

IMPACT OF THE 1974 DACCA EPIDEMIC UPON THE CHOLERA RESEARCH LABORATORY

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Dr. Khan has described some of the characteristics of our most recent Dacca cholera epidemic as revealed by the study of our inpatient population and has demonstrated among other things that it was both early and large. It might be of interest to say a few things about the impact of this epidemic upon the operations of the CRL.

There was a moderate cholera epidemic in Dacca last spring. Spring epidemics are not unusual. However, unlike previous years, cases continued in moderate numbers. In June and July there were 22 and 36 cases, respectively. By the middle of July we made the operational prediction of the possibility of a large epidemic and ran special checks on our supplies. Since the hospital had overflowed into tents several other times, we sought a source for tentage. This was hard to find because of the use of tents in flood relief, but some were promised by the Bangladesh Army.

By the middle of August we made the further prediction that the epidemic would not only be large but early as well, and we began immediately to plan for handling a really large number of cases soon. All available hospital space, including a store room, the X-ray room, the centrifuge room, and one of the clinical study suites was converted to bed space. The tents, when finally obtained from the Army, were unusable, and on September 13 we made an urgent appeal to USAID for 6 hospital tents and about 200 cots for use with recovering cases. Our shop had been making additional cholera cots for some time.

Table I shows the course of this epidemic in terms of monthly inpatient cases compared to the 11 previous years. Comparison with the 11-year average is probably the best indication of timing, and comparison of the total cases in the 8-month period is probably the best indication of overall size of the epidemic. However, the 2,682 cases in October in the

present epidemic compared to 1,287 in 1971 (the highest previous month) is probably the best indication of the stress on CRL, particularly when it is noted that this is flanked by one month of 987 cases and another of 945 cases.

AID acted promptly, and by September 19, six days after the request, the first tents and cots were delivered from the U.S.A. by airlift. The next day the first 30-bed tent was in use followed in rapid succession by a second, third, fourth and eventually a fifth. At the peak of the epidemic on October 19 there were 183 new admissions of which 133 were cholera cases. The sixth tent was held in reserve for the Matlab hospital but was not required. The epidemic in Matlab was serious but did not exceed capacity. With five tents in operation, the Dacca hospital, having a normal capacity of 75 beds, was operating at 300 beds. Plans were made for the establishment of a complete second hospital unit, but these did not have to be activated.

When a hospital goes from 75 beds to 300 beds by crowding the wards and expanding into tents, more staff in all categories is needed. Our normal ward staff is 70 persons. We added 52 persons, including 10 physicians. People were drawn from all divisions of the laboratory to assist in administration, the clinical laboratories, etc. Since I.V. fluid was one of the major needs, our small I.V. plant was put on double shift, and its operations were critically reviewed. Rush cables were sent ordering a few essential items by air that could have increased output. For one reason or another most of these items are not yet delivered. However, the I.V. unit did a magnificent job with what they had (32,194 liters of solutions in October).

The supply of items for such an emergency is a key point. CRL developed an emergency "want list" in the middle of September. Everyone, including the Governments of the United Kingdom, the United States and Bangladesh, as well as UNICEF, was most anxious to help, but the fact remains that the USAID tents and cots and a few items from U.K. and the medical stores of the Government of Bangladesh were the only things available quickly. Our experience indicates clearly that CRL must maintain reserve stocks of essential items for a major epidemic at all times. Government bureaucracy, procurement lag and transportation lag combine to make a situation that is just too slow to be responsive to an emergency in this part of the world.

Upto this point the cholera epidemic has been the principal subject of this presentation. However, Table II shows the overall situation. The cholera epidemic was really a spectacular superimposition upon a groundswell of other diarrheal disease, so that over the period of the cholera epidemic there was also an increased amount of shigellosis and other non-specific diarrheal disease which continued after the cholera epidemic waned. Moreover, while most of the cholera cases became inpatients, the hospital was carrying a tremendous outpatient load. Last year CRL had about 32,000 outpatients; the year before, about one-half of this. This year CRL is headed for between 50 and 55 thousand outpatients. Even now in a quiet period of the year we are averaging about 120 per day, or 43,000 per year.

