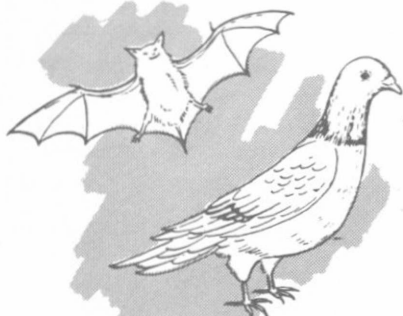
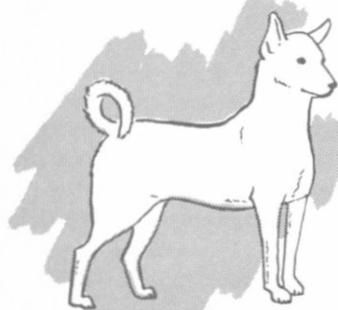
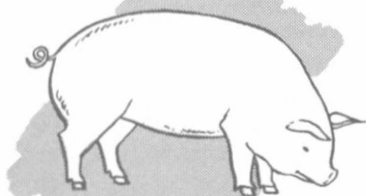
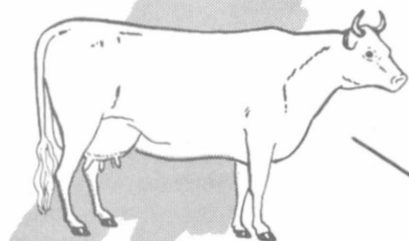


NATIONAL

COMMUNICABLE DISEASE CENTER

# ZOONOSES

## SURVEILLANCE



### PSITTACOSIS

- I. SUMMARY
- II. HUMAN PSITTACOSIS, 1966
- III. CHEMOTHERAPY AND IMMUNIZATION OF PSITTACINE BIRDS AGAINST PSITTACOSIS
- IV. PROPOSED CHANGES OF FOREIGN QUARANTINE IMPORTATION REGULATIONS FOR PSITTACINE BIRDS
- V. DISCUSSION - HOST SPECTRUM OF PL AGENTS

U. S. DEPARTMENT OF  
HEALTH, EDUCATION, AND WELFARE  
PUBLIC HEALTH SERVICE

BUREAU OF DISEASE PREVENTION AND ENVIRONMENTAL CONTROL

# PREFACE

Summarized in this report is information received from health, agriculture and wildlife officials from the various states and their counterparts in the federal government. Much of the information is preliminary. It is intended primarily for the use of those responsible for disease control activities. Anyone desiring to quote this report should verify the data at the original source for accuracy and interpretation.

Contributions to the surveillance report are most welcome. Address:

National Communicable Disease Center, Atlanta, Georgia 30333, Attention: Chief, Zoonoses Investigations Unit, Epidemiology Program.

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## I. SUMMARY

A total of 50<sup>1</sup> human cases of psittacosis were reported from 19 states in 1966, 11 cases fewer than in 1965. This is the lowest number of cases since 1951, when 25 were reported.

Epidemiologic histories on 45 of the cases have been furnished by the states. Parakeets were the most frequently mentioned probable source of infection, with pigeons next in frequency. The greatest risk appeared to be among pet-bird owners.

No turkey, chicken, or other avian ornithosis outbreaks were reported in 1966.

## II. HUMAN PSITTACOSIS, 1966

The geographic distribution of the 50 cases was similar to the 61 cases reported in 1965. Sixteen of the 19 states reporting human cases had reported cases in 1965. Six states reporting human infections in 1965 did not report any cases for 1966.

Nine states reported more cases in 1966 than in 1965; whereas, 12 states reported fewer cases in 1966. The following states reported three or more human cases in 1966: Texas (10), Wisconsin (8), Massachusetts (4), Pennsylvania (4), California (3), Minnesota (3), and Tennessee (3).

The two most common reservoir hosts in past years, parakeets and pigeons, accounted for 73% of the 45 cases for which exposure data were furnished. Parakeets were listed as the most probable source of infection for 24 cases (53%) and pigeons for 9 (20%).

