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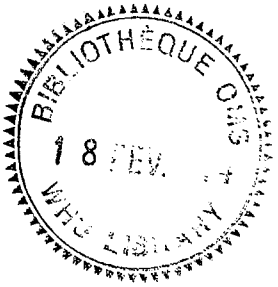

Smallpox in Jakarta Residency, 1970[1]

by

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Introduction

In May 1968 a WHO-assisted smallpox eradication project started in Java and Bali and "advance teams" headed by a physician were created in June 1968. A team responsible for Jakarta Residency became operational in November of that year and, in January 1969, "fire-fighting teams" headed by a nurse started their operations in each regency.

Jakarta Residency extends to the east and the west of Jakarta municipality. It has a population of about 3 800 000 and is formed of five regencies which in turn consist of subdistricts (population approximately 60 000) composed of a number of villages.

Although mass vaccination was done in four villages of Purwakarta Regency, no such programme was conducted in the rest of Jakarta Residency. In the beginning, the advance team concentrated on supervision of routine vaccination while containment measures by the regencies received only occasional help. These priorities were reversed at the beginning of 1970. At that time, the author started to have regular meetings with the project directorate about the tactics of containment.

Data collected between weeks one and 27 of 1970 are presented in this paper.

Methods

From the beginning of 1970 onward every outbreak was recorded and enumerated according to the time when the report arrived at the residency office. Available records in residencies and regencies were also used. An outbreak was defined as the reported occurrence of one or more smallpox cases in one kampung, the administrative subdivision of a village with a population of about 2000.

Results

During the first 27 weeks of 1970, 371 cases, including 57 deaths, were recorded. Ninety-five per cent. of the smallpox cases of known age were 14 years or younger (Table 1). There

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[1] Extracted from WHO/SE/71.30, pages 134-139.

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were no significant differences by sex. Case-fatality rates were 15% overall but were twice this high among children under one year of age. Of the 207 patients for whom the vaccination status is known, 179 (86%) had no vaccination scar (Table 2). No deaths occurred among those previously vaccinated.

Out of a total of 60 subdistricts, cases were reported in 25. On the average, cases were recorded during a period of 2.1 weeks in an outbreak. However in 71% of the outbreaks, cases were reported during one week only (Table 3). In two outbreaks, cases occurred over a period of more than eight weeks.

An average of 5.2 cases was found in each outbreak (Table 4). One-third of the outbreaks had once case only.

The source of infection could be determined in 76% of the outbreaks (Table 5). Of those for which a source of infection could be determined, 30% were traced to another regency. Most of these transfers were caused through transmission within extended families.

Discussion

These investigations show a higher proportion of cases among children of less than 15 years (95%) than is reported in other countries and higher, in fact, than in West Java as a whole (Table 6).

Although the case-fatality rate was much lower than that found in East Pakistan, it was somewhat higher than that found in West Java and much higher than is reported from Brazil (Table 7). The difference in relation to West Java could be due to more complete reporting of deaths in Jakarta.

This study confirmed again that vaccinated persons are less likely to die of the disease and much less likely to contract the disease. It is noted, in fact, that the vaccination status of the 15 cases up to four years of age is doubtful because some cases vaccinated during the incubation period with takes were reported as cases with vaccination scar.

More than 70% of the outbreaks were reported during one week only and more than 80% of the outbreaks consisted of 10 or less cases. This is nearly identical with the 82% found by G. Heiner et al. (West Pakistan) in 120 outbreaks but it contrasts with the results reported by Glokpor from Togo who found only 28% of 25 outbreaks to have seven cases or less.

The causes of two failures in containment (Table 5) were in one instance due to non-acceptance of vaccination and, in the other, due to difficulties to reach the place in the rainy season. Although the source of infection was not found in 24% of the outbreaks, analysis of the remainder shows that 30% of the outbreaks were traced to another regency. In the study by Glokpor, 15% of outbreaks resulted from introduction from other areas. Overall, we calculate that about 13% of our cases were transferred from known sources, 4% were transferred from sources still unknown, and 83% were indigenous cases.

Acknowledgement

Thanks are expressed to Dr P. A. Koswara (Kho Gin Tjong) and Dr R. Lindner for the advice received.

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3. Outbreak in a city 100% vaccinated, Brazil. WHO Smallpox Surveillance Report No. 18, February 1969

4. Gordon G. Heiner et al. Transmission of smallpox in endemic areas. WHO/SE/69.13

5. Georges F. Glokpor. Epidemiological investigations - smallpox eradication programme in Togo - 1969. WHO/SE/70.21

TABLE 1. SMALLPOX CASES AND DEATHS BY AGE

Age	Cases	Deaths	Fatality rate (%)
< 1	37	12	32
1-4	159	26	16
5-14	127	14	11
15+	18	-	-
Unknown	30	5	17
Total	371	57	15

TABLE 2. DISTRIBUTION BY VACCINATION STATUS AND AGE OF SMALLPOX CASES

Age	Vaccination scar present		No vaccination scar		Status unknown*		Total	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
< 1	3	0	25	5	9	7	37	12
1-4	12	0	85	6	62	20	159	26
5-14	12	0	62	1	53	13	127	14
15+	1	0	7	0	10	0	18	0
Unknown	-	-	-	-	30	5	30	5
Total	28	0	179	12	164	45	371	57

* The new type of reporting does not include the vaccination status.

TABLE 3. NUMBER OF WEEKS DURING WHICH CASES OCCURRED IN OUTBREAKS

	Outbreaks	%
1 week	47	71
2-4 weeks	13	20
5-7 weeks	4	6
8-18 weeks	2	3
Total	66	100

TABLE 4. NUMBER OF CASES PER OUTBREAK

	Outbreaks	%
1 case	22	33
2-5 cases	21	32
6-10 cases	13	20
11-36 cases	10	15
Total	66	100

TABLE 5. SOURCE OF INFECTION OF OUTBREAKS

	Outbreaks	%
Different kampung	14	28
Different village	13	26
Different subdistrict	8	16
Differant regency	15	30
Unknown	16	-
Total	66	100

TABLE 6. COMPARATIVE PERCENTAGE DISTRIBUTION OF CASES BY AGE GROUP

Age	Jakarta Residency	West Java[a]	Brazil[b]	East Pakistan[c]	West Pakistan[d]
<1	11%	11%	14%	8%	7%
1-4	47%	45%	22%	20%	22%
5-14	37%	33%	37%	39%	39%
15+	5%	11%	28%	32%	31%

[a] P. A. Koswara, 1970. Smallpox Eradication progress report.

[b] WHO Surveillance Report No. 18, 1969.

[c] WHO Surveillance Report No. 35, 1969.

[d] G. Heiner et al., 1967, WHO/SE/69.13.

TABLE 7. COMPARATIVE CASE-FATALITY RATIOS BY AGE GROUP

Age	Jakarta Residency	West Java[a]	Brazil[b]	East Pakistan[c]
< 1	32%	14%	5%	70%
1-4	16%	11%	0.6%	42%
5-14	11%	5%	0.2%	14%
15+	-	4.5%	0.6%	12%
Unknown	17%	6%	-	-

[a] P. A. Koswara, 1970. Smallpox Eradication progress report.

[b] Garibaldi, Suzart, Rodriguez, Ponce de Leon (present conference).

[c] WHO Surveillance Report No. 35, 1969.