



Rabies in the Caribbean
The First Regional Conference on Research and
Surveillance on Emerging and Vector-borne Animal
Diseases in the Caribbean
21 April, 2015 . Guadeloupe.

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Countries with Rabies Main Animal Reservoir and No. of Cases

Country	Animal Reservoir	Average no. animal cases / year
Belize	Dog, Fox. Bat	1 - 5
Cuba	Dog, Mongoose	d.n.a.
Dominican Republic	Dog, Mongoose	d.n.a.
French Guyana	Bat	d.n.a.
Grenada	Mongoose	1 - 5
Guyana	Bat	1 - 5
Haiti	Dog, Mongoose	d.n.a.
Suriname	Bat	n.s.
Trinidad	Bat	6- 10
Puerto Rico	Mongoose	> 20

n.s. : no surveillance
d.n.a.: data not available

Rabies Notifications

- **Most countries - last human case > 20 years ago**
- **Countries with older (> 5 years) notification of animal rabies cases:**
 - Suriname ?
 - French Guyana (2009)
- **Countries with recent (< 5 years) notification of animal rabies cases:**
 - Belize (2012)
 - Cuba (2014)
 - Dominican Republic (2014)
 - Grenada (2010)?
 - Guyana (2014)
 - Haiti (2014)
 - Puerto Rico ?
 - Trinidad (2014)

*OIE WAHID Interface: Animal Health Information:
http://www.oie.int/wahis_2/public/wahid.php/Diseaseinformation/statusdetail*

- **Last human case 2008**
 - First ever reported
 - Epidemiologically linked to bat bite
- **Passive Surveillance**
 - Clinical suspicion
 - Vector biting incidence
- **Diagnostics:**
 - Pasteur Institute (French National Reference Center for Rabies)
- **Vaccination (mandatory)**
 - Domestic carnivores
 - Ruminants
- **Challenges**
 - Illegal importation (land borders – Suriname, Brazil)
 - Underreporting of bites
 - Lack of veterinary coverage

- **Last human case 1989**
- **Passive Surveillance**
 - Clinical suspicion
- **Diagnostics:**
 - BAHA and MIDA, Panama
- **Vaccination (recommended)**
 - Domestic carnivores (MoH)
 - Cattle (BAHA)
- **Importation protocols**
 - Vaccination prior to entry

- **High human mortality**
 - Cases from clinical signs (paralytic > furious)
- **Rabies cases distributed throughout country with some high risk areas identified**
 - Most notifications in cities and sub-urban areas
 - Underreporting exists
- **Passive surveillance**
 - Clinical observation
 - Ministries of Agriculture and Health
- **Vaccination:** not mandatory
- **Challenges:**
 - Irregular unsustainable notification system
 - No budget
 - Difficulties in sending viable diagnostics samples for dx

- **Last human case 2003**
 - Vector: Dog (mongoose –transmitted rabies)

- **Passive Surveillance**
 - PR Dept of Health → CDC
 - Mongoose bite report investigation

- **Active surveillance**
 - Mongoose population survey
 - US Fish and Wildlife Services

- **Vaccination (mandatory)**
 - Livestock
 - Domestic Carnivores

- **Last confirmed outbreak in humans in 1998**
 - Hinterland
 - 5 children died (15 person bitten)
 - Trend: every 8-10 years (anecdotal)

- **Diagnostics**
 - Laboratory not equipped
 - Infrastructure not in place for sending samples

- **Passive Surveillance**
 - Clinical observation

- **Vaccination**
 - Not mandatory for domestic animals, no program

- **Import control**
 - Vaccination of dogs and cats

- **Last human case 1937**
- **Passive Surveillance**
 - Based on clinical suspicion
 - Sample tested for confirmation
- **Active Surveillance**
 - Bat (*D. rotundus*) population routine testing
 - Concomitant vector control
- **Diagnostics**
 - DFA
- **Vaccination (mandatory)**
 - Cattle
 - Horse, sheep, goats (upon request/ bat biting reports)
- **Import control**
 - Domestic carnivores
 - Rabies vaccination and titer testing prior to entry

- **Last human case 1974**
- **Passive Surveillance**
 - Based on clinical suspicion
 - Sample tested for confirmation
- **Active Surveillance**
 - Mongoose population
- **Diagnostics**
 - DFA, PCR and Histopatholgy
- **Vaccination (recommended)**
 - Cattle
 - Domestic carnivores

- **Last human case ?**
- **Passive Surveillance**
 - Based on clinical observation
- **Diagnostics: none**
- **Vaccination (recommended)**
 - Cattle
- **Vector control**
 - Targets bat population
- **Import control**
 - Rabies vaccination prior to entry

CaribVET Veterinary Public Health Working Group

Rabies Subgroup:

➤ Group Members:

- Alexandra Vokaty (Chair, VPH WG)
- Janine Seetahal (Coordinator, Rabies Subgroup)
- Jennifer Pradel
- Bowen Louison
- Colin James
- Astrid Van Sauers
- Rohini Roopnarine
- Charles Rupprecht (co-opted)

➤ Countries Represented:

- Grenada, Guyana, Trinidad, Suriname
- To include representation from: PR, Cuba, DR. Haiti and French Guyana

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Rabies Subgroup: Activities

➤ **Survey on the status of rabies in the Caribbean Region**

- Questionnaire administered to 33 countries (21 responses to date)
- Results analyzed

➤ **Literature review of rabies in the Caribbean**

- Draft literature review prepared and comments received from WG
- To be collated with results of regional survey
- Final version to be submitted for publication

➤ **Regional Rabies Diagnostic Training Workshop**

- December 2014
- Target countries: Grenada, Guyana, Trinidad and Tobago, Suriname
- Routine diagnostic techniques (DFA)

➤ **Circulation of rabies educational material relevant to the Caribbean**

- Bat and Mongoose rabies
- Target audience: general
- Source of material: GARC website, member countries

Training Workshop on Laboratory Methods for Rabies Virus Diagnosis Dec 15th – 19th 2014

- **Host:** St. George's University, Grenada
- **Source of funds:** 10th EDF through IICA SPS project
- **Trainer:** Dr. Charles Rupprecht
- 13 participants (5 countries)
 - Veterinary lab staff with responsibility for rabies diagnostics
 - Guyana, Haiti, Suriname, Trinidad, Grenada
- **Focus on diagnostics (DFA) with additional areas:**
 - Epidemiology
 - Pathobiology
 - Prevention and control
 - Laboratory safety
- **Pre and Post tests indicate a more thorough grasp of the subject**





CaribVET

Preliminary Results

Active surveillance

May 2011 – Mar 2013:

171 trapped mongooses

- Preliminary Rabies Virus Prevalence:
0.5 – 1.5%
(→ Implication: 2000 rabid mongooses in an estimated island population of 200.000)
- Viral Characterization:
distinct variant within Cosmopolitan RabV group (genotype 1)
- Sero-Prevalence:
currently being tested



Ref: Zieger *et al.*, 2013