Pet-bird owners comprised the largest exposure category with 21 of the 45 (47%) reported cases occurring in this group. A 9-year-old child who helped his mother gather chicken eggs for subsequent sale is the only case reported which could be considered as occurring in a poultry processor.

Of the 45 human cases studied, 29 (64%) occurred in males. The ages of the 45 reported patients ranged from 3 to 82 years, with a mean of 43 and a median of 46 years.

Five cases were reported in which there were no known avian contacts within the month prior to onset. Only two common-source outbreaks were reported in 1966, both of which implicated pet parakeets; one involved a man and wife and the other involved a mother and three children.

## III. CHEMOTHERAPY AND IMMUNIZATION OF PSITTACINE BIRDS AGAINST PSITTACOSIS

Observations made during the course of experiments designed to develop a practical regimen for controlling psittacosis in parrots have been reported by Dr. Paul Arnstein<sup>2</sup>. Antimicrobial therapy and prophylaxis were explored, and the efficacy of vaccination was examined.

In the chemotherapeutic trials, it was clear that the mode of action of chlortetracycline hydrochloride (CTC) against the psittacosis agent was clearly inhibitory rather than germicidal. A cooked grain ration containing 0.5-1.0% CTC

was fed to psittacosis-infected psittacine birds daily for 45 days. This regimen was practical to administer, harmless to the birds' general health, and efficacious in controlling psittacosis.

Attempts to immunize psittacine birds against psittacosis with a formalin-killed adjuvant vaccine and with a live, avirulent bovine enteritis agent were not successful; the agents modified but did not prevent infection. The level of immunity was low.

Chemotherapy of infected psittacine birds and preventive chemotherapy of birds whose psittacosis infection status is unknown are considered much more satisfactory methods of psittacosis control than immunization.

#### IV. PROPOSED CHANGES OF FOREIGN QUARANTINE IMPORTATION REGULATIONS FOR PSITTACINE BIRDS

A revision of the Public Health Service regulations regarding the importation of psittacine birds has been proposed<sup>3</sup>. One of the basic changes from existing regulations would be the provision for treatment centers to be established outside the United States. The proposed regulations would require that psittacine birds be confined in an approved center for a minimum of 45 consecutive days immediately prior to shipment to the United States and be treated with chlortetracycline, or other approved medication, prepared and administered in accordance with procedures approved by the Surgeon General for psittacosis control. Pet-birds imported by their owners and birds for zoological parks and medical research would be permitted entry into the United States without prior confinement and treatment under certain conditions, as outlined in the proposed regulations.

The regulations now in effect provide that psittacine birds shall not be brought into the United States, its territories, or possessions for purpose of sale or trade; psittacine birds may be brought in when accompanied by an import permit and under certain conditions as pets or for medical research and zoological parks.

#### V. DISCUSSION - HOST SPECTRUM OF PL AGENTS

The reported incidence of human psittacosis resulting from exposure to infected birds has been reduced appreciably in the past decade, from 568 cases in 1956 to the 1966 total of 50 cases. No doubt the development and use of competent treatment and control methods have been primarily responsible for this significant reduction. Eradication of psittacosis-lymphogranuloma venereum (PL) agents from nature, though, would seem to be a much more difficult problem to solve.

