Rabies Program Activity in Georgia & the North Central Health District (NCHD).

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Abstract

Among the North Central Health District's (NCHD) thirteen counties, the animal bite and rabies data is minimal and it is suspected that underreporting is the reason for such low numbers. Therefore, this capstone endeavors to analyze the reporting data available from the counties within the NCHD and assess the Rabies' Program educational materials. The intent of this project is to promote higher rates of reporting and collaboration among animal control, veterinarians, physicians, laboratories, and law enforcement agencies within the NCHD. In this paper, by researching the local area in comparison to the state, recommendations could be made in hopes of increasing the rates of reporting within the health district.

Introduction

Rabies is a preventable viral disease transmitted most often through animal bites that caused inflammation of the brain and is fatal if untreated. The reporting and surveillance of animal bites plays an important role in rabies prevention efforts. While the Georgia Rabies Control law mandates reporting of animal bites and notifiable diseases by animal control, veterinarians, physicians, laboratories, law enforcement agencies to local health departments, the number of animal bites are often unreported. Therefore, the State Electronic Notifiable Disease Surveillance System (SENDSS) was adopted by all Georgia counties to promote accuracy, follow-up, and cooperation in reporting of animal bite data in 2013.

Among the North Central Health District's (NCHD) thirteen counties, the animal bite and rabies data is minimal and it is suspected that underreporting is the reason for such low numbers. Therefore, this capstone endeavors to analyze the reporting data available from the counties within the NCHD and assess the Rabies' Program educational materials. The intent of this project is to promote higher rates of reporting and collaboration among animal control, veterinarians, physicians, laboratories, and law enforcement agencies within the NCHD.

Review of pertinent literature has indicated that an abundance of literature pertaining to laboratory and basic epidemiologic research, and vaccine development. However, literature pertaining to rabies control actives and particularly "community- effectiveness of intervention" is indeed limited. Therefore, this paper endeavors to add to the body of research (Zinsstag, 2013).

Methods

Retrospective rabies surveillance and bite reporting data for calendar year 2013 was retrieved from the SENDSS database, while data from calendar years 2010-2012 was retrieved from Georgia Department of Public Health, Environmental Health Section's Environmental Health Activity Report Database at the state, district, and county levels.

Data was characterized using standardized definitions for complaints, animal-to-human investigations, animals confined, animals destroyed, tested specimens, positive cases, treated people, and rabies clinics. Data was then analyzed for trends at the county, health district, and state levels.

Results

Data Analysis

The key indicator for the SENDSS pertaining to Rabies Surveillance is the time period from a bite report Environmental Health personnel and their initiating an investigation. The state has outlined 2 days as the target time period from the filing of the bite report to the investigation (Georgia Department of Public Health, 2012). However, the average time period varies among the counties in the District. Since the widespread implementation of (State Electronic Notifiable Disease Surveillance System)SENDSS, rabies reporting activities in the North Central Health District have been found to be dismal (Tables 18 and 19). Trends in data depict elevated time periods elapsing between the time rabies and animal bite incidents are reported and investigation initiation. It was noted that several complaints were investigated on the same day bite reports were received. However, the implications of this data is limited due to inadequate animal bite reporting and rabies surveillance.

Assessment of Educational Materials and Outreach

- The rabies educational materials utilized in the North Central Health District consists of the protocol for the District and the educational packet given to the physicians.
- Regarding rabies and bite prevention, there are a few counties that participate in rabies clinics where local veterinarians perform mass vaccinations on a Saturday in more rural areas of the county. The local Environmental Health Specialist participates and may disseminate rabies materials at that clinic. The number of rabies clinics conducted throughout the District is minimal.
- Environmental Health Specialists have participated in community health fairs, and their participation in community health fairs is being promoted as a priority at this time Additionally, rabies and bite education was encouraged in past years at the elementary school level, but has not been facilitated in recent years. Furthermore, no specific curriculum targeted to school-age children was in use.

Limitations

The limitations of this project include constraints on the availability of information. Information was limited due to the accessibility of retrieving the information and time constraints. Also, information concerning compliance among health care practitioners was not able to be ascertained. Because rabies and animal bite report data is minimal, data and associated conclusions must be viewed in light of this fact. Therefore, recommendations are based on generalizations and historical information.

