

**First Latin American Conference on Research  
and Innovation for Health**

**Río de Janeiro, Brazil, 15 to 18 April 2008**

Working Group:

**Human resources for health research**

**Background**

1. Latin America benefits today from stable macroeconomic environments and greater pragmatism in policy and institutional reform. Regional success is measured in terms of economic growth, foreign investment inflows or export dynamism. Democracy is widespread, and is gaining strength from improving fiscal policies (OECD, 2008). The economy is still dominated by the primary and secondary sectors of activities, with some remarkable exceptions in high-tech areas, in which a more dynamic knowledge-based economy is growing, particularly in aircraft industry, pharmaceuticals production, communications equipment, computer and office machinery and in the biofuel R&D. National technologies have been developed in more advanced countries of the Region side by side with technology transferred and adapted from industrialized countries.
2. Nevertheless, inequality and poverty continue to be the region's main challenges; according to the United Nations Economic Commission for Latin America and the Caribbean. Social economic, development and educational indicators vary across the countries in the Region.
3. The public academic system has played a primary role on human resource development and knowledge generation both for professional practice and for science and technology. The national systems and/or plans for education and science and technology are at different levels of structural organization and development within the Region. A critical issue is the need to establish national human resource policy bringing together the education and health sectors and defining clear responsibilities in the training and work market.
4. In the last decades there has been a strong privatization in the offer of academic courses in all countries. A large number of Universities and courses have been created without a proper analysis of market, career prospects, training opportunities, and the critical mass of teachers and practioners. The overall quality seemed to have been compromised to attend the demand. Some countries have made continuous effort to regulate such expansion. In the health area, there is still a need for better strategic definition of the resources, skills and competencies required to deal with public health priorities.
5. The research councils and funding agencies have supported human resources development and improvement of the quality of tertiary education. In some countries, (e.g. Brazil, Mexico) the introduction of formal assessment and classification systems of

postgraduate courses has stimulated improvement in quality and facilitated the access to funding. Harmonization of methods and systems are still needed for the Region overall.

6. Research training in the area of public health and related disciplines has grown over the last decades but the biomedical sciences, especially basic and laboratory research, is still dominant, and although not necessary related to technology and innovation. There is still a need to applied field research and research associated to socio-economic determinants of health.
7. The availability of support for research has been based on scientific merit competitiveness, but not always linked to national or regional priorities. International external funds have influenced and, in some cases, distorted the national research agenda and biased the development of human resources.
8. The pharmaceutical and biotechnology industry itself has encountered an exceptional environment for product development and subsequent commercialization of products in Latin America. The national regulatory agencies are increasing the monitoring and evaluation of data and clinical studies before commercial licensing, but there is still room for improvement. Guidelines on intellectual property issues, biosafety, bioethics, regulatory aspects, and public awareness adapted to the region's needs are lacking.
9. The potential role and collaboration of the commercial sectors in developing human resources has been explored only to a limited extent and the interaction between the two sectors is incipient. Taking into account that in a global environment, knowledge and innovation are driving forces for competitiveness, development and sustainability, there is a critical need to review the human resource development basis and the research environment associated with it to foster the impact of health research and science and technology in reducing the social inequities and the burden of diseases.

### **Challenges for strategic development**

10. Human resources development remains the key component for health research, S&T innovation as well as, for service delivery. The quality of academic centers relies on appropriate facilities, updated and dynamic curricula, good training practices, experienced cadre of professionals, quality assurance processes, adequate funding, North-South and South-South collaborations, opportunities for post-training re-entry mechanisms and an overall conducive research environment including research and institution management capability.
11. The advancement of information and communication technologies (ICT) has opened a promising perspective for transformation in education by its multiplying and coverage effect through distance learning methods, online sharing of information, continuing education possibilities, open access to scientific literature, and a wider interactive engagement of different sectors of the community.
12. With increasing global awareness of, and cooperation in international health issues, much more attention has been dedicated to building standards, good research practices, research

ethics, and accreditation mechanisms, to facilitate international partnerships and comparison of data.

13. Several issues at the individual, institutional and system levels remain unaddressed, such as the brain drain, strategies for retention of young professionals, opportunities for scientific career initiation after completion of postgraduate training, better links with biotechnology and industrial sectors, ethical and intellectual property rights related to external funded research. The absorption of well trained individuals in a sustainable way requires well developed institutions.
14. Training for innovation requires the engagement of scientists in all stages of the R&D process, optimizing the development of more relevant and affordable intervention tools, strategies and policies for disease control. Capabilities to be promoted will have a broad range, from supporting an enabling institutional framework within national health research systems, through development of managerial capacity, R&D skills in the biomedical and socioeconomic areas and capacity to advocate the integration of research results into policy and practice.
15. Research ethics has emerged as a strict requirement in studies involving human subjects. Most critical issues are related to consent of volunteers to participate, the standard of care, what happens once a research project is completed and criteria for reviewing research proposals. Formal training courses and postgraduate programs in bioethics have been established in Brazil and Argentina, and the trend is to expand to other countries.