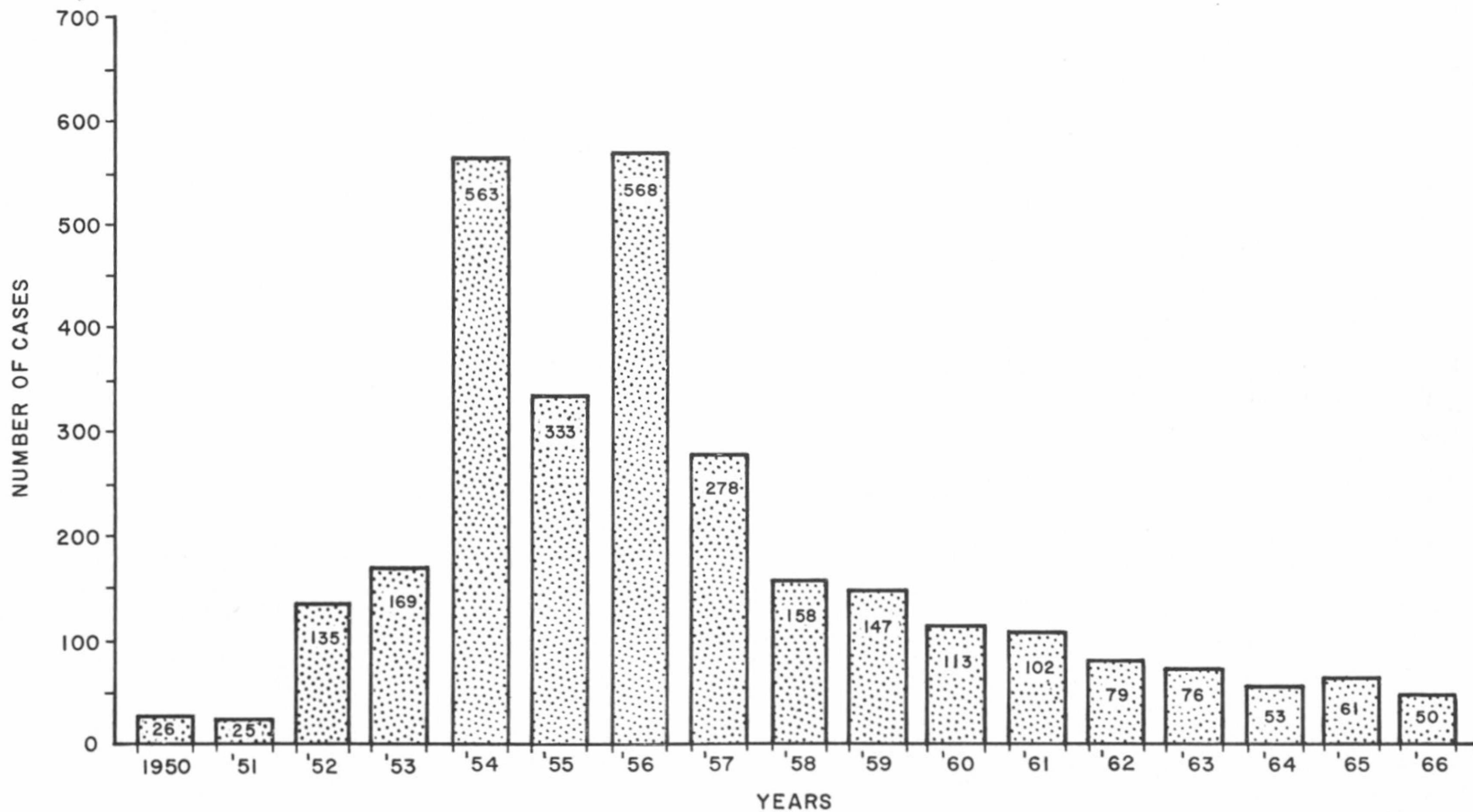
Dr. K. F. Meyer<sup>4</sup>, during a recent conference on trachoma and allied diseases, noted the worldwide distribution and broad host range of the PL group of organisms. For several years after the isolation of the psittacosis parasite from parrots, parakeets, and human patients in 1929 and 1930, it was believed that Psittaciformes species were the only sources of the agent. By 1950 it had become evident that agents belonging to the PL group were the cause of disease and latent infection in large and small mammals other than human beings as well as in many avian species. Although they cause serious economic loss, the mammalian PL agents do not readily cause demonstrable infections in man himself, according to Dr. Meyer, thus differing strikingly from some of the avian strains.

The Third WHO/FAO Expert Committee on Zoonoses met at Geneva, Switzerland, in December 1966 to review the zoonoses problems of the world, make recommendations on the control of these diseases, and identify areas that need attention. The committee's detailed reports on various zoonoses, including psittacosis, will be published in the near future.

