

EPIDEMIOLOGY BULLETIN

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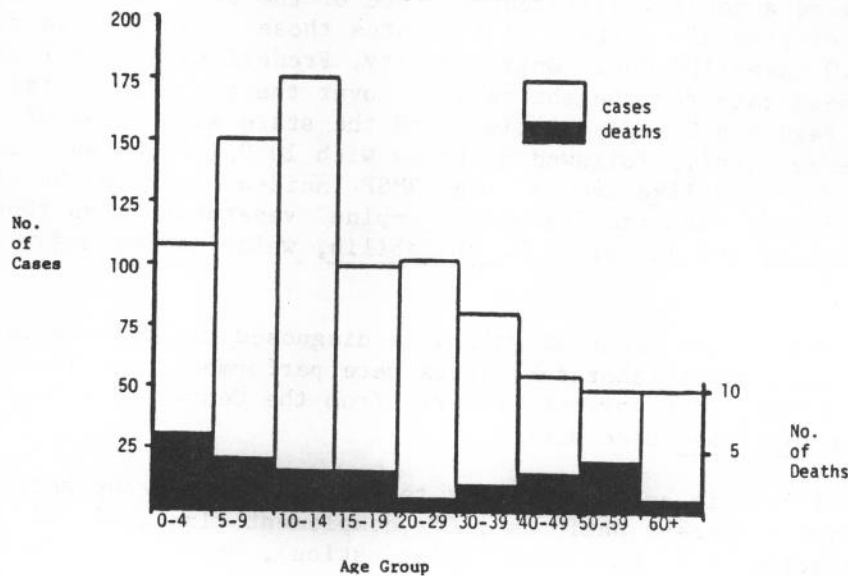
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ROCKY MOUNTAIN SPOTTED FEVER 1972 - 1981

With summer and the tick season upon us again, we have decided to take this opportunity to review the Rocky Mountain Spotted Fever (RMSF) morbidity and mortality data accumulated over the last 10 years.

From 1972 through 1981 a total of 999 cases of RMSF were reported in Virginia, for a mean of 100 cases per year. During this same period, 27 deaths were attributed to the disease, for an overall case-fatality rate of 2.7%. Breakdown of the cases by age group (figure 1) shows that the disease occurred disproportionately more often in the younger age groups; age-specific case fatality rates were highest in those 4 years of age or younger (5.6%) and in those 40 years old or greater (5.2%). Ninety-one percent of the cases were white, and 61% were male.

FIGURE 1: Age Distribution Of Reported RMSF Cases And Deaths
Virginia, 1972 - 1981

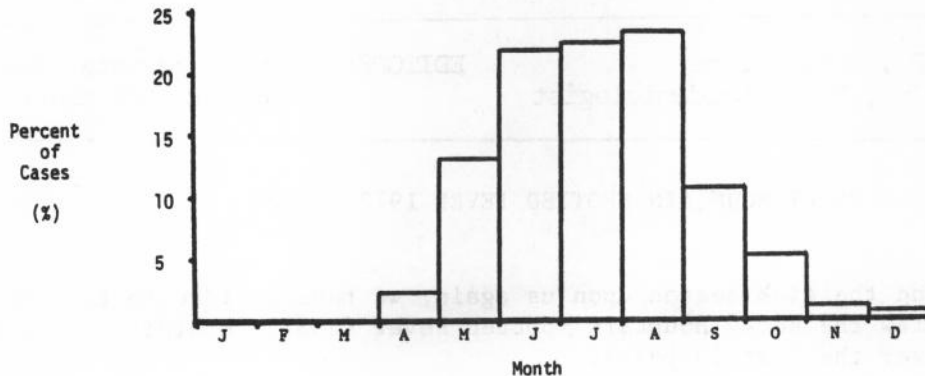


For those reported cases where information was available regarding the presence of a rash, 88% (533/603) were said to have had a rash. For four of the years in question we have more specific data showing that 62% (208/333) of rashes involved the palms and soles.

A history of tick bite or attachment was reported in 73% (638/874), and a history of possible tick exposure in an additional 13% (113/874).

The distribution of cases by month over the last ten years is displayed in figure 2.

FIGURE 2. Seasonal Distribution Of Reported Cases Of RMSF Virginia, 1972 - 1981



Two thirds of the cases occurred during either June, July and August, and if one includes May and September, 90% of all cases occurred during those 5 months.

