Rinderpest post-eradication: implications for laboratories

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Post-rinderpest eradication activities

• Declaration of rinderpest worldwide eradication in 2011
• Resolutions from OIE and FAO in 2011 to address sequestration/destruction of virus
• Revised OIE Code and Manual chapters
• Formation of Joint Advisory Committee on Rinderpest
FAO/OIE Joint Advisory Committee (JAC) & Joint Secretariat

- Established June 2012
- FAO-OIE secretariat
- JAC: seven members of leading experts
- Met five times, alternately in Rome and Paris
Committee Members & Secretariat

- Gordon Abraham
- Geneviève Libeau
- Junaidu Maina
- Mo Salman
- Beverly Schmitt
- David Ulaeto
- Gerrit Viljoen
- Joint Secretariat: Samia Metwally (FAO Secretariat), Keith Hamilton, Dawid Visser (OIE Secretariat)
Role of the JAC

• Review and advise FAO and OIE on:
  – Applications for rinderpest holding facilities
  – Applications for research

• Ad hoc technical guidance on:
  – Developing standard operating procedures and protocols for virus destruction and sequestration
  – Development of an international preparedness plan
Priority of Post Eradication Activities

- Approval of a minimum number of facilities for holding rinderpest virus-containing material (RVCM)
- Communication and advocacy for virus destruction and sequestration
- Develop a rinderpest virus sequestration policy
- Ensure secure handling of rinderpest virus-containing material
- Approval of requests for research projects
- Facilitate and make sustainable the maintenance of adequate surveillance systems and national preparedness, including access to diagnostic reagents and services and vaccines
- Develop international preparedness plan (including vaccine reserves)
FAO/OIE Rinderpest Holding Facility

Develop guidelines and act on rinderpest virus destruction and sequestration.

Application:
- Endorsement is renewed every three years
- Facility inspection
- Supporting document:
  - Letter of support from government
  - Biocontainment certificate
  - Biosafety manual
  - Country contingency plan
  - Staff credentials

Facility categories:
- Storing and manipulating materials for diagnosis
- Storing and manipulating materials for research
- Storing manufactured vaccine
- Vaccine production and QC testing

Periodic visits of facilities by inspection team organized by FAO, OIE, Animal Production and Health Sub-program of the Joint FAO/IAEA Division
FAO/OIE Rinderpest Holding Facility

Process for endorsement

1. Submission
   - Application
   - Declaration of interest
   - Government endorsement

2. Evaluation
   - Review application dossier by JAC
   - Review facility by inspection team (if recommended by JAC)
   - Recommendation by JAC to FAO and OIE

3. FAO and OIE approval

4. Agreement with the Institute/government

5. Designation letter

• Inspection team
  – Composition
  – Inspection checklist
  – Inspection report
Holding facilities

• OIE General Assembly adopted resolution 33 in May 2014: ‘Procedure for the Designation of Facilities Holding Rinderpest Virus Containing Material to Maintain Global Freedom from Rinderpest’
• 5 applications/5 sites/4 countries
• Inspections to commence early next year
Communication and Advocacy

- FAO/OIE press releases: ‘Call for countries to comply with moratorium on research using live virus (July 2012)’

- Report in Nature ‘Risk of accidental reintroduction shadow rinderpest eradication effort (August 2012)’

- Veterinary Record: ‘FAO and OIE urge laboratories to destroy their stocks of rinderpest virus (August 2012)’

- FAO/OIE Press release: ‘Moratorium on using live rinderpest virus lifted for approved research (July 2013)’

- Prev Vet Med article: ‘Modelling the expected rate of laboratory biosafety breakdowns involving rinderpest virus in the post-eradication era (August 2013)

  - Conclusion “The risk of an animal accidentally becoming infected with rinderpest virus originating from a laboratory cannot be considered negligible, and must be highly uncertain”
Communication and Advocacy

- Developed a flyer ‘Ten Reasons for Not Maintaining or Storing Rinderpest Virus’, being used in FAO regional meetings

- OIE launched a communications campaign using animated movie advocating for virus destruction on YouTube and at meetings (May 2013)
Virus Destruction and Sequestration

- **FAO/OIE questionnaires** on status of rinderpest in laboratories in 2010 & 2011
  - More than 45 countries storing virus in laboratories at high and low biosecurity
  - Unofficial information
  - Published in a peer reviewed journal
Virus Destruction and Sequestration

Ongoing

- **FAO** is updated on the status of RVCM kept in low biosecure facilities and is offering support for:
  - Virus destruction
  - Sequestration
  - Decontamination of laboratories
- **OIE** has developed a secure web-based electronic rinderpest reporting system
  - Requirement of the Code for OIE Members to report annually
  - Results are reported at OIE General Session
  - Transparency will encourage reporting and destruction/sequestration
167/178 OIE Member Countries responded

- 144 Countries reported NO RVCM 81%
- 23 Countries reported to hold RVCM 13%
- 11 Countries not reported 6%

180 Countries will be covered starting in May 2014
Summary of OIE Survey results

- OIE received reports from 94% of Member Countries (167/178)
- 86% (144/167) of countries reported not to hold any stocks of RPV containing material
- 14% (23/167) reported to hold rinderpest virus containing material
- 23 Countries holding RVCM in **28 different institutes**
  - 1 country reported to hold RVCM in 5 institutes
  - 1 country reported to hold RVCM in 2 institutes
  - 21 countries holding RVCM in **1 institute per country**
  - 5 laboratories in 4/23 countries reported some form of RVCM to be destroyed
- 50% (14/28) of laboratories reported to hold some kind of live RPV
- 3/28 laboratories reported to hold 1,700,200 doses of manufactured RP vaccine
- 11 countries did not report; it is very important that these countries report
Research on Rinderpest

- Application for research proposal and criteria for approval are developed
  Objectives of the research should meet one or more of the following criteria:
    1) protect or improve food security
    2) provide concrete benefits for human health
    3) sustaining effective and efficient global freedom from rinderpest

- Approved project: ‘Testing the potential for protecting cattle against rinderpest using attenuated peste des petits ruminants virus vaccine’

- Approved project: ‘proposal ‘Sequencing and destruction of historical rinderpest virus isolates’”
Communication Strategy

Up-to-date OIE terrestrial code chapter

International reference laboratories/centers

International and regional vaccine strategy and capacity

Regional contingency plan

International assistance with response

Guidance on developing and implementing a national contingency plan

Terrestrial Animal Health Code chapter on ‘infection with rinderpest virus’ is adopted 2013

FAO template of national contingency plan is developed

Draft Schematic on Core Elements for International Global Response to an Outbreak of Rinderpest
Guidance for OIE Labs

• Must report possession of RCVM
• Concern about labs unaware of stored virus, i.e. NIH smallpox discovery
• RPV must be held at high level of containment; 28 labs with some material held at inadequate level
• Labs must destroy or move to current OIE reference laboratories
Future plans

- Sequestration of RPV at a limited number of holding facilities
- Continued destruction or movement of RPV to holding facilities
- Development of an international preparedness plan
- Regional outreach for government education and training
- Development of disease surveillance system at national, regional and global levels for early detection and rapid response
Thank you for your attention