



# Rabies Awareness And Community Education



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### Abstract

The purpose of this project was to increase awareness of rabies as a disease process and develop various mechanisms for preventing rabies exposure. We utilized several methods to achieve our goal:

- Fostering collaboration between local veterinarians and New Hanover County Animal Control Services (NHCACS).
- Implementing rabies awareness and responsible pet ownership training at the elementary school level.
- Developing a mentoring partnership with students involved in the University of North Carolina Wilmington (UNCW) Pre-Veterinary Medical Association (PVMA) organization.
- Educating the citizens of our community in cooperation with the New Hanover County Health Department and local media resources.

The end result of the project will be increased public awareness to the threat of rabies virus exposure and means of preventing this fatal disease. Education will be accomplished at all levels throughout the county. The program will be sustained for continued use by expanding our resources through the mentoring of current and future UNCW student educators. We hope ultimately to develop a program template that can be duplicated by partner animal control agencies throughout the state and beyond.

### Introduction / Background

It is an established fact that untreated definitive rabies virus exposure results in the death of the victim. Since 1996, New Hanover County has had 91 cases of rabies. The majority of these have been in wild animals. Over the past 45 years, the overall trend in annual cases of rabies in the United States is increasing, but the incidence in domestic animals has decreased. The explanation for this decrease is that since the 1950's municipalities have required rabies vaccination for dogs and cats, so that today the majority of cases are in wild animals, clustered where the vectors are located. Domestic animal vaccination has had two major effects. First, it has lowered the incidence of rabies in dogs and cats. When dogs are the principal reservoir of rabies, as is the case in developing countries, there is a greater probability for human exposure than when wildlife is the reservoir. Second, it has been demonstrated that routine vaccination of dogs and cats prevents transmission of

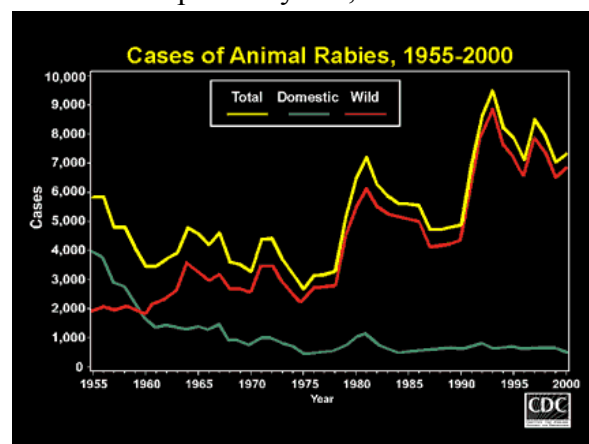


Figure 1. Cases of Animal Rabies in the US, 1955-2000

rabies from wildlife to domestic animals, thereby serving as a barrier to exposure of humans. By increasing awareness of the need for domestic animal vaccination, we not only prevent the disease in these animals, but we also prevent potential exposure to humans.

Two landmark cases in our immediate vicinity highlight the severity of unchecked rabies disease and the need for community education. The first is the story of Johnny. Johnny



Figure 2. Johnny

was a stray puppy that was brought to College Road Animal Hospital by NHCACS after being found by a Good Samaritan. He had what appeared to be an open fracture of his right radius and ulna. The problem is, Johnny also turned out to have rabies. After being in the hospital for over two weeks he started to get sick. When he developed neurologic signs, we reluctantly decided to euthanize him, and had him tested for rabies. The results came back positive the next day, sadly right before the Christmas holiday.

Fifty people had been exposed to Johnny and needed Post-Exposure Prophylaxis. For most, treatment involved Human Rabies Immune Globulin and 5 rabies shots. The cost was over \$400,000, not to mention the discomfort inherent to the shots and the inconvenience of having to go to the Emergency Room multiple times. We were fortunate that we had suspected Johnny as being rabid. When discussing the case with the local veterinary community, fewer than ten percent said that they would have suspected and tested him for rabies. The consequences of missing rabies in Johnny would have been devastating, and as a result, he has become the poster child for our project.

