Lessons learned from conducting FAD emergency exercises in the veterinary necropsy laboratory

Canadian Animal Health Laboratorians Network

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Roadmap

- Background: emergency preparedness in the necropsy laboratory
- Planning a full-scale operational emergency exercise
- Conducting the exercise
- Evaluating the exercise: lessons learned and opportunities for improvement
Emergency Preparedness

Definition:

“The planning, exercising, and education necessary to achieve a state of readiness for disasters and emergencies.”

https://mahextranet.gov.ab.ca
Why Conduct Emergency Exercises at the Veterinary Diagnostic Laboratory?

- Due diligence: Assure OMAFRA and livestock industry clients that the lab is prepared for an FAD outbreak
- Validate SOPs
- Identify training gaps
- Build interagency communication networks: Canadian Food Inspection Agency = lead organization for FAD
- Murphy’s Law:
  - Emergencies always occur on Friday afternoon;
  - …before a long weekend in the summer;
  - ………..when the boss is on vacation.
Emergency Response in the Necropsy Lab: Submission of FAD-infected Carcass

Goals of an effective emergency response:

- rapid tentative diagnosis based upon gross lesions (FAD recognition training - pathologists)
- collect samples and notify CFIA to expedite confirmatory testing (CFIA protocols)
- disinfect necropsy room to limit spread of FAD by other clients using diagnostic lab facilities*
- decontaminate necropsy personnel to limit spread of FAD in surrounding community*

* lab-specific SOPs
Justice Institute of British Columbia

Emergency Management Certificate
- Incident Command System
- Emergency Operations Centre
- Developing Emergency Plans

Emergency Exercise Design Certificate
- Designing and Conducting Discussion-Based Exercises
- Designing and Conducting Operations-Based Exercises
Planning the Emergency Exercise: Step 1
Identify Overarching Exercise Objectives

1) To test and validate the SOPs regarding management of a FAD suspect in the necropsy lab

2) To test and evaluate notification protocols and communication networks among the AHL, U of Guelph, and the CFIA
SOP: Managing a FAD suspect in the Necropsy Lab

i) site-specific
ii) purpose, scope
iii) roles and responsibilities
iv) supplies
v) safety precautions
vi) detailed procedures
vii) references
viii) appendices, forms

If you suspect a reportable disease, or have a reportable disease as a plausible rule-out:
1. Report your suspicion to the CFIA District Office – phone numbers below; use the Hotline after-hours.
2. Determine appropriate samples - from CFIA list available in PM suites.
Two categories can be used when submitting samples to CFIA for reportable disease testing:
   a. **High risk**: Use when there is a serious concern for the presence of an FAD.
   b. **Confirmatory negative**: Use to rule out an FAD in a differential diagnosis.
3. AHL vets - Email CFIA and OMAFRA - reportable disease (suspect), immediately notifiable disease (when confirmed):
   a. to CFIA – send email to ‘CFIA reportable-notifiable diseases’ list in Lab Services Contacts, attach PDF of the AHL report.
   b. to OMAFRA – email “OCVO-OMAFRA notification” list in Lab Services Contacts, give case number only, **do not attach the PDF**, OMAFRA can access the data warehouse through WebI.

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**Canadian Food Inspection Agency (CFIA)**
District Veterinarian, Guelph - Dr. Charanjit Talwar, phone: 519 837-5817, Charanjit.Talwar@inspection.gc.ca
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District Veterinarian, Acting, Ottawa - Dr Rachel McPhie 613-274-7374 x226, Rachel.McPhie@inspection.gc.ca or Dr. Erica Wylie x 250, Erica.Wylie@inspection.gc.ca
Ontario FAD Specialist, Guelph - Dr. Graeme Stott, phone 519 826-2865, cell 519 830-0566 Graeme.Stott@inspection.gc.ca
CFIA FAD Hotline 1-877-814-2342 (rotation: Drs. Ed Creighton, Brian Keyes, John Churchill; Claudine Sequin)
Planning the Emergency Exercise: Step 2
Develop the Exercise Guide

i) statement of purpose
ii) overarching objectives (desired outcomes)
iii) narrative – exercise scenario
iv) specific objectives and expected actions
Overarching Objective #1:
To test and validate the SOP regarding management of a FAD suspect in the necropsy lab

Objective #1:
Establish a secure perimeter to limit entry and exposure of additional people.

Expected Actions:
a) Pathologist makes a tentative FAD diagnosis: Time 0
b) Pathologist directs the necropsy tech to post all access doors with signage restricting entry to authorized personnel only: Time – 15 minutes
Planning the Emergency Exercise: Step 3
Develop the Evaluation Guide

i) Identify independent observers who will evaluate the exercise.

ii) Develop evaluation guide.
Planning the Emergency Exercise: Step 3
Develop the Evaluation Guide

Overarching Objective #1: Test FAD SOP

Objective #1: Establish a secure perimeter to limit entry and exposure of additional people.

