

Undermanaging health care: Lessons of the plague

Current Science should be congratulated for publishing a special section on the 'Plague epidemic of 1994' (*Curr. Sci.*, 1996, 71, 781). The report sets at rest once and for all, the controversy regarding the etiology of epidemics between August and October 1994 in the Beed District of Maharashtra and the Surat city of the state of Gujarat. The Technical Advisory Committee (TAC) on plague deserves our gratitude for completing so thoroughly the task assigned to it.

The report, however, highlights some glaring deficiencies not only in our health care delivery and surveillance systems, but also in our administrative machinery. Unfortunately the scientific community does not emerge out in flying colours either.

TAC was able to bring together the scientific expertise – from epidemiology to molecular biology, existing within the country, to unravel the total story of the epidemic. The unedifying controversy amongst the various groups of 'investigators' at the peak of the epidemic, not only created confusion amongst the people but also discredited the scientific community nationally and internationally. Notwithstanding Ramalingaswami's words of praise for the Government in dealing with the situation, it is obvious that the existing scientific capabilities were neither mobilized nor co-ordinated with any sense of emergency or responsibility. The whole episode gives credence to the adage, 'There are no underdeveloped countries, only undermanaged ones.'

To start with, I must give all credit to the multiple purpose worker who initially suspected the diagnosis and alerted the medical officer at the Primary Health Centre. This is even more creditable considering that the disease was considered to have disappeared from the country – no proven cases having been reported since 1967. The blame for creating confusion must, therefore, rest with so-called 'specialists' and health administrators. It is unfortunate that those with real expertise, and not just 'assumed competence', were not involved at the very outset. As a matter of fact, it is regrettable that at least some of the competent persons who in

the very beginning offered their services voluntarily, were denied access to the available pathological material and even ordered to surrender whatever they had. I make this statement with full sense of responsibility, having personally talked to the then Director General, Health Services, Government of India on this issue at that time. His assurance to remedy the situation obviously did not materialize. There was inadequate and unsatisfactory collection of specimens throughout the fortunately short-lived epidemic. This assumption is confirmed by the TAC report (*Curr. Sci.*, 1996, 71, 783), 'The serological investigations in Beed and Surat outbreaks were handicapped by lack of availability of paired serums at appropriate intervals. Acute phase sera were generally not available.' In addition, one wonders as to who was at fault for not obtaining aspirates from bubos for establishing the diagnosis of the Beed outbreak. This is not the first time that such a glaring lapse has occurred. Some years ago during an outbreak of gastroenteritis in Delhi, there was enough confusion about whether it was an epidemic of cholera. Enquiries soon after from the then Director General, Indian Council of Medical Research whether efforts had been made to collect and preserve appropriate blood and stool specimens for detailed studies failed to elicit the necessary information. Obviously these were not.

The report also highlights the fact that the agency/agencies primarily responsible for surveillance and investigations of such epidemics are either ill-equipped or ill-prepared to meet the challenges of the occasion. The Defence Research and Development Establishment (DRDE) which ultimately undertook the task of isolation and characterization of *Y. pestis* from rather unsatisfactory stored cultures, needs to be congratulated. However, one presumes that the agency primarily responsible for it was unable to discharge the responsibility satisfactorily! It is regrettable that scientists at NICD – the National Centre for Plague – are in need of strengthening 'in its microbiological and molecular genetic capabilities' (page 786). Obviously this weakness was not recognized early enough to mobilize from the

beginning scientists at AIIMS, PGI, DRDE, CCMB, who finally were able to establish the cause of the epidemic utilizing the latest diagnostic techniques. I am tempted to quote from the book review on *Plagues. Their Origin, History and Future* in the same issue of *Current Science* (page 807), 'It is one of nature's supreme ironies that, during the unusual juxtaposition of circumstances that leads to an outbreak of plague, all the major participants in the drama are sick. This includes the humans, the rats, the fleas and the very bacteria themselves.' To this may be added the national health administration!

Willis in his book attributes the low mortality associated with the 1994 plague to 'band aids' (antibiotics and insecticides) but cautioned about the need to address the underlying reasons that provoked the epidemic in the first instance. Panda *et al.* who carried out the molecular characterization (see pages 794–799) observed the unique ribotype of the *Yersinia* from Beed and Surat, quite different from isolates tested from other regions of the world. One wonders if after the completion of its assigned task TAC has been able to create a working group to undertake further studies and ensure continued surveillance.