The second story is not nearly as dramatic, but equally as cogent, and illustrates the need for understanding public health laws and practice with regard to rabies. Two dogs were in an altercation with a prominent rabies vector, a raccoon, which potentially exposed the pets to rabies virus. Unfortunately, a local veterinarian gave the dogs' owners erroneous advice regarding post-exposure management. When the error was discovered, it resulted in the State Public Health Veterinarian's recommendation, based on North Carolina law, to have both dogs humanely euthanized. The only alternative in this case would be to quarantine the dogs for six months at NHCACS or a local veterinary hospital, at a significant cost to the owners. The veterinarian's incorrect guidance was the result of a misinterpretation of the public health laws. The need to educate our community was again clearly demonstrated.

## Project Description, Objectives and Methodology

The overall objective of our project was to increase rabies awareness and prevention in our community. We addressed this goal at several levels:

- **Educate the local veterinary community.** Local veterinarians have a significant impact on rabies awareness among their clients and are the first-line providers of rabies vaccinations in our community. Besides increasing their effectiveness in providing vaccinations, we also aimed to ensure that their advice to clients, particularly with regard to post-exposure management, would be accurate. To accomplish this, we developed and presented a public health forum on rabies awareness for the local veterinary community, to deliver information about rabies prevention and post-exposure management.
- **Educate elementary-aged students in New Hanover County.** It has been a long term goal of the NHCACS to develop an educational program for children. The lack of manpower has been a deterrent to making this program effective. To reach this audience, we partnered with the PVMA at UNCW, which was looking for a service project. We had the perfect mix of an educational program and motivated individuals to deliver it. Mentoring of the PVMA students was a significant additional benefit of this project. We mentored the original students, and each year students who have been involved in the educational program will mentor new students in its content and delivery.
- **Educate the population at large.** To reach this audience, we mapped out a strategy to appear on radio, television, and in the print media, delivering the message about vaccination requirements and rabies prevention.
- **Increase rabies vaccination rates.** In conjunction with World Rabies Day, September 8, 2007, we, in partnership with the PVMA and UNCW, organized an on-campus rabies vaccination clinic, providing no-cost rabies vaccinations for the companion pets of staff, faculty, students, and citizens living in close proximity to the university.

## Results

### Local veterinarians

The first New Hanover County Public Health Forum on rabies awareness and prevention was held April 10, 2007. We invited all of the practicing veterinarians in the metropolitan area, and secured permission from the North Carolina Veterinary Medical Board to offer one hour of continuing education credit for each hour of attendance at our forum. We approached Merial, Inc., the manufacturer of Imrab brand of rabies vaccine, and they provided dinner in order to promote their product. The meeting was very successful, with 36 veterinarians attending from the surrounding community. Dr. Carl Williams, North Carolina State Public Health Veterinarian, attended as well. His insight regarding some of the questions was very helpful, and gave authenticity to what we were trying to accomplish.



**Figure 1. Public Health Forum**

Our efforts have multiplied since that first presentation. First, several veterinarians in attendance asked that we provide this information for their lay staff. We had not

anticipated the need to repeat the forum, but we recognized that this was truly a logical extension of what we were trying to accomplish. While the veterinarians were the decision-makers regarding rabies exposure, the lay staff were most likely to communicate with clients regarding potential rabies exposure. On July 31, we presented our forum for lay staff of area veterinary hospitals. In addition, two veterinarians who were unable to make the initial Public Health Forum attended this presentation.

