



Factors Associated with Inappropriate Administration of Rabies Post-Exposure Prophylaxis in Suburban Cook County, Illinois, 2015-2018

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Rabies post-exposure prophylaxis (PEP)

- Rabies is nearly **100%** fatal without PEP
- PEP = **1 dose** rabies immunoglobulin (RIG) + **4 doses** rabies vaccine in **4 visits** over **14 days**
- Median cost of full course of PEP in an emergency department (ED) for Suburban Cook County (SCC) residents = **\$13,000**

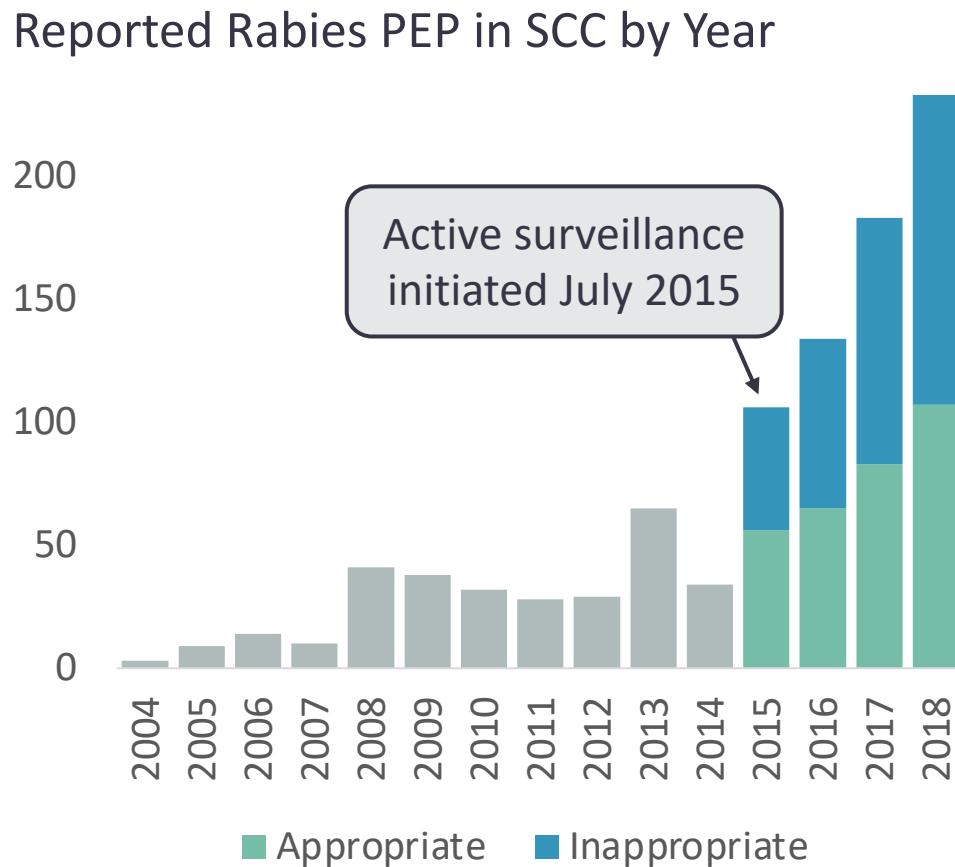
Rabies in Illinois

- No known raccoon, skunk, or fox variant currently
- No dogs & 1 cat positive in the past 20 years
- Most animal cases are in bats
- Last human case was in 1954
- Human rabies exposure and initiation of PEP are reportable conditions



*Distribution of major rabies virus variants
among mesocarnivores in the United States,
2008 to 2015 -CDC*

The majority of PEP is given inappropriately



- From 2015-2018 only 45% of cases receiving PEP met the Advisory Committee on Immunization Practices (ACIP) guidelines for potential rabies exposure

