Rabies, Wildlife Rehab and the Road to Recovery

Using LEAN to Reduce Rabies Exposure in a Wildlife Rehabilitation Center

Lea Peshock
Licensed Wildlife Rehabilitator
Greenwood Wildlife Rehabilitation Center

Jamie Feld, MPH
Communicable Disease Epidemiologist
Boulder County Public Health
Partnered to Apply Lean Approach to Prevent Rabies

I. Examined Background
II. Identified Current State
III. Developed Goal
IV. Conducted Root Cause Analysis
V. Enacted Countermeasures
VI. Checked Results
VII. Followed-Up
VIII. Sharing Conclusions
I. BACKGROUND

Relevant historical data
I. Rabies is a Preventable Viral Disease Of Mammals

- Infects the nervous system and causes swelling of the brain and death
- From bite, scratch or salvia of rabies infected animal
Rabid Raccoons Reported in United States 2009
Rabid Skunks Reported in United States 2009
Distribution of Major Terrestrial Reservoirs of Rabies in the United States
I. Terrestrial Rabies Increased in 2014

2014 Data
137 rabies + specimens in Colorado

23 rabies + in Boulder County
- 12 bats
- 6 skunks
- 1 fox
- 1 raccoon
- 1 coyote

Animals Positive for Rabies

Rabies is increasing in Boulder County. Protect your family by making sure all of your animals are up-to-date with vaccinations and by making sure not to touch any wild or stray animals.

Wild animals can travel great distances, so it's important to take precautions against rabies even if there have not been any animals testing positive for rabies near you.

The data in this map reflects case investigations performed by Boulder County Public Health. Other entities also monitor for rabies and some test results may not be included here.

Learn more about rabies at www.BoulderCountyRabies.org.

Positive Rabies Counts for 2015
- Skunk: 7
- Bat: 6
I. Greenwood Wildlife Rehabilitation Center is Key Partner in Boulder County

- Began in 1982, one of largest rehab facilities along Front Range
- Care for 2000-3000 animals annually
- Not permitted to care for:
  - Bats
  - Skunks
  - Rattlesnakes
  - Birds of prey
  - Mammals larger than coyote
  - Deer, elk, moose
- Rehabiders are front line for zoonotic diseases like rabies
I. Terrestrial Rabies Increased Need for Collaboration

• July 2014 – fox and raccoon tested positive for rabies
• Seven staff members recommended rabies post-exposure prophylaxis due to possible exposure
II. IDENTIFIED CURRENT STATE

Detailed description of the situation (before improvements)
II. What was Working?

- Isolation/Quarantine
- Charting
- Testing with APHIS
- Disinfecting equipment
- Pre-Exposure Prophylaxis
II. Prior to Lean Intervention

- Not consistent use of gowns
- Exposed Skin
- Not using proper holding techniques
- Not reporting human contact to public health
- Not tracking well who is caring for animals
III. DEVELOPED GOAL STATEMENT

Developed specific goal to address the gap or target state from the current state
III. Goal Statement

• Prevent human, pet and livestock exposure to vector-borne disease

• Specifically, prevent rabies and ensure the best follow-up actions

• Define “human exposures” and “pet, livestock exposures” to vector-borne disease

• Connect wildlife rehab community to public health
IV. CONDUCTED ROOT CAUSE ANALYSIS

Utilized analytic techniques to uncover the root cause of the problem
IV. Animals Can Be Irresistible & Humans Want to Help

- Public bringing in huge influx of animals (i.e. 10 raccoons per day)
- False sense of security
- Insufficient public knowledge
V. ENACTED COUNTERMEASURES
Identified and enacted countermeasures to reach target state
V. Improved PPE
V. Improved Signage

