

**“REPORT ON THE OUTBREAK OF CHOLERA IN MALACCA,
1963 BY THE COMMITTEE OF ENQUIRY APPOINTED BY
THE CABINET”**

A CRITICAL REVIEW

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During May and June 1963 there was an epidemic outbreak of cholera in Malacca. The criticisms levelled at Government for the handling of the epidemic led to the setting up of a Committee of Enquiry whose report is now on sale (Government Printers, Kuala Lumpur, \$2.50) It contains much material of great interest and practical importance to the medical profession but as Government Reports do not readily find their way to the shelves of medical men the Editor feels a brief review would be desirable.

Although early records are meagre, there is evidence that the earliest outbreaks of cholera in Malaya probably occurred in Malacca in the sixteenth century. Cholera was recognized in the Durian Daun Hospital in Malacca in 1828-30, in Langkat village in Selangor in the late seventies, and in Pudu Goal, Kuala Lumpur in 1895. Significant outbreaks have been recorded in the present century, notably in 1910-11, 1914, 1918, 1927 and 1945-46.

The causative organism in the recent epidemic has been shown to be the El Tor type of cholera vibrio, which was first found among the Mecca pilgrims at El Tor (hence the name) in the Sinai Peninsula in 1905. Though identical in appearance and biochemical and other properties with the true cholera vibrio the Mecca pilgrims did not exhibit the usual clinical symptoms of cholera and the type was regarded as non-pathogenic. In 1937, however, a type of cholera vibrio similar to the El Tor variety was responsible for an outbreak in a village in Celebes in which the worst cases developed collapse and died in a few hours. However, many cases were relatively mild and the tendency to epidemic spread was not so great as in true cholera. An outbreak of El Tor cholera occurred in Singapore in 1943 and there was a major diffusion by the seaways of South-East Asia and the Western Pacific in 1961-63. Professor H. B. Maitland of the Institute for Medical Research found the Malacca strains were different from the typical *Vibrio El Tor* in that they did not haemolyse the red blood cells of the sheep and goat, resembling in this

respect the West New Guinea strains. The speculation is that the infection was conveyed to Malacca by sea routes from W. New Guinea through Java and Sumatra. The occurrence of cholera was recognized in Sumatra in 1962 and it is conceivable that the organism may have crossed the narrow Straits of Malacca through the many small craft plying between Malacca and the Sumatran coast without medical inspection of the crew.

The epidemic of cholera in Malacca appeared towards the close of a severe drought when the monthly rainfall dropped to between 1 and 2 inches instead of 7 and 14. Cholera is essentially a water-borne infection. About three-quarters of the Malacca town's water supply comes from the lower reaches of the Malacca river, the Bukit Sebukor supply. When the intake was placed some seven miles upstream it was thought to be beyond the reach of the tides but during the 1963 drought the level of water in the river fell to an unprecedented low level and at high tides sea water was carried upstream beyond the intake. This brackish water was highly polluted by (1) the effluents of the septic tanks of the Malacca General Hospital entering the river about one mile below, (2) the washing of sanitary buckets of the Municipality in the river about five miles below the intake and (3) the sewage from numerous riverside latrines entering directly into the river. Such contaminated water was passing into the Bukit Sebukor filtration plant during the weeks preceding the epidemic. There are indications that chlorination may have failed for several hours during critical periods in the early stages of the epidemic and there were defects in the filtration process. Thus, there appears to be some circumstantial evidence to implicate the Bukit Sebukor water supply in the epidemic. There are 626 wells within the municipal area of Malacca but 599 of them are private wells mostly within houses. Although there was ample opportunity for pollution the grouping of cases does not appear to incriminate any of the communal wells.

The Enquiry brought to light other anomalies in the public health methods of the

town. It is pointed out that the main method of sewage disposal in Malacca town and suburbs is still the "bucket system". The latrine buckets are emptied daily and the nightsoil collected for disposal by trenching outside the town. The method, primitive at the best of times, is seen at its near worst in the back-to-back houses of the older parts of the town where the difficulties of maintaining reasonable hygienic standards are well nigh insuperable.