Most common reasons PEP was inappropriate

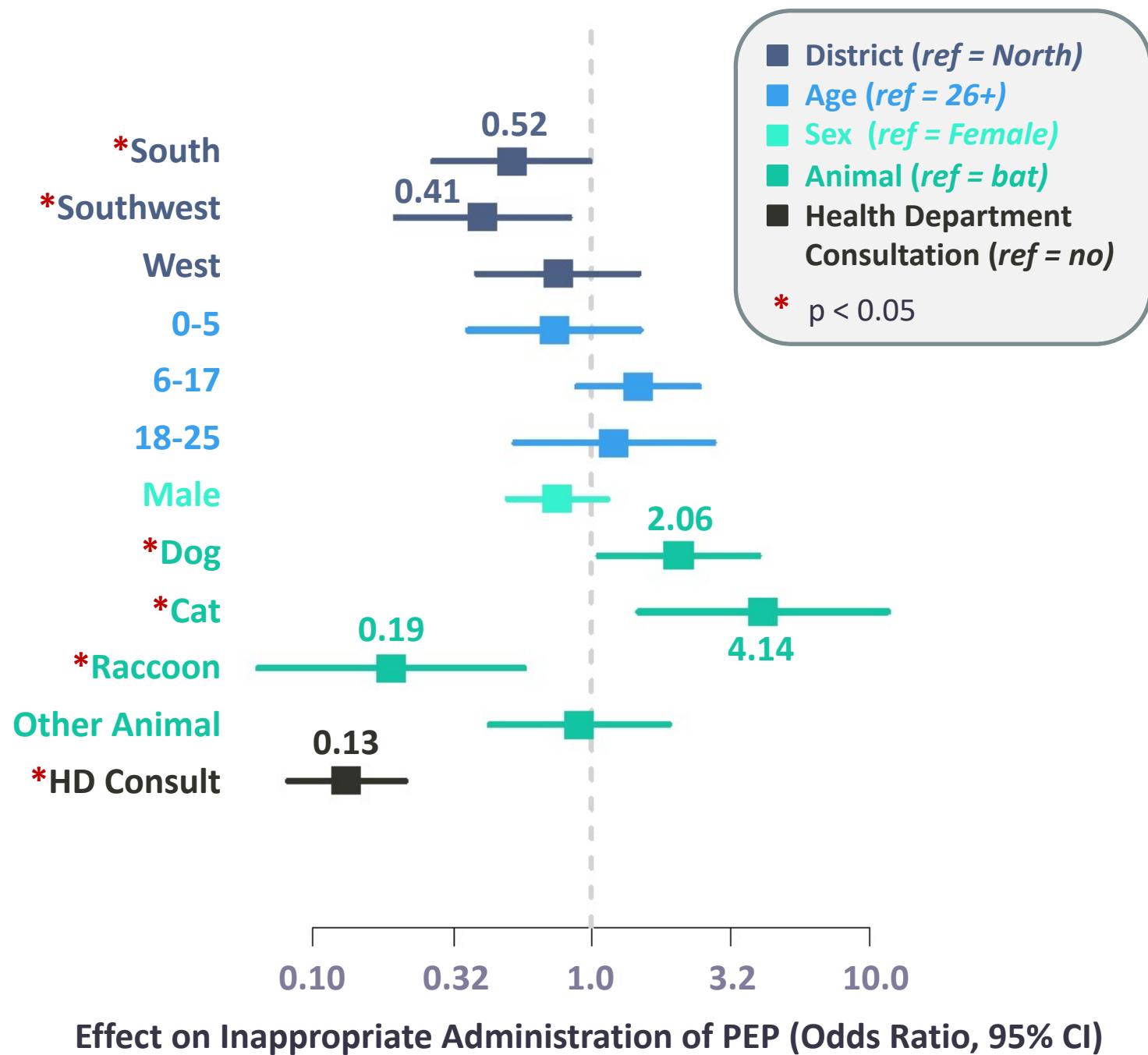
- **Bat in dwelling, no unsupervised/sleeping person**
- **Provoked bite from healthy dog or cat**
- Animal available for confinement or testing
- Low-risk species
- No animal contact
- Animal tested negative
- Animal remained healthy throughout confinement period

Determining factors associated with inappropriate administration of PEP

- **Population:** all SCC residents with PEP reported from 2015-2018 (n=614)
- **Outcome:** PEP given inappropriately (did not follow ACIP guidelines for true exposure)
- **Predictors:** location, age, sex, exposing animal, consultation with health department
- **Model:** generalized estimating equation, controlling for clustering by exposure incident

Factors associated with inappropriate administration of PEP

- Health department consultation (87% reduced odds of inappropriate PEP)
- Type of animal exposure
- Patient area of residence



Room for improvement

- Only **30%** of cases had HD consult
- **295** cases that did not have HD consult and were treated inappropriately over 4 years
- **87% reduction** = **256** could have avoided inappropriate treatment with HD consult
- **\$3 million** in potential savings

		Health Department Consultation	
		Yes	No
PEP Appropriate	Yes	140	134
	No	45	295

Conclusions

- Rabies PEP is overprescribed
- Consultation with a health department was the single most protective factor against inappropriate administration of PEP
- Healthcare providers should be especially mindful when considering PEP for domestic animal exposures
- More informed education efforts with local hospitals are needed

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thanks!

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This study was supported in part by an appointment to the Applied Epidemiology Fellowship Program administered by the Council of State and Territorial Epidemiologists (CSTE) and funded by the Centers for Disease Control and Prevention (CDC) Cooperative Agreement Number 1 NU38OT000297-01-00.