Expected Actions:

- Pathologist communicates situation to necropsy technician
- Pathologist refers to AHL-SOP PM procedures for FAD suspect
- Necropsy tech locates and posts disease alert signage at entries into 1843 and shower room 1842A
- Time frame: 15 minutes
- Actual time

Objective was completed (circle one): Fully Partially Not N/A
Planning the Emergency Exercise: Step 4
Prepare the Participants and Site

- Meet with pathologists and necropsy technicians to review the exercise guide, expected actions and timelines.
- Meet with evaluators to review objectives and guidelines for evaluating actions during the exercise.
- Dedicate staff to the exercise – ensure business continuity.
- Order the carcasses.
- Order post-exercise lunch!
Ontario Swine Industry FAD Simulation: September 2011

- Ontario Pork Industry Council and Ontario Pork conducted an emergency preparedness project in Sept. 2011
- Desk-top exercise
- Outbreak of “standard swine fever” used to:
  - test a farm planner used to guide producers through a check list of actions in the case of a disease emergency;
  - test biosecurity and emergency preparedness tools for use within the pork supply chain;
  - test and measure effectiveness of communication during an outbreak.
- AHL involved peripherally as a “service provider”
On September 8, a warm humid Thursday morning the first week of the fall semester, a dead pig is delivered at 0830h to the AHL necropsy laboratory, Building 89 at the corner of Gordon Road and McGilvray Street, University of Guelph. The pig is one of 50 pigs that died overnight on a large farm.

The delivery truck and driver left immediately following unloading; route and destination are unknown.

Between 0900h and 1000h, an electrical contractor entered the necropsy suite via the truck bay to repair the hoist controls, and has since left.

An OVC faculty clinician, several interns and students entered the necropsy room via the boot room entry at 1100h to examine a horse that died post surgery. This group subsequently left via the boot room and returned to the large animal clinic.
Conducting the Emergency Exercise: September 8, 2011

At 0900h, an AHL pathologist reviews the case history, and because of the high death rate on farm, directs the assisting necropsy technician to transport the carcass directly into the Restricted Mammalian PM room 1841. Unusual gross lesions consisting of caseous tonsillar necrosis and an enlarged, congested spleen are identified during the necropsy examination. The pathologist begins to suspect “standard swine fever”, and realizes that swift action is required to prevent further spread of this reportable foreign animal disease…..

Courtesy Dr. J. Caswell
Conducting the Emergency Exercise: September 8, 2011

Dr. Margaret Stalker, Guelph

Dr. Andrew Brooks, Kemptville
Evaluating the Exercise: The “Hot Wash”

- “Hot wash” is a debriefing meeting that occurs immediately after the emergency exercise.
- Purpose = to identify the strengths/weaknesses of the response to the event.
- Captures valuable feedback from all participants.

**PARTICIPANT FEEDBACK FORM**

<table>
<thead>
<tr>
<th>Assessment Factor</th>
<th>Strongly Agree</th>
<th>Neutral</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) The exercise was well-structured and organized</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2) The exercise scenario was realistic</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3) Participation in the exercise was appropriate for someone in my position</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4) The participants included the right people who would be involved in a real FAD emergency event in the necropsy lab.</td>
<td>4</td>
<td>5</td>
<td>N/A</td>
</tr>
<tr>
<td>5) The exercise achieved the planned objectives</td>
<td>5</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

B) General Comments

1) What strengths were demonstrated by the people participating in the exercise?

2) Did the exercise identify areas where additional training or preparation is required to respond to a real FAD emergency? If so, please specify.

3) As a result of the exercise, do you feel that any policies, plans, and procedures should be reviewed, revised, or developed? If so, please explain.
Evaluating the Exercise: The “Hot Wash”

Participant Feedback:

- Was the exercise scenario realistic?
- Did the exercise include the right people who would be involved in a real FAD emergency?
- Did the exercise identify areas where additional training or preparation is required to respond to a real FAD emergency?
- As a result of the exercise, do you feel that any policies, plans, or procedures should be reviewed, revised or developed?
Evaluating the Exercise: Observer Comments

A) Quantitative: evaluation guide check-list

B) Qualitative: open-ended questions

- Did the participants communicate effectively to complete the desired action?
- What information or resources did the participants lack?
- What additional resources (equipment, instruments, facilities) are required for optimal response to a FAD emergency?
- Was the simulation realistic?
Evaluating the Exercise:
Observer Comments

Comments from external evaluators:

“Participants were well-prepared, and fully met the objectives outlined in the FAD SOP within the suggested time frame.”
Evaluating the Exercise: Observer Comments

Comments from external evaluators:

“Disinfection procedures at both labs should be expanded to address possibility of contamination in truck bay (G) and client reception, trim and freezer rooms (K).”
Quarantined Premises: Lab or Building?
Emergency Preparedness at the Guelph and Kemptville Necropsy Laboratories: Next Steps

- Revise and finalize SOPs
- Expand disinfection protocols
- Meet with CFIA to define extent of facility quarantine
- Produce CD/videos for PM lab entry/exit biosecurity protocols – both routine and emergency (FAD) operations
- Plan annual emergency exercises to maintain preparedness status
Lessons learned

- Planning is the critical step: define the objectives, expected actions and evaluation criteria.
- Avoid “scope creep”.
- Prepare the participants for a successful outcome.
- Full-scale operational exercises are optimal for validating SOPs, and provide an opportunity to train staff in real-time.
- Unanticipated outcomes identify critical gaps: disinfection/decontamination, CFIA quarantine
Why Conduct Emergency Exercises at the Veterinary Diagnostic Laboratory?

“Chance favours only the prepared mind”

*Louis Pasteur, Laboratorian (1865)*
Thanks:

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Kemptville Laboratory
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Observers
Dr. Janet Alsop (OMAFRA)
Dr. Gordon McArthur (CFIA)
Reference:

Designing Operations-Based Exercises
EM152, 2nd ed, 2009

Emergency Management Division

Justice Institute of British Columbia