#### REFERENCES

1. Preliminary data from the National Communicable Disease Center Morbidity and Mortality Weekly Report.
2. Arnstein, Paul. Observations on Chemotherapy and Immunization of Birds Against Psittacosis. Amer. J. of Ophthalmology, Vol. 63, No. 5, Part II, May 1967.
3. Federal Register, Vol. 32, No. 116 - Friday, June 15, 1967.
4. Meyer, K. F. The Host Spectrum of Psittacosis-Lymphogranuloma Venereum (PL) Agents. Amer. J. of Ophthalmology, Vol. 63, No. 5, Part II, May 1967.

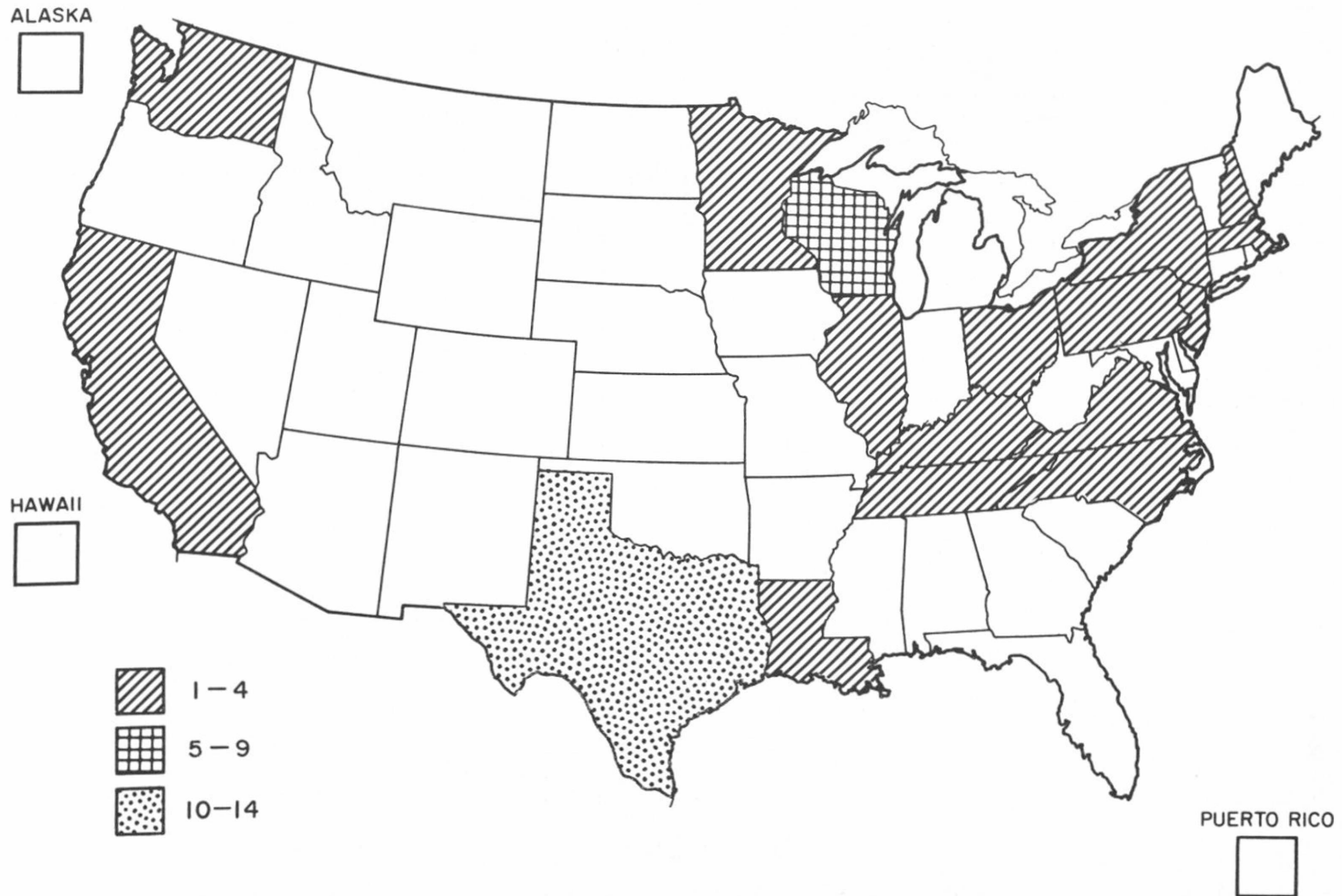
Figure 1.  
REPORTED HUMAN PSITTACOSIS CASES \*  
1950—1966



