

Chapter 5

Findings and Conclusions

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FINDINGS

Previous chapters have presented information on the quality and relevance of tropical medicine research at the Gorgas Memorial Laboratory (GML). At the same time, they were designed to provide enough information about tropical diseases, tropical disease research, and research criteria so that research policy makers could place GML's quality and relevance in the context of the goals and capabilities of any comparable organization.

Gorgas cannot be compared to the National Institutes of Health (NIH). Neither can Panama's medical research system be compared to that of the United States. The differences depend on more than simply size. For example, the disease patterns differ, the level and organization of health care delivery differ, and availability of equipment and collaborating scientists differ. Field conditions both create obstacles and present opportunities that cannot be duplicated by an organization such as NIH.

OTA thus finds that **the evaluation of the quality of an institution such as Gorgas cannot take place without explicit recognition of certain premises.** The following are the premises assumed by OTA during this evaluation:

- There is an inherent value in supporting tropical research laboratories in tropical countries. These benefits (see the last section of ch. 1) extend to the tropical country, tropical regions in general, and to the country supporting the activities.
- Evaluations of the *quality* of research are inevitably, and properly, made partly on the basis of fairly objective criteria such as publications record and partly on the basis of subjective judgments by qualified individuals.
- The criteria used to judge quality, although similar in type, need to be modified and weighted differently for basic research or research performed in well-equipped, state-of-

the-art laboratories than for field research laboratories.

- Relevance is directly dependent on the type and location of institution, and it should be examined from each of the appropriate viewpoints (e.g., host country, region, United States, general advancement of knowledge).

With these premises in mind, OTA examined the quality of GML's research against a range of objective and subjective criteria. There was very impressive agreement among the results of: 1) the past scientific evaluations of GML, 2) the critical evaluation of the research design and presentation of articles and manuscripts, 3) the *survey* of expert scientific opinion on GML's quality, 4) interviews with Panamanian health officials and professionals, 5) the examination of the GML staff's publications record, and 6) an examination of GML's record of competing for grants and contracts. All evidence gathered by OTA led to the finding that **the overall scientific quality of GML is high, especially when considered in the context of its status as a research laboratory located in the Tropics.** Quality was, naturally, not uniformly even, but it also appears that the Gorgas Memorial Institute's and GML's management is aware of unevenness and is attempting to make improvements.

Relevance is more difficult to judge, but in general OTA found that the large majority of GML's research is highly or adequately relevant to health concerns and problems of Panama, the tropical American region, U.S. interests, and the advancement of scientific knowledge and the field of tropical medicine in general (see tables 1 and 2 in ch. 1). The evidence for this finding lies, for the first two, in the match up between tropical health problems and GML research directed at them, and from strongly expressed opinions and examples by the Panamanian Minister of Health (who is a former Dean of the Panamanian School of Medicine), his Deputy Minister, the medical director of Panama's Childrens' Hospital (a former Min-

ister of Health and former head of Social Security in Panama), and numerous officials of the Pan American Health Organization.

The importance of GML to Panama cannot be judged solely on the basis of Panama's monetary contribution. Panama is going through a difficult economic period. Even so, the Ministry of Health has arranged a loan to keep GML in operation for the remainder of fiscal year 1983. The value of the land, buildings, and tax-favored status have never been adequately assessed. And to put the often criticized direct financial contribution of \$10,000 from Panama in perspective, the research budget of the Panamanian medical school is reportedly only \$20,000 (34).

As one official of the U.S. Department of State expresses it: Each year, the United States sends a message to Panama and the region by funding GML and supporting activities related to the health of U.S. and Panamanian citizens alike (51).

Activities related to the recent Panama Canal treaty process provide a specific example of the

CONCLUSIONS

OTA concludes that the benefits of supporting GML justify, on scientific and other grounds, the relatively small amount of funds required. Quality and relevance are high. Withdrawing core support from GML would probably not even save the amount of the appropriation, since other Federal agencies, such as the Department of Defense, may need to either develop their own capabilities to conduct research now carried out at GML or to fund similar research at other tropical medicine research centers.