On the subject of measures taken (or not taken) to deal with the epidemic the Committee of Enquiry points out that cholera caused by *Vibrio El Tor* may be very severe or relatively mild. The less severe cases may be confused clinically with gastro-enteritis, food poisoning or bacillary dysentery, all of which are commonly seen in Malayan hospitals throughout the year. The initial diagnosis may hence be hesitant especially in a non-endemic area like Malacca where cholera has not been reported for the past 133 years. During the last few days of April 1963 the doctors of Malacca were seeing patients who had a severe type of diarrhoea. On the morning of May 4 the condition of two of the patients led the physician to suspect the possibility of cholera and request a bacteriological confirmation. The laboratory in Malacca was not geared for cholera work and suitable culture media for the primary isolation of the vibrio were not immediately available. The final isolation was complete on the morning of May 9 in Malacca and confirmed by the Institute for Medical Research, Kuala Lumpur the following morning. Despite the difficulties and deficiencies the response of the Medical Unit was prompt and efficient.

Plans for cholera control were prepared by the Ministry of Health in 1961 when the presence of the *El Tor* cholera was first reported in the Malaysian region. One of the recommendations was that "every outbreak of gastro-enteritis as reported in the newspapers should be investigated by the health officer of the area". Malacca had no Health Officer and it was not till May 11 when a Health Officer had arrived from Kuala Lumpur that epidemiological investigations began and control measures were instituted. The decline of the epidemic began six days after the start of these control measures. However, mass inoculations only began on May 15 on receipt of vaccine supplies from abroad. It had been decided in 1961 that 900,000 doses should be ready for immediate use and stocked at the Institute for Medical Research. The vaccine

stock available, however, was 217,000 ml.: 21,850 ml. being bottled and ready for immediate use; the rest held in bulk concentrate available only after it had been diluted, bottled and tested, a procedure which takes several days. This would have been sufficient to commence mass inoculation by giving the intradermal dosage of 0.2 ml. As there was some doubt about the effectiveness of a single intradermal inoculation and the amount available was too small to start a mass campaign giving 1 ml. doses subcutaneously there was a delay. This delay in commencing mass inoculation caused considerable anxiety among the population. The Committee maintains that it is no part of its task to assess the value of cholera inoculation in the control of the Malacca epidemic, nor does it consider itself competent to do so. The Committee has been able, however, to discuss the question with experts on *El Tor* cholera whose view it is that an undue emphasis is placed on the role of cholera inoculation in an epidemic situation. The primary drive in cholera control must always be directed to the water supplies, to sanitation and environmental hygiene, and to the discovery and elimination of foci of infection.

The most important part of the Report is the section on "Recommendations to prevent a recurrence of cholera" and the Committee has very wisely taken a broad approach, extending its recommendations to a wider geographical field than Malacca and reviewing the problem of interepidemic planning for the management of a possible recurrence.

In regard to water supplies the Committee recommends:

that the Malacca supply should conform with internationally recognised bacteriological and chemical standards or with standards approved by the Ministries of Health and of Public Works; and

that the Ministries of Health and Public Works should consider how best these standards might be made general throughout the country;

that the development and control of the water supplies of Malacca State should be vested in single authority;

that the Malacca Municipal supplies should be placed in the meantime under the technical surveillance of the Public Works Department; and

that the bye-laws on water supply, siting of meters, storage tanks, water con-

nections, etc., in force in the areas supplied by the Public Works Department be made immediately applicable to the Malacca Municipality.

The Committee views that the water supplies of the Federation should be controlled and developed as a public utility by State Water Boards co-ordinated and advised by a Federal Authority in Kuala Lumpur but recognising the constitutional and financial implications recommends that Government should examine or re-examine the case for a future development on these lines.

The Committee, recognising the potential contribution of wells to the epidemic, but realising that tradition dies hard, that old Malacca residents often prefer well water to the piped supply, and that radical measures to close the wells would be premature and socially unacceptable recommends:

that the Health Authorities should institute a regular inspection of all wells, condemning by closing down those which are open to gross pollution and taking such steps as may be practical to improve the rest;

that well-owners should be instructed by pamphlet or precept in the methods of sterilising their well water;

that all wells should be regularly chlorinated by the health authorities during periods of drought;

that a bacteriological examination of the water for cholera should be made whenever resources permit and the wells appear to be implicated in the spread of any acute gastro-intestinal infection; and

that where appropriate the necessary legal powers to enforce the above should be provided under the various health laws.