Dr. Williams' attendance at our April forum resulted in two additional invitations to future events. He serves on the Environmental Health State of Practice Committee, which is a non-profit group providing continuing education to Environmental Health Specialists. We were asked to contribute to a workshop on zoonotic diseases sponsored by the group in Greensboro, NC. We presented on Wednesday, August 8. Finally, we presented at the North Carolina Animal Rabies Control Association conference at the end of October. We again told Johnny's story, once again using the unfortunate loss of one puppy to perhaps save many like him. These are just two examples of how our effort to promote rabies awareness has been multiplied. We were beginning to see John Maxwell's adage in action – namely, "Momentum is a leader's best friend."<sup>1</sup>

### **Educating elementary students and other activities of the PVMA**

A relationship had already been forged with the PVMA, so they were a logical target to focus on mentoring and development of a viable community partner to help deliver our message. We approached the group about doing rabies education in the elementary schools, which became a reality during April as a part of our paired contribution to public health month. Training the students utilizing our established puppet show was a joy, especially since they developed their own materials for the schools. The upperclassmen will train the incoming students each year, so this project has sustainability and duplication.

Undeniably the biggest surprise of our project was the rabies clinic hosted by the UNCW PVMA on September 8, 2007. The club came up with the idea of a rabies clinic on campus for a service project, and this was a great endeavor to include in our SEPHLI Leadership Project. It was fortuitous that we could hold it on the inaugural World Rabies Day, which is part of a global rabies awareness campaign to spread the word about rabies prevention that was spearheaded by the US Centers for Disease Control and Prevention (CDC) and the UK charity Alliance for Rabies Control. The goal of the campaign was to bring together relevant partners including international health organizations, national, state and local public health partners, professional organizations, commercial pharmaceutical companies and foundations in an effort to address rabies prevention and control globally. An initial



**Figure 2. UNCW Rabies Clinic**

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<sup>1</sup> Maxwell, "The 21 Irrefutable Laws of Leadership," Nashville, Nelson, 1998, 165

major effort was the declaration of the inaugural World Rabies Day, September 8, 2007. Events were planned throughout the world to increase awareness about rabies and to raise support and funding towards its control and prevention. The CDC's hope was to have 55,000 worldwide participants, to commemorate the number of annual human rabies deaths throughout the world. Students had the opportunity to do media broadcasts to promote this event, and Wilmington, NC, gained international attention in a spot on the CDC web-site as a featured event.

The PVMA recognized an opportunity to not only increase rabies awareness, but to do something to actually prevent the disease, so it seemed logical to hold their clinic on World Rabies Day. This event was listed on the World Rabies Day website, [www.worldrabiesday.org](http://www.worldrabiesday.org), and was listed as the feature event on Thursday, August 30. Planning for the event brought together the PVMA, and several community partners, including the New Hanover County Health Department, and NHCACS. The outpouring of support was unprecedented, including the donation of over one thousand doses of rabies vaccine by various manufacturers, and donations of materials, time, and financial resources by numerous community partners, including The New Hanover Humane Society, Friends of Felines, the New Hanover Kennel Club, and College Road Animal Hospital. Four veterinarians donated their time to administer the vaccinations, and together we vaccinated 385 dogs, cats, and ferrets for rabies.



**Figure 3. Katie Hughes doing surgery at NHCACS.**

Another aspect of mentoring facilitated by this project was the volunteering of PVMA students at NHCACS. Students gain surgical experience at the onsite spay/neuter facility while volunteering their time to help at the clinic. This time is important when it comes to their application to veterinary school. One student, Erin Siltamaki, volunteered during her undergraduate career at UNCW, and is now attending veterinary school at Purdue University. She mentored Katie Hughes, who is a UNCW senior this year and will be attending veterinary school next year. Katie is mentoring underclassmen so that the program will be self-sustaining in years to come. The benefit to both the students and NHCACS is clear. The students gain invaluable experience, and the shelter gets volunteer labor at no cost to the county. Both entities work towards the goal of finding homes for unwanted animals, and both benefit from the mentoring effort.

Mentoring came in another surprise venue during the beginning of the school year. We were asked to present on community partnering at the Student Organization Leadership Conference (SOLC). The SOLC is an annual event held to enhance the training of student organization leaders. Community partnering is a way to leverage limited resources and manpower, so we were delighted to share our experience with the PVMA with other students in hopes that they would benefit from what we have learned. We also presented a program on Ethical Decision Making, which we believe is an important



**Figure 4. SOLC Presentation.**

aspect of the students' training. The students presented with us; thus they had the opportunity to deliver a topic to a group audience. The essence of mentoring is sharing experience with those you are teaching. We believe that experiential learning is important, so they shared our time at the podium.

