



ONE HEALTH EDUCATION AND TRAINING

INCORPORATING

ONE HEALTH

ASPECTS INTO OCCUPATIONAL SAFETY AND HEALTH TRAINING AT A MALAYSIAN ZOO: DEVELOPMENT OF EMERGENCY RESPONSE

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INTRODUCTION



**Emergency
Response
Plan (ERP)
essential in
organisation
by national
law**



**Hazards are
unique**
- Wildlife
- Significant
public access



**Potential
health
hazards of
biological
origins
(zoonosis)**

THE ZOO

- **160 workers, 110 acres**
- **Animal keepers, technical staffs, veterinary staffs (doctors and nurses)**
- **9,880 volunteers (2017)**

THE PROBLEM?

- **No occupational safety & health (OSH) basics, only wildlife act**
- **Zoo needs ERP for serious & imminent dangers, N/A except animal escape**
- **Protect workers, volunteers & public (30,000 per month)**





OBJECTIVE OF PROJECT

**To develop &
implement ERP
for potential
emergencies
identified using
OSH training
methods in a
Malaysian zoo.**

Project details

1. Community-based training project

- 45 Representatives of 7 departments
- 5 UPM and UKM lecturers & 57 2nd yr and 58 3rd yr students (UPM EOH)

➤ 2. Duration

- April 2017-April 2018

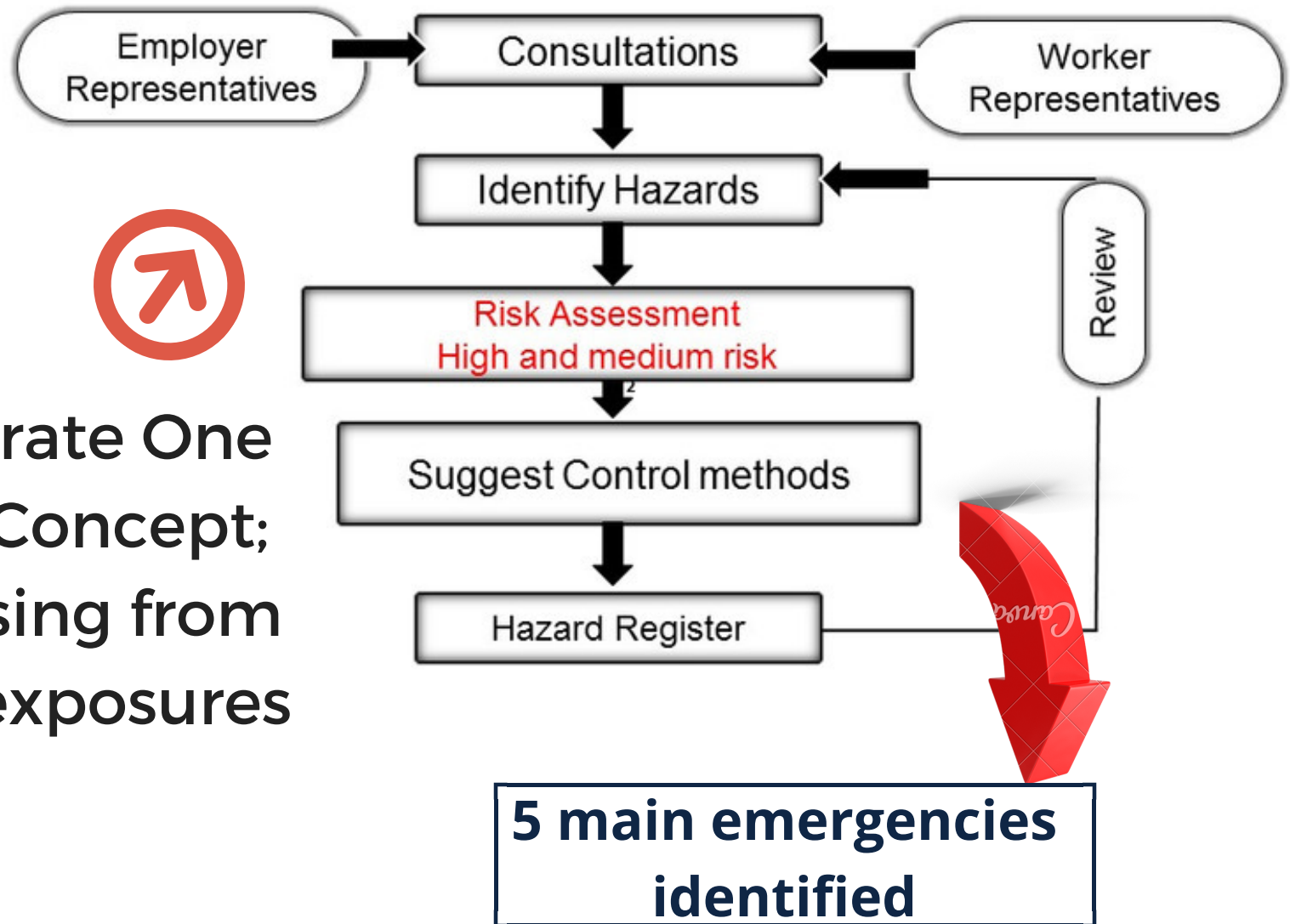
3. Training phases

- 1) Hazard identification & risk assessment & risk control (HIRARC)
- 2) Incident Command Structure (ICS)

➤ 4. Project outcomes

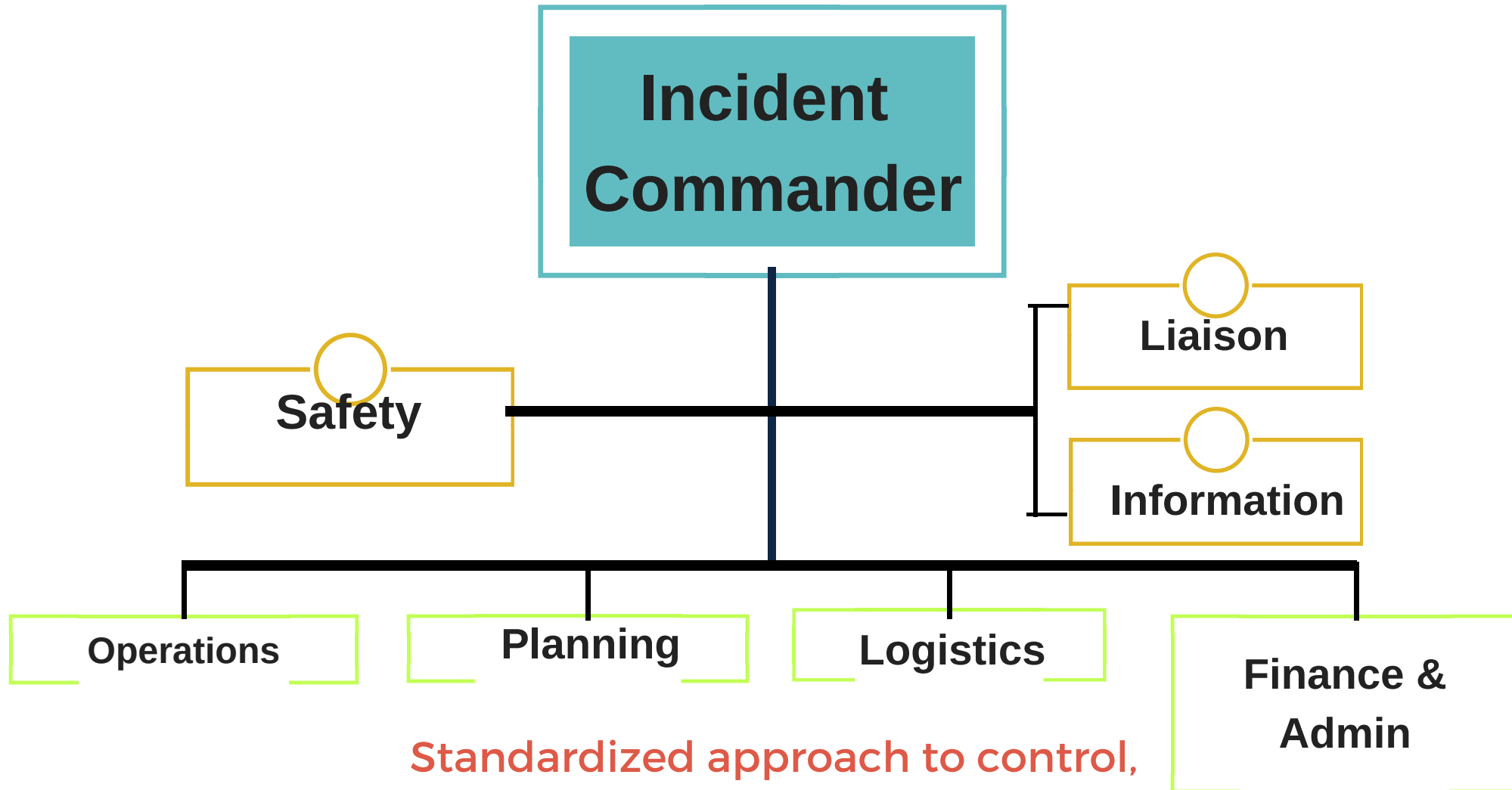
- Emergency drill
- 5 documented procedures for ERP