In regard to the Health Services of Malacca the Committee recommends:

that at least one of the vacant posts in the Malacca Health Department should be filled as soon as a qualified health officer is available;

that, as an interim measure in the absence of a suitably qualified health officer, a doctor should be diverted from the hospital branch to public health; and

that the Ministry should review the case for the restoration of the post of Senior Health Officer, Malacca, by up-

grading one of the two posts for Health Officers;

that the Municipal Authorities should review the working of the "bucket" system of sanitation in relation to the irregularities disclosed;

that the Ministries of Health, of Interior and Public Works should lay down minimum standards for constructing public sewage disposal schemes and for their day-to-day maintenance;

that a modern system of sewage disposal should stand high in the Municipal plans for future development;

that back-lanes should be constructed to divide the back-to-back "long-houses" as is enforced in other Town Councils and Municipal areas;

that the Government should introduce legislation to control the development of villages, towns and cities in Malaysia according to modern town planning concepts, which should be binding at all levels of administration and from which no deviation should be allowed if such action would lead to infringement of health rules or cause a hazard to the health of the community. (Malaysia being a young country early action along these lines will pay handsome dividends in health for the future, without causing much hardship to the present generation. The haphazard development of Malacca without the aid of modern town planning should be a lesson for the rest of Malaysia, especially for local authorities.); and

that on an outbreak of cholera on an epidemic scale, all the resources of the Health Departments of Local Authorities should come under the control of the Ministry of Health and that provisions to this effect should be incorporated in future Federal health legislation;

that the sewage purification system be re-examined by the Public Works Department and that any defects discovered be corrected;

that the Ministry of Health should review the existing balance between the preventive and curative branches of the Medical Department and investigate the causes of the shortage of qualified health officers;

that the Ministry should review the possible means of strengthening the health services;

- (i) by encouraging medical officers to take the Diploma of Public Health;
- (ii) by restoring payment in relation to present-day values, of an allowance formerly made to time-scale health officers holding the Diploma of Public Health;
- (iii) by according to the Diploma of Public Health the same status as other higher qualifications in the selection to superscale posts;
- (iv) by reserving all unfilled superscale posts in the Health Branch for health officers holding the Diploma of Public Health;
- (v) by creating more senior health posts, i.e., the posts of Senior Medical Officers of Health be raised from four to ten in Malaya;
- (vi) by recruiting qualified health officers on contract;

that the Ministry should consider whether in the absence of qualified health officers, medical officers should be temporarily diverted to public health in States where the need is pressing; and

that an Epidemiological and Medical Statistics Section be established in the Ministry of Health with properly qualified staff appointed to reorganise at all levels the certification and collection of medical and health statistics.

In regard to Inter-epidemic planning the Committee recommends that the

Ministry of Health be advised to revise the 1961 detailed plans of action in the light of experience from the Malacca outbreak. Such plans should, as hitherto, be circulated to staff at all levels of the administration and should include specific instructions to every category of officers on all measures necessary to help direct and conduct a campaign against cholera;

that the Ministry of Health should re-assess in the light of experience gained in the Malacca outbreak, the quantity of cholera vaccine to be held in the country for immediate use;

that in an epidemic situation cholera vaccine should be supplied by the Ministry of Health free of charge and without delay to all medical authorities within the epidemic area who are competent to use it; and

that stocks of cholera vaccine should always be computed in millilitres (ml.).

The Committee, considering the possibility that cholera may recur in this country and especially in Malacca, recommends

that the Ministry of Health should advise State Medical and Health Authorities on the timing and regional scope of any re-inoculation campaign the Ministry may consider necessary; and

that a Health Officer in the Ministry should be designated to review this for action from time to time.