### **The way forward**

16. There is an immediate need and great opportunity to promote human resources for health research for the following reasons: i) increased evidence that public health tools are more likely to be scaled up and integrated into the health system when they are locally developed, ii) advances in basic sciences, including genomics and in applied research, as well as in information technology, have accelerate the pace of science and research productivity, iii) there is an enormous opportunity to synergize with new players who are investing seriously in health research, iv) renewed interest in strengthening the science and technology (S&T) systems in developing countries.
17. In the health sector there is a need to bridge the gap between the research community and policy-makers and service providers. There are some good examples in the region (Ministry of Health, Brazil) where national research agenda, developed through a wide consultation, now constitutes the priority research lines for support
18. A better match between the profile of human resource for research and public health needs is likely to potentiate the impact of research results on health
19. The new environment will require a broader research professional profile that, in addition to the traditional discipline training, cross-cutting critical issues such as research management, policy decision, strategic planning, evidence assessment, interpersonal

relationships, health economics, research ethics and governance, are also part of the skills and competencies required.

20. Systematic reviews and research syntheses have contributed to increasing the relevance of scientific activities by bringing research evidence to formulate policy options and cost-effective practices.
21. Funds for research in communicable diseases and, for neglected infectious diseases in particular, have grown at accelerated rates with consequent expansion of health research and opportunities for hands-on training, research and training partnerships and consolidation of networks.
22. The assessment of any process of change would require a monitoring and evaluation process through specific indicators of progress. The aim is to avoid fragmentation, overlapping or gaps, and potentiate closer interaction between health research and innovation systems, to increase the capacity of developing countries for health innovation
23. Human resource policy are expected to lead researchers and public health professionals from developing countries to move beyond traditional research training to build leadership at individual, institutional and national levels, so countries can better initiate and lead research activities, develop a stronger presence in international health research and effectively use research results to inform national/regional policy and practice.

### **Concluding remarks**

24. Despite progress and increasing investment in Latin America, the impact of health research on health policies and practices, and on reducing the risks and burden of diseases, has not been optimal.
25. The changes in the S&T&I landscape have create the need and opportunity of a renewed political architecture and new strategic plans for human resources for development.
26. There is a need of better coordination between the health care, S&T&I and educational systems to promote the development human resources for investigation committed to public health priorities.
27. The intention of this introduction is to raise issues and challenges to guide the group discussion. The participants are expected to provide information and data from respective countries. The following are proposed:

### **Group discussion: overall objective**

The discussion group is invited to identify common issues, knowledge, gaps, challenges and opportunities and to provide recommendations to improve human resource development for science, technology and innovation in health.

## Questions

The discussion should be guided by the interest of Latin American countries to collaborate in enabling national health research and educational systems to develop, understand and adapt - as opposed to purchase or import - technologies to reduce the burden of disease, reduce inequalities in health and increase the wellbeing of populations

### Mapping resources

1. Are the range of professional profile and academic programs of our universities suitable to initiate careers in S&T&I and contribute to generate evidence to inform health policies?
2. What type of research is being carried out in the Latin American Region? To what extent is this research responding to National and Regions needs?
3. Are current indicators of human resources for research, S&T reflecting adequately countries capacity? Which types of data base and indicators should be introduced?
4. Are current modalities of research training grants such as formal degree training, post-doctoral, hands-on fellowships, re-entry grants, and mentorship and author-aid schemes necessary and sufficient for health research training? Which modality or alternative should be emphasized?
5. Is the contribution of current postgraduate programs satisfactorily to build a critical mass of human resources for S&T in biomedical, socio economic and behavioral sciences? Which skills and competencies are needed to support research for development?
6. Is there coordination or interface between the health system and S&T&I system in profiling human resource for health research?

### Identifying gaps

7. Is the demand and supply balance for human resources for health research adequate?
8. Should the Regions strive for excellence in all fields? If no, how to choose areas where countries should concentrate their efforts?
9. Can research self-reliance be promoted through building/strengthening national health research systems and institutional frameworks
10. Is the balance of funding opportunity between individual training, institution development, enabling environment and research-driven training adequate to support S&T&I development?
11. To what extent does or should the health system influence the profile of human resource for research? How to match the human resource profile and public health needs?
12. Should capacity to advocate the translation of research results to policy and practices be introduced into academic programs?

### **Finding solutions**

13. How to make higher health education more relevant to public health, human development and innovation?
14. How to develop research leadership - to establish national research/development agendas attract resources, new researchers, groups and networks?
15. Which mechanisms can be used to improve scientific management practices to ensure quality, efficiency, accountability and results orientation?
16. How to expand opportunities for participating in international R&D partnerships?
17. How to enhance research productivity, ensuring relevance and utility based on national needs?
18. How to incorporate research culture and research ethics principles in the training and practice of health workers?

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