Limited vectors species to those with pre-exposure rabies vaccine
V. Improved Reporting

www.greenwoodwildlife.org
303-823-8455
RABIES FACT SHEET 2015

- What is rabies? Rabies is a viral disease that infects the nervous system, causing swelling of the brain and death.
- Rabies in Colorado wildlife. Rabies is found mostly in skunks and bats, but all species of carnivores, including foxes and raccoons, can also contract this disease. Mammals such as squirrels, wood rats, and bunnies are rarely infected as they are unlikely to survive an attack from a rabid animal.
- How is rabies spread? Rabies is found in the saliva (spit) of infected animals and is most often spread from one animal to another by a bite. The virus can be transmitted through a wound, open cuts in the skin, or onto mucous membranes like your nose and eyes. It is rarely spread airborne.
- How do I know if an animal has rabies? You cannot tell if an animal has rabies just by looking at it. Rabid animals may have trouble walking, flying, eating, and drinking because the virus affects the nervous system. Some show very few symptoms, especially in the early stages.
- Can people contract rabies? All mammals, including humans, can contract rabies, which almost always causes death unless post-exposure treatment is given.
- What should I do if I have been or think I may have been bitten, scratched or in contact with saliva from an animal? Promptly call your doctor for advice if an animal bites you. Call Boulder County Health Department at 303-413-7500 to report the injury.

I have read and understand the Rabies Fact Sheet and understand the risks involved with handling a rabies vector species.

Signature __________________________ Print name __________________________ Date __________
V. Posted Public Health Info

<table>
<thead>
<tr>
<th>Address/Number</th>
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<tbody>
<tr>
<td>Greenwood Wildlife Rehabilitation Center</td>
</tr>
<tr>
<td>Phone Numbers</td>
</tr>
<tr>
<td>Emergency 303-823-8455</td>
</tr>
<tr>
<td>Non-Emergency 303-545-5049</td>
</tr>
<tr>
<td>Physical Address</td>
</tr>
<tr>
<td>5761 Ulte Highway Longmont, CO 80503</td>
</tr>
<tr>
<td>(exit 243 off I-25, west past 75th and Highway 66 intersection, near Lyons)</td>
</tr>
<tr>
<td>Mailing Address</td>
</tr>
<tr>
<td>P.O. Box 18987 Boulder, CO 80308</td>
</tr>
<tr>
<td>Tax ID 84-1228158</td>
</tr>
<tr>
<td>Website <a href="http://www.greenwoodwildlife.org">www.greenwoodwildlife.org</a></td>
</tr>
<tr>
<td>Email <a href="mailto:reception@greenwoodwildlife.org">reception@greenwoodwildlife.org</a></td>
</tr>
<tr>
<td>Tech Numbers</td>
</tr>
<tr>
<td>Skybeam (Internet) 303-774-0166</td>
</tr>
<tr>
<td>Century Link (Phones) 877-453-9407</td>
</tr>
<tr>
<td>Longs Peak Water District 303-776-3847</td>
</tr>
<tr>
<td>Division of Wildlife (CPW) (Denver Office) 303-291-7227 (M-F 8 to 5)</td>
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<tr>
<td>USFW (United States Fish and Wildlife) 303-236-8171</td>
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<tr>
<td>City of Boulder Animal Control 303-441-1874 (direct)</td>
</tr>
<tr>
<td>303-441-3333 (dispatch)</td>
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<tr>
<td>Boulder County Animal Control 303-441-4444 (dispatch- ask for AC)</td>
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<tr>
<td>City of Longmont Animal Control 303-651-8500</td>
</tr>
<tr>
<td>Jack Murphy/ Urban Wildlife Rescue 303-340-4911</td>
</tr>
<tr>
<td>303-726-0588 (e) Do not give out</td>
</tr>
<tr>
<td>Health Dept</td>
</tr>
<tr>
<td>Weekend/Nights/Holidays 303-441-1100</td>
</tr>
<tr>
<td>303-370-9395</td>
</tr>
<tr>
<td>Valmont Reservoir: ok for all wildlife releases just call at gate and let supervisor know what you releasing. Plant manager Mark Fox: 303-885-2153-cell 303-440-2539-office</td>
</tr>
</tbody>
</table>

* Must have pre-exposure rabies vaccine to work with rabies vector animals... |

Volunteers and Interns!!