Basic Hazard Identification, Risk Assessment and Risk Control Training



Incorporate One Health Concept; risks arising from animal exposures

Preparedness for Emergency discussed using Incident Command Structure (ICS)



Standardized approach to control, coordinate ERP; common hierarchy of positions, responsibility & terms of reference

RESULTS FROM HIRARC TRAINING

- Incorporate One Health into training, risks related to animal handling while performing work
- Biological hazards emphasised; zoonosis, such as leptospirosis, toxoplasmosis, rabies etc

Learning from training activities 11/2/17; 29/4/17; 7/5/17



Activities at the Zoo

- 1) Walk-through activity
- 2) Workshop on HIRARC
- 3) Workshop for representative staff of Malaysian Zoo on ICS



Emergencies Identified and Procedures Developed

1

**ZOONOTIC-
RELATED
OUTBREAK**

2

**NATURAL
DISASTER**

3

**ANIMAL
ESCAPE**

4

**FIRE
EMERGENCY**

5

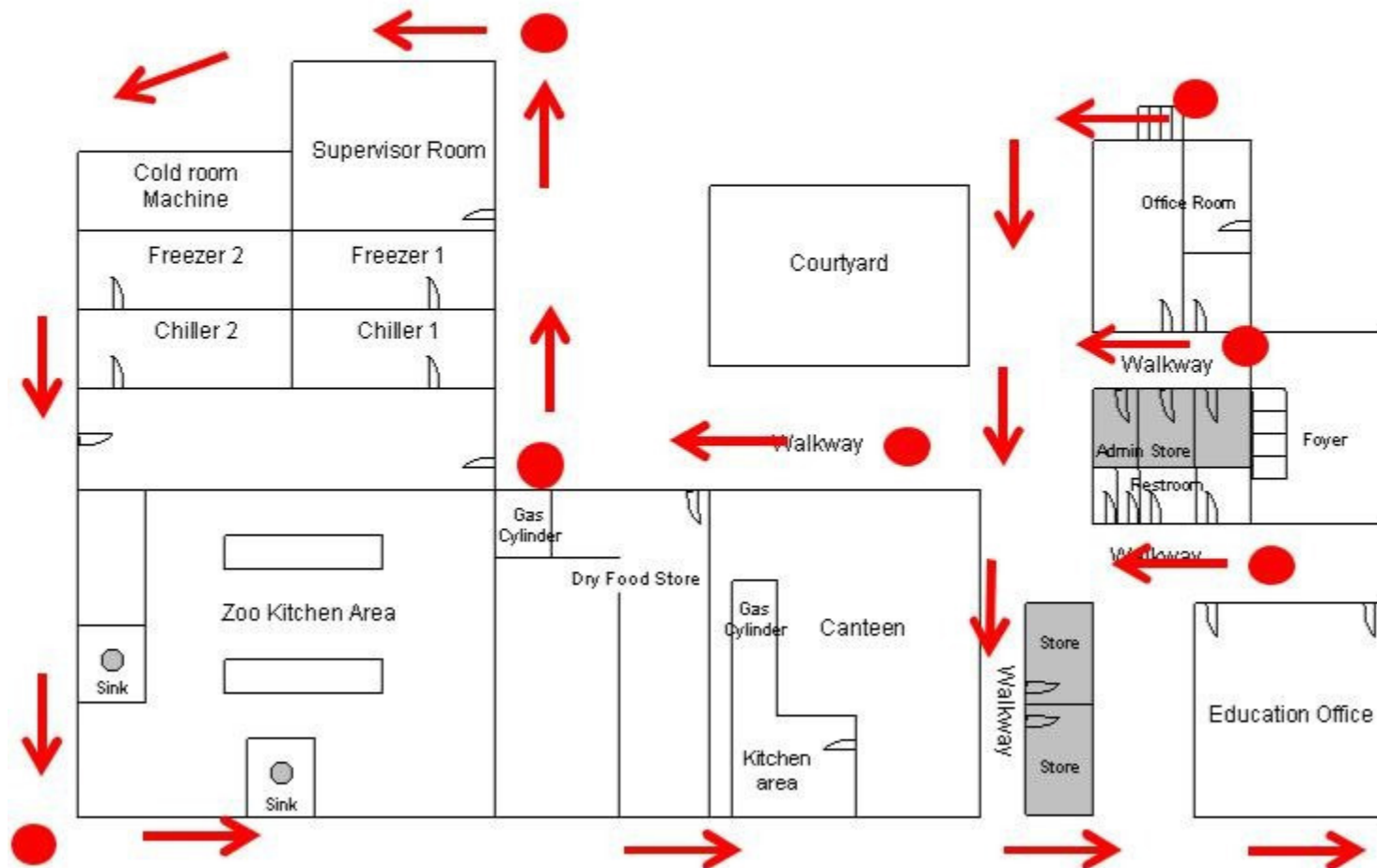
**TERRORIST/
BOMB
ATTACK**

ERP Simulation for Fire Emergency Performed - Administrative Building

- Activities performed on 27/11/17, 4/12/17, normal zoo operation
- Person-in-charge appointed according to IC Structure (Zoo staffs and students were trained)
- Established
 - - Teams - triage, evacuation, fire warden etc
 - - Planned scenario, minute by minute activities
 - - Location plans of simulation, evacuation route, floor plan & assembly points
- Cooperated with internal & external emergency services - Ambulance with paramedics, fire brigade from local area, visitors

Examples of Evacuation Route

FIRE DRILL LAYOUT PLAN : GROUND FLOOR



Photos of Simulation



Lesson Learned

- Workers exposed to many hazards but have no significant OSH-related training
- Workers only involved in ERP related to animal escape prevention - need to learn in stages
- During simulation, authorised agency found crucial weaknesses which needs immediate attention - *communication during emergency to other workers and visitors, evacuation route for egress, confidence of staffs etc.*
- Simulation is first drill performed in 5 years. The trained workers will be able to improve ERP on continual basis.

Conclusion

- One Health needs to be incorporated into OSH training for zoo workers - done from HIRARC training
- Workers needs to realize potential zoonotic risks in addition to other potential emergencies via regular training, but management constrictions present.
- Carefully-developed ERP is needed to protect workers, visitors and all stakeholders in this field and is part and parcel of the Malaysian OSH law.

THANK YOU

