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WASHINGTON STATE UNIVERSITY

DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE
CENTER FOR DISEASE CONTROL
ATLANTA, GEORGIA 30333

CDC--MOUNT ST. HELENS VOLCANO HEALTH REPORT #6

June 13, 1980

Further Eruption of Mount St. Helens, June 12-13, 1980

Shortly after 9:00 PM (Pacific Daylight Time) on Thursday, June 12, and continuing until about 2:00 AM, June 13, Mount St. Helens erupted for the third time releasing ash over a wide area. Preliminary reports indicate that 1/16-1/8 inch of ash fell on Portland, Oregon. The Olympic Peninsula was also affected, but the amount of ash that went northward from the volcano was light.

NIOSH has urgently begun sampling the ash so that its chemical and physical properties can be compared with those in the previous ashfalls.

Ash Analysis

NIOSH is preparing for the next report an outline of the methods being used to analyze the ash for free silica. The types of samples NIOSH has already obtained and the intended analyses of these will be described. Also, an attempt will be made to clarify the terminology being used by laboratories other than NIOSH to describe the results of their ash analyses.

Hospital Emergency Room Visits and Hospital Admissions for Pulmonary Conditions, Washington, May 11-June 7, 1980

Eleven eastern Washington hospitals and 10 western Washington hospitals are included in a surveillance system to monitor emergency room (ER) visits and hospital admissions before and after the volcanic eruptions. The eastern hospitals are located in areas affected by ashfall from the first eruption on May 18, 1980; the western hospitals are in areas affected by ashfall from the second eruption on May 25, 1980. All the hospitals are in areas with ashfall; the cumulative ashfall was as much as 2-3 inches in Ritzville and Moses Lake in the east, and as much as 1 inch in Centralia in the west (Tables 1 and 2).

Eastern Hospitals: Compared with the week before, the ER visits for pulmonary conditions increased abruptly in many hospitals the week after the May 18 eruption (Table 3). These hospitals are in areas with moderate-to-severe ashfall--including Ritzville (2-3 inches), Moses Lake (2-3 inches), Othello (1 1/4 to 1 1/2 inches), Yakima (1 1/2 to 1 3/4 inches), and Spokane (1/4 to 1/2 inch). The greatest increase in pulmonary ER visits (from 1 to 34) was in Ritzville, the town receiving the most ashfall. In Yakima and Spokane, the increase in visits persisted through the second and third post-eruption weeks. But in Ritzville, Moses Lake, and Othello, the number of pulmonary ER visits returned to pre-eruption ranges by the third week (June 1-7, 1980) after the eruption. These areas also experienced a concurrent increase in hospital admissions for pulmonary conditions after the May 18 eruption (Table 4).

For the rest of the areas--those with mild-to-moderate ashfall--little or no increase in pulmonary ER visits or hospital admissions was evident for the 3 weeks after the ashfall compared with the week before (Tables 3 and 4).

Western Hospitals: In Centralia, where the ashfall was heaviest (1 inch) after the second eruption of May 25, the number of pulmonary ER visits increased in the first week (May 25-31, 1980) after the eruption (Table 5). Slight increases in pulmonary ER visits were also seen in Longview and Aberdeen in that week. By the second week after the eruption (June 1-7, 1980), most of the hospitals had weekly pulmonary ER visits similar in numbers to the pre-eruption period. Little or no increase in pulmonary ER visits was seen in McCleary and Shelton--areas with approximately 1/8 inch of ashfall.

Unlike the hospitals in eastern Washington, the western Washington hospitals did not have significant increases in hospital admissions for pulmonary conditions after the May 25 eruption (Table 6). This appears to be true even for Centralia, where an increase in pulmonary ER visits occurred.

Discussion: Available information to date indicates an increase in hospital ER visits and admissions for pulmonary conditions after the 2 eruptions, but only in more heavily affected areas. A number of factors may account for the differences in morbidity between the eastern and western hospitals, including the amount and composition of the ash and the amount of rain after the eruption.

CDC--Mount St. Helens Volcano Health Reports are now being issued on a twice-a-week basis (Tuesdays and Fridays). Information in these reports represents the latest data reported to CDC; much of the information is preliminary in nature and subject to confirmation and change. It is distributed for the purpose of providing up-to-date health data from CDC and the many other groups involved in public health assessment. We hope to continue to receive relevant reports and data from others working on this problem.