The Committee, having reviewed the difficulties of the Malacca Pathological Laboratory in the early period of the epidemic and the heavy pressure under which the laboratory was working recommends

that a public health laboratory should be established in each major State;

that the Ministry of Health should review the possibility of co-ordination and standardisation of methods in the laboratories of the country able to undertake the diagnosis of cholera;

that the Ministry of Health should consider the possible formation of a mobile cholera investigation unit free from the responsibilities of control, equipped with a travelling laboratory, able to move to any suspected area at short notice and charged with the special — if not necessarily the only — task of defining the source and spread of infection and of giving technical support to the control authorities; and

that the Ministry should consider the case for a request to the World Health Organisation for an expert cholera team, the team to be posted to Malaya during the period of El Tor endemicity for the purpose of training Malaysian personnel and of supporting the local control authorities.

In view of the difficulties experienced in the Malacca Hospital in regard to beds, mattresses, etc. recommends

that the Ministry of Health should review the stocks of drugs and equipment to be kept in State medical stores in the light of experience during the Malacca epidemic.

The Committee, having reviewed the problems involved, and the criticisms of, the appli-

cation of quarantine in the Malacca cholera outbreak, and the heavy pressure on the quarantined wards in the Malacca General Hospital, recommends

that State Medical and Health Authorities should receive ministerial guidance on the timing, scope, legislative procedure and application of quarantine restrictions;

that the Malaysian Government should review the possibilities of shortening the delays between the decision to impose quarantine restrictions and the receipt of the relevant Gazette Notifications by the authorities concerned;

that consideration be given to bring about a National Public Health Act in which is consolidated all the existing Federal, State and subsidiary legislation, thus satisfying, inter alia, the whole legal process pertaining to quarantine;

that the Ministry of Health should re-consider the case for the construction of isolation hospitals for infectious diseases in Malacca, Selangor, Penang and other towns where there are international air and/or sea ports;

that the health inspection of small craft calling at all ports, big and small, be strictly enforced with the co-operation of the Customs, Marine and Immigration Departments. These four departments should be represented on the Port Commission or Port Committees of every port in Malaysia, if the port health work is to be efficiently carried out. The Ministry of Health should ensure that health officers supervise the ports in their Districts; and

that the Ministry of Health should consider the establishment of quarantine anchorage at ports handling international traffic and trade.

On the subject of Coordination of effort the Committee has this to say: "An epidemic of cholera is a social emergency, to be met with all the resources of Government. The Ministry of Health directs the effort and bears the main responsibility; other ministries and departments, and the people themselves, have a lesser but important role. The impact of control measures will be maximal when all agencies are kept well-informed on the situation, when they know what is expected of

them, when their efforts are co-ordinated. Quick decisions have to be made, difficulties to be speedily resolved. The Committee has ample evidence of the energy with which the Malacca epidemics was tackled and of the will of the Municipal Authorities, the Police, the medical profession and other bodies to co-operate. It is less assured that these bodies were always clearly informed or their efforts well co-ordinated. Meetings were called, but not with the frequency or regularity which an epidemic situation demands." The Committee therefore recommends:

that the Chief Medical and Health Officer of any State declared to be cholera-infected should convene without delay a State Co-ordinating Cholera Control Committee representing all Government departments, the local authority, voluntary organisations and other bodies involved, the Committee to meet daily during the epidemic to review events, to smooth out difficulties, and to co-ordinate control activities.

The Committee expresses the hope that its recommendations and suggestions, if seriously considered and implemented, will contribute to the prevention of further epidemics and help to ensure that the country is fully prepared should cholera again appear in epidemic form.

Government statement on the report shows that the suggestions will indeed be considered seriously. Government has assured that departmental enquiries will be held as a matter of priority into the irregularities referred to in the report and "appropriate action against the officers concerned will, where necessary, be taken." The Government statement further shows that it regards most of the recommendations as sound and accepts them and that in fact some are already under implementation. This is most reassuring and the medical profession as well as the public owe a debt of gratitude to the excellent work of the Committee of Enquiry under the Chairmanship of Senator Khaw Kai Boh. In addition to Mr. Ng Chong Chee, the Committee included two distinguished medical men, namely Dr. John W. Field, a former Director of the Institute for Medical Research and Dr. Haji Megat Khas, a private practitioner.