### **Ancillary activities.**

Beyond merely adding to activities planned from the start (such as holding more forums for veterinarian professionals than we had planned), the original project has mushroomed into multiple ancillary activities not anticipated when we began. An example of the magnification of effect was the request by one of the veterinarians who volunteered at the UNCW Rabies Clinic (itself unanticipated) for us to host a similar clinic in Brunswick County, her home county that borders New Hanover County. The students jumped at the opportunity, and on Saturday, October 20, we hosted this clinic, in partnership with Brunswick County Animal Services. An additional 133 animals were vaccinated against rabies.

One more spin-off of the year has resulted in a NHCACS fund-raiser to memorialize Johnny. Each year the shelter has conducted a stuffed animal sale to replenish their trust fund. The available animal this year happened to be a puppy, so it was a natural follow through to name it Johnny. This is one more successful way for us to do rabies education by commemorating the New Hanover County puppy that became our first canine rabies case in nearly fifty years. The message is that "just one puppy is one too many." All we have completed and what we intend to continue exemplifies our NHCACS motto, "Your pet, our priority."

Our mentors have been our greatest cheerleaders throughout implementation and expansion of our project. Specifically, they encouraged us to publicize our accomplishments and the results of our efforts. This was evidenced by the opportunity to publicize the relationship between NHCACS and the PVMA, as well as the on-campus rabies clinic, in a newspaper wrap, in radio announcements, and multiple television appearances.

### **Conclusion**

What an undertaking this has been! The original goal of our project was to increase awareness of rabies and its prevention by fostering collaboration between local veterinarians and New Hanover County Animal Control Services, implementing rabies awareness and responsible pet ownership training at the elementary school level in partnership with the Pre-Veterinary Medical Association at the University of North Carolina Wilmington, and educating the citizens of New Hanover County in cooperation with the New Hanover County Health Department and the local media. This project blossomed and magnified to a point where it essentially took on a life of its own. In their book, *Leadership on the Line*, Heifetz and Linsky state, "Whatever vehicle you use is less consequential than realizing the continual possibilities for service that will surround

you.”<sup>2</sup> That is the essence of our project. We continually recognized possibilities to leverage our resources and magnify the impact of all that we were trying to accomplish.

Our original goal of increasing rabies awareness and its prevention was accomplished, and exceeded, by the public education portion of our campaign. Through educating professionals and community members, we have increased understanding in this area. Further, our partnership vaccinated 385 animals at the September 8<sup>th</sup> PVMA Rabies Clinic and an additional 133 animals were vaccinated on October 20<sup>th</sup>. Vaccination is the ultimate way to prevent rabies, in both animals and their humans. The PVMA Rabies Clinics served the dual purpose of educating and preventing. An additional benefit of the clinics was the mentoring aspect. The student leaders of today were training students of tomorrow so that the on-campus clinic can be an annual event at UNCW.

Several veterinarians have told us that they now have a clearer understanding of rabies and what actions to take in a potential exposure situation, and we are planning to make the public health forum for veterinarian professionals an annual event. Each year we will focus on some aspect of public health and veterinary medicine, such as zoonotic infectious diseases, zoonotic parasitic diseases, and, of course, rabies. Such a public health forum has numerous benefits, in addition to disseminating information. Enhancing communication between the Health Department, NHCACS, and the local veterinary community is a key benefit.

The PVMA is making the rabies awareness education program for schoolchildren an annual, recurring project. Educating children about responsible pet ownership, dog safety, and rabies prevention will ideally filter back to the family, as well as be remembered when the children grow up and have pets of their own. This ongoing project is part of the mentoring aspect of our plan. Senior students train the underclassmen to deliver the message. In such a manner, the program can be self-sustaining with minimal resources from the county.