The geographic distribution is, perhaps, even more interesting. Only seven counties in the entire state reported no cases of RMSF during the ten year period. The greatest number of cases were reported from Northern Virginia and the Richmond vicinity. However, when one calculates yearly rates in terms of RMSF cases per 100,000 population (estimated as of January 1, 1977, the midpoint of the ten years covered by this survey), one gets a totally different picture of the distribution of cases in Virginia. The map of Virginia (figure 3) indicates those counties with rates greater than or equal to 4.0 cases/100,000. Only one city, Fredericksburg (4.7 cases/100,000), is included. The mean rate for the entire state over the ten year period was 2.0/100,000/year. Page and Orange counties lead the state with rates of 16.5/100,000 and 14.9/100,000 respectively, followed by Essex with 10.0/100,000 and Greenville with 9.1/100,000. The band-like area of high RMSF incidence across the middle of the state has been associated with the "oak-hickory-pine" vegetative zone thought to be the preferred habitat of the dog tick, *D. variabilis*, which is the major RMSF vector in the eastern U.S.¹

In the past, many of the cases of RMSF were diagnosed exclusively on clinical grounds. For all cases where laboratory tests were performed, the diagnosis was confirmed for 63% (225/356). The current criteria from the Centers for Disease Control (CDC) for a confirmed case are:

1. A four-fold rise in antibody titers to spotted fever group antigen by IFA (immunofluorescent antibody), CF (complement fixation), MA (microagglutination), LA (latex agglutination), or IHA (indirect hemagglutination); or
2. A single high titer of $\geq 1:16$ by CF, or $\geq 1:64$ by IFA in a clinically compatible case; or
3. Positive immunofluorescence of a skin lesion biopsy or organ tissue at autopsy; or

May, 1982

MONTH: _____

DISEASE	STATE					REGIONS				
	THIS MONTH	LAST MONTH	TOTAL TO DATE		MEAN 5 YEAR TO DATE	THIS MONTH				
			1982	1981		N.W.	N.	S.W.	C.	E.
CHICKENPOX	241	106	649	1292	703.8	12	38	26	9	156
MEASLES	0	4	14	3	833.0	0	0	0	0	0
MUMPS	7	6	29	65	64.2	0	1	0	1	5
PERTUSSIS	2	2	7	2	4.6	0	0	0	0	2
RUBELLA	0	3	8	3	178.4	0	0	0	0	0
MENINGITIS - ASEPTIC	7	6	37	35	29.0	0	2	0	4	1
BACTERIAL	10	26	88	106	78.0	2	2	2	1	3
ENCEPHALITIS - INFECTIOUS	1	3	10	15	9.0	0	1	0	0	0
POST-INFECTIOUS	0	0	0	2	4.2	0	0	0	0	0
HEPATITIS A (INFECTIOUS)	25	12	86	77	111.8	2	7	3	4	9
B (SERUM)	47	30	184	194	168.8	3	10	12	9	13
SALMONELLOSIS	113	88	411	502	326.8	8	13	26	35	31
SHIGELLOSIS	13	5	67	750	198.2	0	1	0	2	10
TUBERCULOSIS - PULMONARY	27	63	204	223	-	0	0	0	0	0
EXTRA-PULMONARY	8	11	37	44	-	0	0	0	0	0
SYPHILIS (PRIMARY & SECONDARY)	41	56	251	291	243.4	0	2	3	16	20
GONORRHEA	2016	1518	8186	8640	8786.8	0	0	0	0	0
ROCKY MOUNTAIN SPOTTED FEVER	7	0	7	11	17.8	1	2	2	2	0
RABIES IN ANIMALS	52	42	170	26	7.6	9	43	0	0	0
MENINGOCOCCAL INFECTIONS	9	8	32	54	36.8	0	2	3	0	4
INFLUENZA	96	74	268	4828	2580.4	0	0	88	6	2
MALARIA	3	4	18	10	11.4	2	1	0	0	0
OTHER: Hepatitis Unspec.	13	13	51	75	73.2	1	2	0	4	6

COUNTIES REPORTING ANIMAL RABIES: Fairfax 14 rac., 1 gray fox, 1 red fox, 1 bat; Loudoun 19 rac., 1 sk.
 1 ground hog, 1 dog; Prince William 4 rac.; Madison 1 rac; Fauquier 5 rac., 1 gray fox;
 OCCUPATIONAL ILLNESSES: Culpeper 1 rac.; Frederick 1 rac.
 Occupational pneumoconiosis 6; Occupational dermatoses 2; Occupational hearing loss 3;
 Asbestosis 6; Byssinosis 1

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