

COMMENTARY

NPHI Creation: Lessons Learned and Future Directions

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INTRODUCTION

Recent papers about National Public Health Institutes (NPHIs) (1,2), including those published in this Journal (3–5), have highlighted the importance of having strong, coordinated entities to serve as a national focus for public health. The International Association of NPHIs (IANPHI) was formally chartered in 2006 as an association of NPHI directors. Funded initially by the Bill and Melinda Gates Foundation, IANPHI helps link the NPHIs of the world and assists countries without NPHIs develop them.

To help guide IANPHI's assistance programs and contribute to knowledge and understanding of NPHIs, IANPHI has conducted several assessments. We provided results of a survey of IANPHI members in an earlier issue of this Journal. Our data showed that NPHIs conduct many functions that may be considered public goods – functions critical for the health and well being of their populations. Our data also described the range of NPHI resources, capacities, and activities.

We also studied NPHIs to understand how they had been created – why are NPHIs formed, key ingredients in their successes, and barriers to greater impact. Here we summarize these results and describe how they are informing IANPHI's activities.

METHODS

We conducted formal interviews with four current and one former NPHI directors (David Butler-Jones, Public Health Agency of Canada, Canada; Oni Idigbe, Nigeria Institute of Medical Research, Nigeria; Mohammed Hassar, Institut Pasteur du Maroc, Morocco; Barry Schoub, National Institute of Communicable Diseases, South Africa; David Sencer, Centers for Disease Control and Prevention, USA). We selected these NPHIs to reflect a range of experiences with NPHI creation. We based each interview on a structured instrument that included questions on the history and its current status. At least two interviewers participated in each interview. The written summary of each interview was reviewed by the interviewee, who was given the opportunity to correct errors and to add or delete material before the case study was posted on the IANPHI website (www.ianphi.org).

RESULTS

Characteristics of Participating Institutions

We collected data about five NPHIs, as noted above. We present detailed information in Table 1. These five NPHIs range in age from 4 to 88 years. Each grew out of precursor institutes. The three oldest institutes started as research and control organizations for infectious diseases, often focused on vector-borne diseases. The two newest ones were created in response to major recent events. South Africa created its NPHI as part of government restructuring when apartheid ended. Canada's NPHI was created rapidly, in less than a year, following the outbreaks of severe acute respiratory syndrome. It reflected a perception that the Canadian government's health system had failed to respond adequately.

Communicable disease activities constitute important parts of all of the NPHIs in this evaluation. The NPHIs in Canada and the United States also work on non-communicable conditions. In the United States, non-communicable disease work was added by accretion and extension. The clinical chemistry laboratory, for example, was added when the Framingham Heart Study, a longitudinal evaluation of thousands of people that began in 1950s, needed a standardization program for laboratory assays of

Table 1: Characteristics of NPHIs participating in the case studies

| <i>Name</i> | <i>Year of creation</i> | <i>Precursor organizations</i> | <i>Impetus for creation</i> | <i>Estimated 2007 budget in US dollars (% from national government)</i> | <i>Other major sources of funding</i> | <i>Staff</i> |
|--|---|---|--|---|---|--------------|
| <i>Canada</i> Public Health Agency of Canada | 2004 | Population and Public Health Branch of Health Canada | Concern about the inadequacy of the response to severe acute respiratory syndrome (SARS) | \$510,800,000 (100%) | None | 2,050 |
| <i>Morocco</i> Institut Pasteur du Maroc | 1966 (overseas laboratories established in 1911 and 1929) | Overseas laboratories of the Institut Pasteur, Paris, in Tangier and Casablanca | To conduct microbiologic research and produce vaccines and sera | \$1,500,000 (47%) | Fee for service | 245 |
| <i>Nigeria</i> Nigerian Institute of Medical Research | 1920 | Medical team under the auspices of the Rockefeller Foundation Yellow Fever Commission to the West Coast of Africa | To study yellow fever | \$2,340,000 (45%) | Private foundations, donations, fee for service | 338 |

Table 1: *Continued*

| <i>Name</i> | <i>Year of creation</i> | <i>Precursor organizations</i> | <i>Impetus for creation</i> | <i>Estimated 2007 budget in US dollars (% from national government)</i> | <i>Other major sources of funding</i> | <i>Staff</i> |
|--|-------------------------|--|--|--|---|--------------|
| <i>South Africa</i> South Africa National Institute for Communicable Diseases | 2002 | National Institute for Virology and South African Institute for Medical Research | Need for an organization with strong laboratory components that could also include communicable disease surveillance and epidemiology; opportunity was provided by the end of apartheid, reorganization of the government's laboratory structure | \$11,744,622 (36%) | National Health Laboratory Services, private foundations/ research grants | 235 |
| <i>United States</i> Centers for Disease Control and Prevention | 1946 | Malaria Control in War Areas | Recognition that control techniques could be applied to a wider range of problems than malaria and vector-borne diseases | \$8,500,000,000 federal government share only, information on other sources of funding not available | Not available | 15,000 |

cholesterol. Health education was added in 1972, when then-director Dr. David Sencer agreed with the Department of Health, Education, and Welfare – the cabinet level department in which the US NPHI was based – to place the Office of Smoking and Health in CDC. The office provided a base for further development of health education efforts.