In retrospect, there will be three recurring legacies from our project:

1. Annual Public Health Forum(s).
2. Annual Rabies Awareness Education in the Elementary Schools.
3. Annual UNCW Rabies Clinic in conjunction with World Rabies Day.

Not a bad legacy to leave the community with. It is our sincere hope that our efforts will result in no more Johnnies. As we mentioned earlier, he has become the poster child for our project in hopes that his death will not have been in vain. We hope that as people are educated, animals can be spared his fate and humans can be spared the trauma of losing a beloved pet or of having to undergo treatment for exposure to rabies. Ultimately, both animals and humans will live longer and healthier lives.

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<sup>2</sup> Heifetz and Linsky, “Leadership on the Line,” Boston, 2002, 220.

## **Leadership Development**

The desire to make a lasting change in our community has been a career goal of the NHCACS team. In *Leadership on the Line*, Heifetz and Linsky state, “Exercising leadership is a way of giving meaning to your life by contributing to the lives of others.”<sup>3</sup> As this project grew in both scope and content, it became apparent that our project had truly become a labor of love, in many ways. We recognized early on that we had the potential to make a significant impact on our community. We also recognized that in order to accomplish this, we would need to come up with some strategies to leverage our limited resources and magnify our effects.

## **Collaboration and Partnering**

Woodrow Wilson once said, “I not only use all the brains that I have, but all that I can borrow.” This is the essence of partnering. We recognized early on the need for a collaborative effort in order for our project to be successful and sustainable. Collaboration allows one to leverage limited resources, and to magnify their results. We partnered with pharmaceutical companies. They donated rabies vaccine for the clinic. They provided dinner for the veterinarians at our public health forum. Sharing activities with the PVMA has increased our people-power, an invaluable asset. Partnering with the Health Department has enhanced our media presence and the ability to disseminate information to the public. The collaborative efforts between industry, the Health Department, Animal Control Services, the UNCW PVMA, and the local veterinary community were essential for our project to grow and have the impact that it did.

## **Visioning and Futuring**

Allophones Karr once said, “Some people are always grumbling because roses have thorns. I am thankful that thorns have roses.” Visioning requires looking at a problem from a different perspective. Recognizing the need for our project was one thing. Visioning a strategy to accomplish it was clearly another. We both gained significant experience in visioning as our project unfolded. “What if we consider...” became our mantra. This took us from a simple rabies awareness education project to one that had multiple educational opportunities, incorporated mentoring to magnify our effect, and ultimately culminated in vaccinating 385 animals against rabies. Additionally, all of these projects will be duplicated annually, which is largely due to our mentoring of PVMA students. None of this would have been possible without significant visioning, and our developing that expertise.

## **Critical Thinking**

When we presented our Ethical Decision Making program to the SOLC, we emphasized the need for critical thinking skills. These skills were necessary for our project in order to leverage our limited resources and magnify our effects. How could we pull this off without using any county funds? We developed strategies for partnering with

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<sup>3</sup> Heifetz and Linsky, “Leadership on the Line,” Boston, 2002, 223.

pharmaceutical companies. They donated rabies vaccine for the clinic. They provided dinner for the veterinarians at our public health forum. Partnering with the PVMA has significantly increased our manpower. Partnering with the Health Department has greatly enhanced our media presence and the ability to disseminate information to the public. All of these strategies required careful, critical thinking in order to accomplish them.

When we began this project, we had no idea that it would become what it did in the end. We had talked for a long time about putting on a public health forum, and SEPHLI seemed like the perfect vehicle to finally accomplish that effort. As Martin Luther King once opined, "You don't have to see the whole staircase, just take the first step." SEPHLI gave us the opportunity to take that first step. In a sense, that is what leadership is all about. We all may have ideas about how to make the world a better place; we all may want to do something. In most instances, we have no idea how to accomplish the big picture, let alone how to begin. As the Reverend Dr. King so eloquently stated, leaders "take the first step," and then they keep on going. SEPHLI got us started, and we climbed all the way to the top.