SOURCE: NATIONAL COMMUNICABLE DISEASE CENTER, MORBIDITY AND MORTALITY WEEKLY REPORT.

\* PRELIMINARY DATA

Figure 2.  
REPORTED HUMAN PSITTACOSIS CASES\*—1966



\* PRELIMINARY DATA

TABLE 1  
REPORTED PSITTACOSIS CASES

STATE	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966
Alabama	1	1	1	2	-	-	-	-	-	-	-
Alaska	-	-	-	-	-	-	1	-	-	-	-
Arizona	1	1	-	-	1	-	1	1	-	1	-
Arkansas	-	1	-	-	1	-	-	-	1	-	-
California	56	27	17	17	12	10	10	14	14	12	3
Colorado	5	4	-	2	1	-	2	-	-	-	-
Connecticut	5	10	1	7	4	2	6	3	-	2	2
Delaware	1	-	-	-	-	1	-	-	-	-	-
District of Col.	-	-	1	-	-	-	-	-	-	-	-
Florida	-	-	1	-	-	-	-	-	1	1	1
Georgia	10	11	2	3	-	2	-	3	4	-	-
Hawaii	-	-	-	-	-	-	-	-	-	-	-
Idaho	2	4	2	5	-	1	-	-	-	-	-
Illinois	39	18	7	11	7	7	4	11	6	5	1
Indiana	5	3	-	-	-	-	1	-	-	-	-
Iowa	7	5	6	1	-	-	-	-	1	-	-
Kansas	1	-	1	1	1	-	-	-	-	-	-
Kentucky	2	-	-	-	2	-	-	1	-	1	-
Louisiana	2	-	-	-	-	-	-	-	-	-	1
Maine	3	-	2	5	-	-	-	-	-	1	-
Maryland	5	5	1	-	-	-	1	-	-	2	-
Massachusetts	12	5	3	2	2	3	1	2	2	1	4
Michigan	7	3	5	2	3	2	3	4	3	1	-
Minnesota	64	36	22	22	4	2	4	1	1	5	3
Mississippi	4	-	-	1	-	-	-	-	-	-	-
Missouri	3	1	2	-	-	-	4	-	-	-	-
Montana	5	2	-	-	-	-	2	1	-	-	-
Nebraska	-	-	2	-	-	-	-	-	-	-	-
Nevada	-	-	-	-	-	-	-	-	-	-	-
New Hampshire	1	-	1	-	-	-	-	-	-	-	1
New Jersey	2	-	2	-	-	1	1	-	3	-	1
New Mexico	-	-	1	1	-	-	-	-	-	-	-
New York	48	24	18	13	9	6	6	5	2	4	1
North Carolina	75	4	2	-	-	1	3	1	1	1	2
North Dakota	5	-	-	-	-	-	-	-	-	-	-
Ohio	13	10	3	1	1	-	1	2	3	2	1
Oklahoma	-	2	-	-	-	-	-	-	-	-	-
Oregon	45	15	9	1	3	2	1	2	1	1	1
Pennsylvania	22	30	9	25	27	6	5	-	2	1	4
Rhode Island	1	-	-	-	-	-	-	-	-	-	-
South Carolina	1	1	1	-	-	-	-	-	-	-	-
South Dakota	-	-	-	-	-	1	-	-	-	-	-
Tennessee	23	7	4	3	8	6	1	1	2	4	3
Texas	33	6	2	4	-	23	-	17	1	8	10
Utah	2	7	1	-	1	3	1	2	-	2	-
Vermont	-	-	1	-	-	-	-	-	-	-	-
Virginia	18	10	4	-	-	1	-	-	1	1	2
Washington	25	5	1	1	2	2	-	-	-	2	1
West Virginia	-	-	-	-	-	1	-	1	-	-	-
Wisconsin	14	20	22	17	24	18	20	4	4	3	8
Wyoming	-	-	1	-	-	1	-	-	-	-	-
<b>TOTALS</b>	<b>568</b>	<b>278</b>	<b>158</b>	<b>147</b>	<b>113</b>	<b>102</b>	<b>79</b>	<b>76</b>	<b>53</b>	<b>61</b>	<b>50</b>