It is gratifying to note that in April 1996, nearly two years after the event, the Government of India has established a National Apical Advisory Committee (NACC) for National Disease Surveillance and Response System. Obviously believing in the infallibility of our Administrative Services, the Committee is to be headed by the Secretary of Health, GOI and not the Director General of Health Services or an eminent biomedical scientist.

The recent episode of dengue fever, with a high incidence of haemorrhagic and shock syndrome cases, predicted by medical scientists in the country well in advance (Lall, R. and Dhanda, V., *Natl. Med. J. India*, 1996, 9, 20) once again raises serious doubts about the national will to meet the challenges of emerging and reemerging infections notwithstanding the creation of NACC. For success-

ful implementation of the tasks assigned to NACC require the establishment of a network of surveillance centres distributed throughout the country, staffed with properly trained epidemiologists,

microbiologists and molecular biologists who unfortunately are in very short supply. In any case it is good that at least the need for such a task force has been realized.

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NEWS

New research board for Navy-oriented ocean sciences

The Defence Research and Development Organization (DRDO) has set up a Naval Research Board, effective September 1996. Modelled after the Aeronautics Research & Development Board (AR&DB), the Naval Research Board (NRB) has been set up to strengthen and deepen the knowledge base applicable to the Indian Navy. The NRB has several new features and flexibilities in concept, funding philosophy and operational latitude, elaborated in the Concept Paper, Charter and Executive and Financial Powers of the NRB. Says the 'Concept Paper' in extract:

'If India is to build up the required sea-denial/sea-control capability foreseeable up to 2010-2015 then it will call for appropriate provisioning of a Navy of approximately twice the present size with new weapon systems, surveillance and EW capabilities in all three dimensions. But doing so by import will present insurmountable difficulties; for: *what is developed abroad will not suit our new requirements; what is suitable will be denied; what is not denied will be un-affordable.* This is the already recognizable triple-trap that the Navy will enter in the early years of 2000+.'

Basic philosophy articulating the NRB

The Naval Research Board (NRB) will focus on the generation or enhancement of the applicable knowledge base leading to the exploitation of the sea for military purposes. 'It is important to recognize that the basic philosophy articulating the NRB is the enhancement and expansion of the applicable knowledge base. It is not the definition or

achievement of a future naval operational requirement. The aim is increasing our understanding of a topic area. The NRB's projects will be imagination-driven - not requirements driven.

'The NRB will invite research proposals that focus on substantial phenomena or observations that are not understood, and, that lack of understanding is a serious obstacle to scientific or technological progress.' Elaborating:

- The search is for bright people with novel and/or imaginative approaches. 'If you had all the resources you need to do what you want to do, what would you be doing that you are not doing now.' The unit of funding is the experienced leader-researcher and his small team - typically one post-doctoral researcher and two or three doctoral/masters students.
- The criterion for funding is the novelty of approach and the likelihood of high-quality research being performed by the fundee, and his team.
- The likelihood of possible future application is NOT a criterion for making a choice between alternative/competing proposals.
- The primary expected end result of the research is a small group of qualified people whose expertise resulting from the research can be drawn upon to build an exploitable area of technology in the subject/topic area, and;
- The secondary expected end-result of the research is a body of

knowledge which establishes (or rationally abandons) a potential application of a new, or inadequately understood, scientific principle.

'The knowledge base generated by the NRB through the above philosophy will be embodied in high-quality technical manpower and in the new techniques and design-tools developed through NRB-funding.'

Functions, powers and budget of NRB

- Support basic research that will generate new knowledge potentially useful to the Navy and to train young minds and hands to generate, use and apply that knowledge creatively to the purposes of the Navy.
- Set the principles and practices governing the relationship of DRDO with the academic world; 'think tanks', and non-profit research institutions in India and abroad as well as research strengths in the laboratories of the other agencies like CSIR.
- Consider, and approve, by peer-evaluation, research proposals submitted to the NRB. This evaluation will be accomplished through specialist panels.
- Set up research panels; set funding patterns and funding methodologies for the research panels of the NRB and approve their respective spending proposals for the year.