Establishing One Health Lab Network, Promoting and Implementing Bio-risk Management Practice in Academic Institution in Indonesia: The Challenges

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OUTLINE

• Background
• The Establishment of One Health Lab. Network
  ✓ Scope of work of One Health Lab. Network
  ✓ Desktop assessment for membership
  ✓ OHLN members
• Roles of university laboratory in implementing bio-risk management and the challenges
• What to do in the up coming year?
• Conclusions
Background

- **Indonesia is a multi-complex country**
  17,504 islands, 700 dialects, 33 provinces, 262.5 million population

- **Migration of people and animals is increase every year locally and globally**
  Spreading of diseases such as TB, Dengue and Avian Influenza (H5N1), Anthrax, Rabies etc.

- **Indonesia has many BSL-2 and trend to build BSL3s, including in universities (both human and animal laboratories)**
  Needs more safe and secure lab practice and human resources

- **Zoonotic, Emerging infectious diseases outbreak, and AMR issues are increasing**
  Lack of capacity to identify and detect the pathogens, limited human resources, collaboration and networking
THE ESTABLISHMENT OF ONE HEALTH LABORATORY NETWORK (OHLN)

“Linking University Laboratories to support the National Strength to Identify and Detect Zoonotic Disease and (Re) Emerging Infectious Diseases (EID) Pathogens”
**SCOPE OF WORK**

1. Linking university laboratories
2. Provide training for laboratory personnel
3. Promoting Laboratory Quality Assurance
4. Promoting laboratory biorisk management practice
Of 35 proposed laboratories, due the lack of responsiveness of faculty/laboratory member, 1 laboratory (3%) are not collected their data (parasitology veterinary laboratory).

- FM UI, FM Padjadjaran Univ, FM Gadjah Mada Univ, FM Airlangga Univ, FM Brawijaya Univ, FM Udayana Univ, FM Hasanuddin Univ
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- FVM Bogor Univ, FVM Gadjah Mada Univ, FVM Airlangga Univ (2), FVM Brawijaya Univ, FVM Udayana Univ (4), FVM Syiah Kuala Univ
- FVM Bogor Univ, FVM Gadjah Mada Univ, FVM Airlangga Univ, FVM Brawijaya Univ, FVM Udayana Univ, FVM Syiah Kuala Univ
“All university laboratories that further assessed with the next variables (collaboration and networking, professional HR, lab performance, & lab equipment) must be BSL 2 lab”
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Map of Current OHLN Members

- Microbiology and Parasitology Laboratory, FM, Universitas Indonesia
- Microbiology and Parasitology Laboratory, FM and FVM, Gadjah Mada University
- Veterinary Microbiology Laboratory, FVM, Bogor Agriculture University
- Microbiology and Parasitology Laboratory, FM, Padjajaran University
- Microbiology and Veterinary Microbiology Laboratory, FM and FVM, Airlangga University
- Parasitology Laboratory, FM, Sam Ratulangi University
- Microbiology Laboratory, FM, Hasanuddin University

8 Microbiology, 3 Parasitology, 1 Microbiology & parasitology (Human and Animal lab)
12 University Laboratories Capacity
Based on FAO Laboratory Mapping Tool Variables

- Geographic location
- Laboratory Budget
- Basic supply
- Organization
- Infrastructure
- Equipment
- Reagent supply
- Staff skills + availability
- Sample accession
- Available technology
- Training
- Quality Assurance
- Biosafety/Biosecurity
- Staff Security/Health
- Communication means
- National lab networking
- Laboratory collaboration

LMT Score: 0 - 20 21 - 40 41 - 60 61 - 80 81 - 100

- Very Low
- Low
- Middle
- High
- Very High
Roles of University Laboratories in Implementing Biorisk Management in Indonesia and The Challenges
GLOBAL THREATS AND ROLES OF LABORATORY

- Emerging Infectious Disease
- Zoonosis
- Anti-Microbial Resistance

- Diagnostic and Referral
- Diagnostic Technique Development
- Development of Vaccine and Medicine
- Training
What has been done by the OHLN in the Implementation of Biorisk Management?

Advocacy to the top management
• Laboratory assessment
• Legal agreement with universities and faculties
• Laboratory membership

Quality Improvement
• Promoting bio-risk awareness to the network (WHO Biosafety manual, CWA 15397 and CWA 16393 documents)
• Increasing laboratory personnel capacities on Good Clinical Lab practice (GCLP)
• Laboratory guideline identification
• Identification of collaboration framework between university and government of Indonesia Laboratories
The Challenges of Promoting and Implementing Biorisk Management Program in Academic Setting

System and regulation
- There is no mandatory national policy yet on the implementation of biorisk management in university laboratory
- Absence of system in most university members to support the implementation of biorisk management
- Commitment of university top management

Infrastructure and facility
- Most of members are BSL 2 laboratory
- The biosafety facility need to be improved (BSC, bio-containment etc)
- Variation of biorisk management guideline among the laboratory members

Human resource and network
- Biorisk issue is quite new among the laboratory workers
- Lack of certified personnel on biorisk management
What to Do in the Up Coming Year?
Start with National Policy
(Top Down)

- **Advocate the government** on biorisk management policy (ministerial decree)
- Initiate the Establishment of laboratory biorisk management certification body
- Establish and integrate biorisk management in one system
- Consolidate the current laboratory members to implement the biorisk management
- Risk assessment (risk group, animal and human model, logistics)
- Training of biosafety officers, laboratory managers to obtain biorisk management certification from IFBA
- Support the development of management system within the university for implementation of Biorisk Management
Conclusion

- The university laboratories play important roles to strengthen the national security capacity to identify and detect zoonotic diseases and (re)-emerging infectious diseases, including the pathogens that are potentially used as biological weapon.

- Improvements of University laboratories are greatly needed in bio-risk management, laboratory performance, and partnership/networking.

- Network among university and government laboratories should be established to overcome the global threat with effective solution to tackle EID, Zoonosis, and AMR issues.
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OHLN University Members
THANK YOU