Source: National Communicable Disease Center Morbidity and Mortality Weekly Report.



**TABLE 2**  
**PROBABLE SOURCE OF INFECTION IN 845 HUMAN PSITTACOSIS CASES**  
**UNITED STATES, 1956 - 1966**

YEAR	PARAKEETS	TURKEYS	CHICKENS	DUCKS	PIGEONS	OTHER	TOTAL
1956	128	71	20	21	-	10	250
1957	117	1	2	-	8	4	132
1958	52	24	4	-	-	4	84
1959	58	5	7	-	6	5	81
1960	26	1	2	-	3	2	34
1961	33	27	3	-	1	5	69
1962	27	2	2	-	3	4	38
1963	15	-	-	1	9	3	28
1964	17	1	-	-	10	8	36
1965	23	4	4	-	5	12	48
1966	24	-	2	-	9	10*	45
<b>TOTAL</b>	<b>520</b>	<b>136</b>	<b>46</b>	<b>22</b>	<b>54</b>	<b>67</b>	<b>845</b>

\*Includes: 5 No known bird contact - 3 wild birds - 1 canary - 1 Mynah bird.

**TABLE 3**  
**EXPOSURE CATEGORIES IN 865 HUMAN PSITTACOSIS CASES**  
**UNITED STATES, 1956 - 1966**

YEAR	PET BIRD BREEDER	PET BIRD DEALER	PET BIRD OWNER	POULTRY PROCESSOR	OTHER	TOTAL
1956	9	9	111	96	28	253
1957	8	12	73	-	47	140
1958	1	3	25	21	35	85
1959	3	5	17	4	38	67
1960	-	1	25	1	13	40
1961	1	2	21	27	23	74
1962	2	-	9	3	32	46
1963	-	3	22	-	6	31
1964	5	4	13	-	14	36
1965	3	2	15	7	21	48
1966	2	3	21	1	18	45
<b>TOTAL</b>	<b>34</b>	<b>44</b>	<b>352</b>	<b>160</b>	<b>275</b>	<b>865</b>

TABLE 4

## HUMAN PSITTACOSIS CASES - UNITED STATES 1966

## AVAILABLE DATA ON SOURCES OF INFECTION AND EXPOSURE CATEGORIES

EXPOSURE CATEGORIES	SOURCE OF INFECTION								TOTALS
	PARAKEETS	OTHER PET BIRDS	CHICKENS	TURKEYS	DOMESTIC PIGEONS	DUCKS	WILD BIRDS	NOT SPECIFIED	
PET BIRD BREEDERS	2								2
PET BIRD DEALERS	3								3
PET BIRD OWNERS	17	2			2				21
POULTRY PROCESSORS			1						1
OTHER	2		1		1		8	4	16
NOT SPECIFIED							1	1	2
<b>TOTALS</b>	<b>24</b>	<b>2</b>	<b>2</b>		<b>3</b>		<b>9*</b>	<b>5</b>	<b>45</b>

\*Includes 6 wild pigeons, 3 unknown wild birds.

SOURCE: Epidemiological reports submitted by States to Communicable Disease Center

Key to all disease surveillance activities are the physicians who serve as State epidemiologists. They are responsible for collecting, interpreting, and transmitting data and epidemiological information from their individual States; their contributions to this report are gratefully acknowledged. In addition, valuable contributions to Zoonoses Surveillance reports are made by State Public Health Veterinarians; we are indebted to them for their valuable support.