DO NOT catch an escaped raccoon by yourself!!

Notify staff if a coon is out. They will catch it and return it to the cage.

* Please report any and all bites/scratches to Animal Care Supervisor
V. Additional Improvements
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- Protective equipment (long sleeves, gowns)
- Mandatory gloves
- Pre-exposure vaccination
- Gown in quarantine room
- Separate areas- limited access
- Training –safety, restraint
- Examine animal outside first
- Euthanize ill animals
- Intake information
- Double doors
- Paper trail and initialing
- Signs

- Volunteer Manual and Staff Manual with zoonotic solution
- Licensed staff, skilled intake staff
- Documentation of medical assessments
- Home rehab limited to 2 licensed rehabbers
- Vaccinate rabies vector species
VI. CHECKED RESULTS
Produced quantitative comparison of actual results versus the goal
VI. Reduced Exposure and Increased Communication

All rabies vector species with animal or human contact have been tested in 2015 thus far
VII. FOLLOWED-UP

Continued improvements in order to continuously improve quality
VII. Continual Improvement - Webpage

**Found a Raccoon**
I Found a Raccoon, Now What?

WARNING! - RACCOONS ARE A RABIES VECTOR SPECIES. Do not touch a raccoon until you have spoken with a rehabilitator. DO NOT ALLOW PETS OR CHILDREN TO MAKE CONTACT OF ANY SORT. CALL GREENWOOD WILDLIFE at (303) 823-8455. If we are closed, please follow the instructions on Rescue a Raccoon below.

If the raccoon requires immediate assistance, please call your local animal control office.

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**Found a Bat**
I Found a Bat, Now What?

Never handle a bat with your bare hands! Bats are a rabies vector species.

If your pet catches a bat or you find one in or around your house, call your local health department. Take precautions so you're not bitten or scratched. Wear heavy gloves or use a stick or a shovel to pick up the bat. Confine it in a container, such as a coffee can. Slide cardboard under the can and tape it closed.

Contact your local health department or animal control office to report the incident. These agencies can determine if the bat can be released or should be tested. If your pet was bitten by a bat, had a bat in its mouth, or was near a grounded bat, contact your veterinarian in addition to your local health department or animal control office.

Providing public awareness through Greenwood Wildlife webpage
VII. Continual Improvements - Fencing

Hotwire, so that no outside animals can have contact, to be installed dependent on funding.
VII. Areas for Improvement

- Intermittent pick up of injured wild animals
- Courier services for testing needed
- PSA for public about rabies risks
VIII. SHARED CONCLUSIONS

Disseminating lessons learned
VIII. Lack of Wildlife Rehab Regulation in Colorado

No regulations in state requiring gloving, gowns, any PPE or pre-exposure

Every county in state of Colorado has a facility or private rehabbers

Most rehabbers do not know name of person at public health
VIII. Be Proactive, Develop Relationships

- Get in touch with rehab community
- Share info about zoonotic diseases
- Ensure specimens are sent to Colorado Department of Public Health
- Develop rapport and plan for positives during off-season
VIII. How Public Health Can Work with Wildlife Rehabbers?

- Email for handout of statewide rehabbers
- Introduce self and develop rapport
- Give local stats
- Get rehabbers on distribution list for weekly zoonotic reports
- Recognize PPE is not required for licensing
- Provide awareness of all zoonotic and enteric diseases
- Provide information on zoonosis conferences
VIII. Lean Process as Tool for Organizational Change

Limitations
- Can be cumbersome (we streamlined)
- Some limitations to process measurements

Strengths
- Process improved transparency
- Collaborative
- Solution-focus
- Partner agency is responsible for implementation
Don’t look back, BUT forge ahead!
Acknowledgments

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• Marshall Lipps, Environmental Health Specialist II
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• Indira Gujral, Communicable Disease Division Manager