Table 18. Comparison of Environmental Health Rabies Activity in the State, District, and Individual Counties 2013

	GA	NCHD	Baldwin	Bibb	Crawford	Hancock	Houston	Jasper	Jones	Monroe	Peach	Putnam	Twiggs	Washington	Wilkinson
Complaints		1,164	14	359	60	4	435	32	71	59	30	28	11	43	18
Animal/Animal Investigations		216	3	2	24	0	127	8	21	9	0	11	0	10	1
Animal/Human Investigations		1,013	11	354	52	4	345	30	62	50	21	23	11	33	17

Table 19. Comparison of Number of Days from Bite Report to Investigation in the State, District, and Individual Counties, 2013

	GA	NCHD	Baldwin	Bibb	Crawford	Hancock	Houston	Jasper	Jones	Monroe	Peach	Putnam	Twiggs	Washington	Wilkinson
Average Number of Days from Bite Report to Investigation	5.50	4.30	5.00	3.75	3.35	6.50	1.63	4.59	1.00	20.03	13.50	10.82	2.82	1.23	30.22
Mode	–	0	0,4	0	0	7	0	0	0	0	0	0	0	0	0,59
Median	–	0	4.5	0	0	7	0	0	0	13	2	7	2	0	3.5
Range		0 132	0 12	0 13	0 35	0 12	0 14	0 21	0 20	0 83	0 132	0 53	0 10	0 15	0 111
Number of Investigations	649	1,148	12	356	60	4	433	32	71	59	21	28	11	43	18

Conclusions and Recommendations

Based on the dismal reporting data within the District, the following recommendations have been made:

- *Curriculum utilization or development:* Curriculum development or utilization of a pre-existing, evidence-based curriculum could promote the facilitation of education and outreach activities within the District.
- *Education*: Specific preventive or clinical education efforts should be targeted based on the demographics of bite victims. General education sessions could address the community as a whole
- *Partnerships:* Partnerships should be established with universities and institutions of higher learning to assist the District to identify an evidence-based animal bite and rabies prevention curriculum. Further, sustainable, community partnerships are necessary to increase the capacity of the environmental health department to conduct education and outreach activities.
- *Further Research*: Additional research is needed to examine the attitude toward, and perceptions among, healthcare professionals regarding reporting animal bites. The analysis of emergency room reporting data and symptomatic surveillance may prove to be of benefit in identifying compliance among healthcare providers for reporting animal bites to local environmental health specialists.

References

Acute Disease Section, Epidemiology Program, Division of Public Health, Georgia Department of Community Health. (2011). *Georgia Rabies Control Manual.*

Beck, A., & Jones, B. (1985). Unreported dog bites in children. *Public Health Reports, 100*(3), 315-321.

Bregman, B., & Slavinski, S. (2012). Using Emergency Department Data to Conduct Dog and Animal Bite Surveillance in New York City, 2003-2006. *Public Health Reports, 127*, 195-201.

Centers for Disease Control and Prevention (CDC), National Center for Emerging and Zoonotic Infectious Diseases (NCEZID), Division of High-Consequence Pathogens and Pathology (DHCPP). (2013, September 24). *Rabies*. Retrieved February 17, 2014, from Centers for Disease Control and Prevention: http://www.cdc.gov/rabies/

Centers for Disease Control and Prevention. (2008). Human Rabies Prevention --- United States, 2008. *Morbidity and Mortality Weekly Report, 57*(RR03), 1-27, 28.

Centers for Disease Control and Prevention. (2010). *Rabies and Kids*. Retrieved February 20, 2014, from World Health Organization: http://www.who.int/

Chang, H. G., Eidson, M., Noonan-Toly, C., Trimarchi, C. V., Rudd, R., Wallace, B. J., et al. (2002). Public Health Impact of Reemergence of Rabies, New York. *Emerging Infectious Diseases, 8*(9), 909-913.

Childs, J., Gordon, E., Krebs, J., & Real, L. (2007). Animal-based national surveillance for zoonotic. *Preventive Veterinary Medicine, 78*, 246-261.

Childs, J., Gordon, E., Krebs, J., & Real, L. (2007). Animal-based National Surveillance for Zoonotic disease: Quality, Limitations, and Implications of a Model System for Monitoring Rabies. *Preventive Veterinary Medicine, 78*, 246-261.

Fontanals, V. (2011). *All about Rabies!, a comprehensive educational programme, published by GARC.* Global Alliance for Rabies Control.

Georgia Department of Public Health. (2012). *Environmental Health Report.*

Georgia Department of Public Health. (2014). *Rabies*. Retrieved April 10, 2014, from Georgia Department of Public Health: http://dph.georgia.gov/

Georgia Department of Public Health. (2014). *Rabies*. Retrieved April 10, 2014, from Georgia Department of Public Health: http://dph.georgia.gov/rabies-0

Moore, R., Moulthrop, J., Parker, R., & Zehmer, R. (1977). Surveillance of Animal- Bite Cases in the United States, 1971-1972. *Archives of Environmental Health*, 267-270.

World Health Organization. (2014). *Rabies*. Retrieved February 20, 2014, from World Health Organization: http://www.who.int/

World Health Organization. (2010, September 3). *Rabies: Current Strategies for Human Rabies Pre and Post-exposure Prophylaxis*. Retrieved February 20, 2014, from World Health Organization: http://www.who.int/

World Health Organization. (2014). *Rabies: More than 15 million post-exposure prophylaxis every year*. Retrieved February 20, 2014, from World Health Organization: http://www.who.int/

Zinsstag, J. (2013). Towards a Science of Rabies Elimination. *Infectious Diseases of Poverty, 2*(22), 1-3.

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