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Table 1 - HOSPITAL ADMISSION AND EMERGENCY ROOM SURVEILLANCE
11 Participating Hospitals in Eastern Washington State

<u>COUNTY</u>	<u>CITY/TOWN</u>	<u>POPULATION</u>	<u>NUMBER OF HOSPITALS</u>	<u>NUMBER OF BEDS</u>	<u>CUMULATIVE* ASHFALL (inches)</u>
ADAMS	Ritzville	1,940	1	20	2-3
GRANT	Moses Lake	10,900	1	50	2-3
ADAMS	Othello	4,649	1	46	1-1/4-1-1/2
YAKIMA	Yakima	52,250	2	239	1/2 - 3/4
				217	
WHITMAN	Pullman	23,300	1	42	3/4
GRANT	Soap Lake	1,430	1	42	1/2
KITTITAS	Ellensburg	12,800	1	50	1/2
GRANT	Ephrata	5,430	1	58	3/8-1/2
SPOKANE	Spokane	176,700	2	329	1/4-1/2
				518	

* Cumulative ashfall on May 19, 1980, one day after the first volcanic eruption of May 18, 1980. Reported by local high schools to Robert Quinn, Department of Geography, Eastern Washington University, Spokane, WA.

Table 2 - HOSPITAL ADMISSION AND EMERGENCY ROOM SURVEILLANCE
10 Participating Hospitals in Western Washington State

<u>COUNTY</u>	<u>CITY/TOWN</u>	<u>POPULATION</u>	<u>NUMBER OF HOSPITALS</u>	<u>NUMBER OF BEDS</u>	<u>CUMULATIVE* ASHFALL (inches)</u>
LEWIS	Centralia	10,831	1	47	1
LEWIS	Chehalis	5,990	1	99	1/2-3/4
COWLITZ	Longview	30,200	2	232	1/4
				47	
GRAYS HARBOR	Aberdeen	19,100	2	96	1/8-1/4
				147	
GRAYS HARBOR	McCleary	1,362	1	26	1/8
MASON	Shelton	6,850	1	66	1/8
CLARK	Vancouver	42,400	2	236	1/8
				213	

* Cumulative ashfall on May 26, 1980, one day after the second volcanic eruption of May 25, 1980. Reported by local high schools to Robert Quinn, Department of Geography, Eastern Washington University, Spokane, Washington.

Table 3 - Weekly Emergency Room (ER) Visits for Hospitals in Eastern Washington,
May 11 - June 7, 1980

<u>LOCATION</u>	<u>ER VISITS</u>	<u>MAY 11-17</u>	<u>MAY 18-24*</u>	<u>MAY 25-31</u>	<u>JUNE 1-7</u>
Ritzville	Total	45	96	67	32
	Pulmonary	1	34	7	3
	Other	44	62	60	29
Moses Lake	Total	220	300	225	168
	Pulmonary	8	21	12	6
	Other	212	279	213	162
Othello	Total	108	99	105	88
	Pulmonary	10	21	12	5
	Other	98	78	93	83
Yakima - 1	Total	573	628	562	606
	Pulmonary	36	89	58	70
	Other	537	539	504	536
Yakima - 2	Total	542	512	492	564
	Pulmonary	13	61	41	31
	Other	529	451	451	533
Pullman	Total	42	41	46	NA†
	Pulmonary	3	4	5	NA
	Other	39	37	41	NA
Soap Lake	Total	27	31	21	10
	Pulmonary	1	2	0	1
	Other	26	29	21	9
Ellensburg	Total	87	82	99	87
	Pulmonary	4	8	5	8
	Other	83	74	94	79
Ephrata	Total	47	32	33	38
	Pulmonary	6	10	5	5
	Other	41	22	28	33
Spokane - 1	Total	488	550	542	NA
	Pulmonary	NA	47	23	NA
	Other	NA	503	519	NA
Spokane - 2	Total	438	529	496	472
	Pulmonary	15	55	61	45
	Other	423	474	435	427

*First volcanic eruption with ashfall - May 18, 1980

†Not yet available

Table 4 - Weekly Admissions for Hospitals in Eastern Washington, May 11-June 7, 1980