When the NPHI in Canada was being formed, its scope – whether to limit its focus to infectious diseases – was a controversial topic. Dr. David Butler-Jones, instrumental in its creation, became its first director. He and others argued persuasively that non-communicable conditions and infectious diseases share many contributing factors and that the tools for addressing communicable and non-communicable conditions are similar. They persuaded decision-makers that public health in Canada would be better served by having a single NPHI that could address both infectious and non-communicable conditions.

Success Factors for NPHIs

In discussions about why the five NPHIs were successful, several themes appeared, among them: strong leadership, training and cultivation of staff, diversification of funding, and credibility and trust.

Leadership, as described in the interviews, included a clear vision, ability to motivate staff, ability to articulate a vision for higher-level leadership, ability to be opportunistic, and effectiveness in dealing with controversies and difficult situations. Professor Barry Schoub, for example, envisioned the South African NPHI. He was, at the time, the Director of the National Institute for Virology, and the Director-General of the Ministry of Health. His basic concept and structure of the NPHI were first put on paper, on a napkin over drinks. Dr. Schoub then took advantage of the opportunity created by the reorganization of the government's laboratory structure to stress the importance of an agency that could link laboratory sciences, surveillance, and epidemiology to respond to infectious diseases problems in the country.

In Nigeria, Dr. Oni Idigbe, Director of the NPHI, envisioned an internationally recognized research institute. He has fulfilled this vision through a series of management changes that emulate

academic institutions, including a university-style career progression system that rewards research and publication.

The five NPHI directors mentioned the importance of trained personnel and investment in staff growth and development. Even less-resourced NPHIs, like Nigeria's, invest in staff training, where staff are encouraged to earn graduate degrees and to focus their dissertations on priority topics for Nigeria's NPHI. They can continue to receive their salaries while completing their degree requirements.

Government funding for the NPHIs in our sample ranged from \$1.5 million to \$8.5 billion. For two of the Africa NPHIs in our study, research grants, often from foundations, were a major source of budget expansion. To attract funding, the NPHI directors stressed the importance of establishing a track record. South Africa's NPHI staff contribute 70–80 journal papers a year, increasing their credibility with funding organizations.

All the directors said that an NPHI needs to be opportunistic in order to grow. In the United States, for example, in the 1970s CDC willingly accepted programs in rat control and lead poisoning, forming a platform for CDC's environmental health activities. CDC's programs in birth defects and injury control began as small efforts by creative staff in other programs who recognized that their epidemiologic skills could be useful tools in these new areas.

According to the directors we interviewed, NPHIs must be a trusted source of information. Credibility means providing clear and honest information to the public, legislatures, public officials, and funders. NPHIs must be open about scientific findings and public health risks while taking political considerations into account. By statute, Canada's Public Health Officer, who is also the NPHI director, is expected to be an independent voice on public health issues. This role can require diplomacy, being respectful of all government agencies involved in responding to public health problems.

Additional "lessons learned" during these interviews, such as ideas about partnerships, and suggestions for other countries creating NPHIs may be found at www.ianphi.org.

DISCUSSION

We predict that governments will increasingly consolidate their public health functions and that future public health crises, such as

the threat of pandemic influenza, will speed the formation of NPHIs and encourage reorganizations affecting existing NPHIs. For example, Guinea-Bissau and Cote d'Ivoire plan to consolidate or more closely coordinate critical public health functions. IANPHI may provide financial and technical support. As other countries embark on such efforts, visits to NPHIs, discussions with directors, and reviews of lessons learned, will surely provide a helpful frame of reference.

The success factors described by NPHI directors are consistent with those for many kinds of organizations. Given the limited resources in many NPHIs, determining how to develop the skills and capacities to achieve them may be difficult. Our case studies highlighted the importance of leadership and management. Many of those appointed to oversee NPHI creation or lead NPHIs lack training in leadership and management skills. In an informal survey national public health agency leaders in Africa told us that developing leadership and management skills was a high priority, second only to technical/scientific training. Thus, IANPHI will emphasize leadership and management development, making strategic and implementation planning and management an explicit part of its NPHI creation projects. IANPHI will also focus on leadership and management at annual meetings.

CONCLUSION

Despite differences in size and focus of their organizations, the five NPHI directors interviewed for this evaluation report similar factors they consider critical for their success. In countries creating NPHIs, attention to these may help to garner support and encourage growth.

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