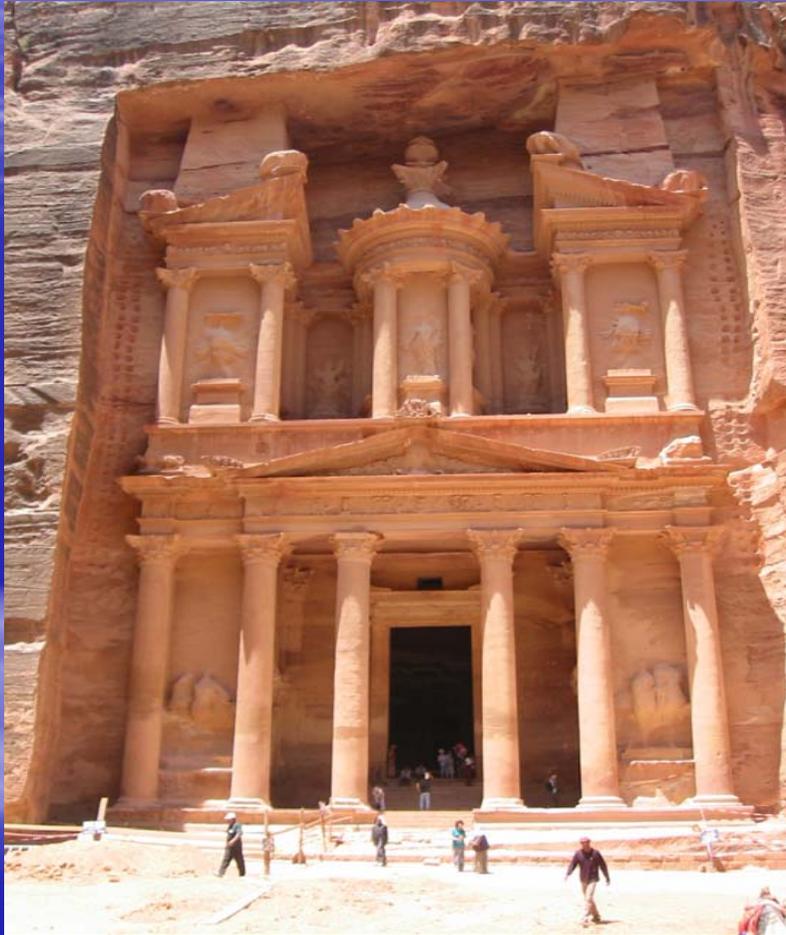
# Challenges

- **Enforce the implementation of biosafety regulations especially among public sector institutions .**
- **Raise the awareness of biosafety issues among health workers by conducting specific training courses in biosafety .**
- **Allocate adequate financial resources to ensure biosafety equipments and tools.**

# Challenges

- Issue an instructions to ensure that the laboratory design, bench tops, furniture, doors, movement of lab. workers and patients....etc meet biosafety requirements .
- Fostering cooperation between governmental and non- governmental institutions at national level.
- Fostering cooperation at regional and international levels.

# Petra –one of the 7 miracles of the world .



**Thank for your attention**