Gorgas is not ideal; improvements could certainly be made. Some of the shortcomings stem from its uncertain funding. As mentioned earlier, the prospect of unstable funding and perhaps closure may have kept individual scientists from joining GML or becoming visiting scientists there and may reduce the desire of U.S. universities to collaborate with GML, on research projects. As an example, two highly qualified entomologists from the United States discussed with GML the possibility of their coming to GML for a period. Uncer-

importance of GML to Panama. As part of the treaty, a Joint Committee on the Environment was established. Panama turned to GML, as the only institution in Panama with the necessary skills and experience, for assistance in relation to environmental protection and human and animal health, and additionally named Dr. Pedro Galindo, formerly of GML, as the senior Panamanian on the Committee.

Relevance to U.S. health interests can be found in the surveillance activities, the training activities, and the various research activities undertaken under contract to the U.S. military. Gorgas' contributions in the areas of malaria, yellow fever, and leishmaniasis illustrate its relevance to the general advancement of knowledge.

Based on the above evidence, OTA finds that **with some exceptions that occur almost entirely within the core-funded activities, the research conducted at GML is relevant to the various parties at interest.**

tainties over the budget and the very future of GML have resulted in not being able to join GML, although one is still considering doing so.

The point about uncertainty should be placed in perspective: most research scientists operate under some degree of uncertainty about future funding. In GML's case, the uncertainty applies to the very existence of the entire institution. Thus, the uncertainty is a matter of degree (though perhaps a significant one), and not a situation unique to GML.

Another example of the effect of uncertain funding has been the decision by the U.S. Navy to hold off on the next scheduled training class, because the course would extend a few weeks into fiscal year 1984.

Gorgas itself could improve its standing and its relevance by:

- being more aggressive in its publishing;
- by making better use of its Advisory Scientific Board (e.g., in planning for research di-

rections, as part of a more formal and effective peer review process and as visiting consultants);

- by more actively seeking out associations with universities and collaborations with a range of groups from other countries and international organizations;
- by making strategic plans to move more fully into the developing areas of modern science (e.g., work with monoclonal antibodies and other immunological diagnostics, and biotechnology approaches to vaccine-related research and development*);
- by making more of an effort to run vigorous visiting scientist and fellowship programs; and
- similar types of actions that should be considered by GMI/GML at a very near date.

Gorgas has also done a rather poor job of letting Congress, Panama, and the public know how much it is doing and what its capabilities are. Its financial base should be broadened. Alternately, or in combination with broadening, some change in the structure (e. g., an international arrangement of support) of GMI/GML might be undertaken. Any such step should be taken carefully, in view of the importance of GML and its activities (e.g., its disease surveillance work) to the United States.

OTA concludes that the only benefit to the United States of defunding Gorgas would be saving of perhaps significantly less than \$2 million. The negative consequences would include loss of one of the few, high-quality, broadly relevant,

● The contributions of the International Laboratory of Research on Animal Diseases in Kenya to the molecular biology of African trypanosomes is an example where a field unit has done important work at the forefront of science (68). Other good examples are the centers supported by the Rockefeller Foundation's Great Neglected Diseases Program.

tropical research institutions located in a tropical country. The Army's malaria research would be hurt, as would disease surveillance in the Central American region. The U.S.'s standing in Panama, and perhaps more broadly in tropical America, would inevitably suffer. For example, the lead editorial on July 7, 1983, in Panama City's leading newspaper spoke emotionally of the "incomprehensible budget policies" of the United States in regard to defunding Gorgas.

Ironically, GML is in danger of extinction at the very time that U.S. interest in Latin America is high, and at a time when tropical medicine has never been more relevant to the United States. Health aspects of the increased numbers of refugees in the United States, an increased amount of international travel, and the growth of multinational corporations located in tropical regions are examples of this heightened relevance.

Loss of the training activities at Gorgas would not only hurt the U.S. Navy but would also preclude the desirable possibility of expanding such training in tropical medicine to include more visiting physicians and students in health sciences* from the United States and to increase the number of Panamanians and others attending.

In summary, OTA concludes that the positive consequences of U.S. core support of Gorgas greatly outweigh the amount of funds involved. Defunding now, followed by an appreciation of the loss later and a subsequent attempt to reinstate such a research capability, may result in much larger required investments, an inability to re-create successful conditions for quality research, or both.

*For example, GML and Yale University have an ongoing program whereby students of Yale's School of Medicine go to GML for 2- to 3-month periods for experience in research and clinical aspects of tropical medicine.