STATE	STATE EPIDEMIOLOGIST	STATE PUBLIC HEALTH VETERINARIAN
Alabama	W. H. Y. Smith, MD	
Alaska	Thomas R. McGowan, MD	
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Arkansas	Wm. L. Bunch, Jr., MD	Harvie R. Ellis, DVM
California	Philip K. Condit, MD	Ben Dean, DVM
Colorado	C. S. Mollohan, MD	Martin D. Baum, DVM
Connecticut	James C. Hart, MD	
Delaware	Floyd I. Hudson, MD	
District of Columbia	William E. Long, MD	George D. Coffee, DVM
Florida	E. Charlton Prather, MD	James B. Nichols, DVM
Georgia	W. J. Murphy, MD	
Hawaii	Ira D. Hirschy, MD (Acting)	John M. Gooch, DVM
Idaho	John A. Mather, MD	
Illinois	Norman J. Rose, MD	Paul R. Schnurrenberger, DVM
Indiana	A. L. Marshall, Jr., MD	Dan Schlosser, DVM
Iowa	Arnold M. Reeve, MD	S. L. Hendricks, DVM
Kansas	Don E. Wilcox, MD	George A. Mullen, DVM
Kentucky	Calixto Hernandez, MD	Joseph W. Skaggs, DVM
Louisiana	Charles T. Caraway, DVM	* Charles T. Caraway, DVM
Maine	Dean Fisher, MD	
Maryland	John H. Janney, MD	Kenneth L. Crawford, DVM
Massachusetts	Nicholas J. Fiumara, MD	Julian M. Karasoff, DVM
Michigan	George H. Agate, MD	Donald B. Coohan, DVM
Minnesota	D. S. Fleming, MD	
Mississippi	Durward L. Blakey, MD	
Missouri	E. A. Belden, MD	Edmund R. Price, DVM
Montana	Mary E. Soules, MD	
Nebraska	E. A. Rogers, MD	
Nevada	Mark L. Herman, MD	
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North Dakota	Mr. Kenneth Mosser	
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Oklahoma	R. LeRoy Carpenter, MD	
Oregon	Edward L. Goldblatt, MD	Monroe Holmes, DVM
Pennsylvania	W. D. Schrack, Jr., MD	Ernest J. Witte, DVM
Puerto Rico	Rafael A. Timothee, MD	Eduardo Toro, DVM
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South Dakota	G. J. Van Heuvelen, MD	
Tennessee	C. B. Tucker, MD	Luther E. Fredrickson, DVM
Texas	Van C. Tipton, MD	A. B. Rich, DVM
Utah	Robert Sherwood, MD	
Vermont	Linus J. Leavens, MD	D. Pomar, DVM
Virginia	Paul C. White, Jr., MD	
Washington	John A. Beare, MD	
West Virginia		
Wisconsin	Josef Preizler, MD	Wayne H. Thompson, DVM
Wyoming	Robert Alberts, MD	

\* Dual assignment

HUMAN PSITTACOSIS CASES - UNITED STATES 1966

AVAILABLE DATA ON SOURCES OF INFECTION AND EXPOSURE CATEGORIES

EXPOSURE CATEGORIES	SOURCE OF INFECTION								TOTALS
	PARAKEETS	OTHER PET BIRDS	CHICKENS	TURKEYS	DOMESTIC PIGEONS	DUCKS	WILD BIRDS	NOT SPECIFIED	
PET BIRD BREEDERS	2								2
PET BIRD DEALERS	3								3
PET BIRD OWNERS	17	2			2				21
POULTRY PROCESSORS			1						1
OTHER	2		1		1		8	4	16
NOT SPECIFIED							1	1	2
<b>TOTALS</b>	<b>24</b>	<b>2</b>	<b>2</b>		<b>3</b>		<b>9*</b>	<b>5</b>	<b>45</b>

\*Includes 6 wild pigeons, 3 unknown wild birds.

SOURCE: Epidemiological reports submitted by States to Communicable Disease Center