<u>LOCATION</u>	<u>ADMISSIONS</u>	<u>MAY 11-17</u>	<u>MAY 18-24*</u>	<u>MAY 25-31</u>	<u>JUNE 1-7</u>
Ritzville	Total	6	25	10	8
	Pulmonary	2	13	1	1
	Other	4	12	9	7
Moses Lake	Total	67	41	45	50
	Pulmonary	3	5	7	1
	Other	64	36	38	49
Othello	Total	36	38	32	35
	Pulmonary	9	17	4	6
	Other	27	21	28	29
Yakima - 1	Total	195	177	177	207
	Pulmonary	8	19	12	13
	Other	187	158	165	194
Yakima - 2	Total	288	237	248	273
	Pulmonary	7	14	7	8
	Other	281	223	241	265
Pullman	Total	42	58	38	NA†
	Pulmonary	2	1	4	NA
	Other	40	57	34	NA
Soap Lake	Total	9	2	6	6
	Pulmonary	0	0	1	1
	Other	9	2	5	5
Ellensburg	Total	21	36	21	36
	Pulmonary	1	5	4	5
	Other	20	31	17	31
Ephrata	Total	24	12	24	21
	Pulmonary	3	1	5	0
	Other	21	11	19	21
Spokane - 1	Total	316	266	301	NA
	Pulmonary	NA	NA	NA	NA
	Other	NA	NA	NA	NA
Spokane - 2	Total	594	468	573	NA
	Pulmonary	NA	NA	NA	NA
	Other	NA	NA	NA	NA

*First volcanic eruption with ashfall - May 18, 1980

†Not yet available

Table 5 - Weekly Emergency Room (ER) Visits for Hospitals in Western Washington,
May 11 - June 7, 1980

<u>LOCATION</u>	<u>ER VISITS</u>	<u>MAY 11-17</u>	<u>MAY 18-24</u>	<u>MAY 25-31*</u>	<u>JUNE 1-7</u>
Centralia	Total	239	256	276	201
	Pulmonary	11	17	44	21
	Other	228	239	232	180
Chehalis	Total	NA†	NA	NA	116
	Pulmonary	NA	NA	NA	12
	Other	NA	NA	NA	104
Longview - 1	Total	443	448	430	383
	Pulmonary	41	30	53	38
	Other	402	418	377	345
Longview - 2	Total	240	267	181	173
	Pulmonary	21	24	32	13
	Other	219	243	149	160
Aberdeen - 1	Total	483	475	380	NA
	Pulmonary	31	36	47	NA
	Other	452	439	333	NA
Aberdeen - 2	Total	354	292	320	220
	Pulmonary	45	41	48	44
	Other	309	251	272	176
McCleary	Total	60	52	50	42
	Pulmonary	9	6	7	5
	Other	51	46	43	37
Shelton	Total	211	300	293	240
	Pulmonary	10	5	13	6
	Other	201	295	280	234
Vancouver - 1	Total	NA	NA	NA	NA
	Pulmonary	NA	NA	NA	NA
	Other	NA	NA	NA	NA
Vancouver - 2	Total	NA	NA	NA	NA
	Pulmonary	NA	NA	NA	NA
	Other	NA	NA	NA	NA

*Second volcanic eruption with ashfall - May 25, 1980

† - Not yet available

Table 6 - Weekly Admissions for Hospitals in Western Washington, May 11-June 7, 1980

LOCATION	ADMISSIONS	MAY 11-17	MAY 18-24	MAY 25-31*	JUNE 1-7
Centralia	Total	77	70	66	67
	Pulmonary	5	4	6	0
	Other	72	66	60	67
Chehalis	Total	NA†	NA	NA	NA
	Pulmonary	NA	NA	NA	NA
	Other	NA	NA	NA	NA
Longview - 1	Total	166	169	139	156
	Pulmonary	21	10	17	13
	Other	145	159	122	143
Longview - 2	Total	100	92	85	121
	Pulmonary	10	4	8	3
	Other	90	88	77	118
Aberdeen - 1	Total	104	107	91	NA
	Pulmonary	4	5	12	NA
	Other	100	102	79	NA
Aberdeen - 2	Total	54	46	41	34
	Pulmonary	6	7	7	10
	Other	48	39	34	24
McCleary	Total	8	18	13	12
	Pulmonary	1	0	5	1
	Other	7	18	8	11
Shelton	Total	42	45	52	58
	Pulmonary	5	4	1	3
	Other	37	41	51	55
Vancouver - 1	Total	NA	NA	NA	NA
	Pulmonary	NA	NA	NA	NA
	Other	NA	NA	NA	NA
Vancouver - 2	Total	NA	NA	NA	NA
	Pulmonary	NA	NA	NA	NA
	Other	NA	NA	NA	NA

*Second volcanic eruption with ashfall - May 25, 1980

†Not yet available

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