This table also shows a figure that is very pleasing. In the largest cholera epidemic the laboratory has ever handled the cholera mortality was 20 cases, or 0.39%. This was accomplished with an average hospital stay of about 2.8 days. With more than 40% inexperienced staff, this is a special tribute to our experienced staff and the people who developed our therapy and trained them in the old Pakistan-SEATO days.

The Cholera Research Laboratory is primarily a research organization and, very secondarily, a service organization. This epidemic had a very serious impact on our mission in both time and money. From early September to the middle of November clinical research was virtually impossible because of crowding and generally hectic conditions. In addition, although we budget for an epidemic every year, our readily identifiable epidemic costs were approximately \$139,000 ahead of our last year's costs. While about \$66,000 of this was offset by special contributions of cash and kind from the Government of Bangladesh, the United Kingdom and USAID, it still represented about a \$73,000 subtraction from our research budget, not to mention the added costs of a heavy year in Matlab which will be discussed by others.

One may well ask if we have derived any benefit at all from this epidemic. I think that we have. Dr. Khan's work and much of what you will hear yet this afternoon came from this period. When the census went down somewhat, clinical research could begin and, because of the large number of cases, could be accomplished quickly. A planned effort was made to make

the most of the situation.

Another very important thing has come about. As a result of the emergency pressure of this epidemic, CRL is now physically set up to handle other big ones in the future. We have our own tents and cots properly stored to preserve them; our I.V. plant will be modernised somewhat; we're stocked with stool buckets, feeding equipment, blankets and a host of other items that are required.

Will we need all this in the future? Dr. Curlin has run a trend analysis on admissions from 1969 to this year. Although he is properly cautious about such calculations, the figures predict enough cases from here on to put us into tents most years in the future.

TABLE 1

EIGHT MONTH CHOLERA INPATIENT RECORD
CRL DACCA HOSPITAL

YEAR	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Total
1963	8	14	21	1	4	24	175	13	260
1964	4	0	12	47	99	150	100	55	467
1965	2	0	14	98	131	89	44	18	396
1966	15	9	62	217	444	627	236	15	1625
1967	0	0	0	0	0	0	1	2	3
1968	3	0	2	35	192	279	74	5	590
1969	3	11	12	73	401	1022	129	67	1718
1970	0	9	36	644	976	789	176	54	2684
1971	16	7	130	495	1287	163	74	30	2202
1972	1	0	0	0	7	30	66	57	161
1973	2	34	40	299	495	170	31	1	1072
Avg.	5	8	30	173	367	309	101	29	1022
1974	36	188	987	2682	945	251	14	1	5104

TABLE II

CHOLERA RESEARCH LABORATORY HOSPITAL (DACCA)

1 JULY 1974 - 31 JANUARY 1975

	ADMISSIONS			DEATHS			TOTAL PATIENTS		
	Cholera	Shig.	Other	Cholera	Shig.	Other	Inpat.	Outpat.	Total
July	36	34	251	0	3	14	321	3578	3899
Aug.	188	32	410	0	3	14	630	4210	4840
Sept.	986	79	373	3	7	9	1438	4599	6037
Oct.	2682	107	674	13	6	15	3463	4990	8453
Nov.	945	172	632	3	13	28	1749	4649	6398
Dec.	251	96	419	1	8	22	766	4812	5578
Jan.	14	103	447	0	9	18	564	4204	4768
Total	5102	623	3206	20	49	120	8931	31042	39973
1973*	1270	540	3135				4945	32605	37550

* Full Year

PROCEEDINGS OF THE 9TH MEETING OF THE SCIENTIFIC
REVIEW AND TECHNICAL ADVISORY COMMITTEE OF
THE CHOLERA RESEARCH LABORATORY

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and

REPORTS OF THE COLLABORATIVE STUDIES BETWEEN CENTER
FOR MEDICAL RESEARCH AND CHOLERA RESEARCH
LABORATORY

For the
YEAR 1974

Dacca, Bangladesh