

Brazil's science is doing well. What about our technology?

A widespread perception (confirmed by the data on science and technology in Brazil) is that our science is doing well, but that our technological development is still lagging far behind.

The number of PhDs has increased admirably since the 1990s, as have the number and quality of our graduate studies courses, especially in the health field. Even the total (and more traditional budgets) for science and technology have improved. The Ministry of Health is fully involved in the thrust of the Lula Administration, allocating and implementing a major budget for science and technology in health through calls for bids and programs (<http://www.saude.gov.br/sctie/decit/index.htm>). Statistics with the good news on Brazilian science from the Coordinating Body for Training University Level Personnel (CAPES), the National Research Council (CNPq), and the Funding Agency for Studies and Projects (FINEP) are available and readily accessible, so it would be exhausting and unnecessary to repeat them here.

In the specific case of health, we held the 1st National Conference on Science, Technology, and Innovation in Health in July 2004 in Brasilia (see the Ministry of Health's website). The Federal government launched its Policy for Industry, Technology, and Foreign Trade (<http://www.desenvolvimento.gov.br/arquivo/ascom/apresentacoes/Diretrizes.pdf>) in May 2004, to be implemented by various agencies in the Federal public sector (Ministries, the National Economic and Social Development Bank, or BNDES, FINEP, and others), defining health inputs (specifically medicines) as a priority for both industrial development and spawning innovations through partnerships between research institutions and companies. The National Congress passed the so-called Innovation Act (# 10.973, December 2, 2004) precisely to foster various such forms of interaction.

On the other hand, the currently discouraging status of Brazilian health technology is also a reality, whether one analyzes health inputs (vaccines, medicines, diagnostic kits and reagents, equipment, clinical and surgical materials and procedures) or science and technology in the fields of public health and clinical care.

It is a fact that over the course of the 20th century Brazil did not develop a single vaccine or drug, but only a handful of diagnostic resources. In this area our domestic industry imports, glosses, or copies. Our universities and institutes conduct teaching and research (oftentimes quite well; other times not so well), yet they produce few innovations that actually reach the country's health services.

In the fields of public health and clinical care, where the borders between knowledge and application are often not very clear, the contributions have also not been extensive, except in some stages of health policy-making. An example of the latter was in the 1980s with the implementation of the Unified National Health System (SUS). Yet Brazilian academia is still far from making its best contribution to the health services in these two major fields of health research.

What should be done to tackle this challenge? In addition to capitalizing on the prime moment that Brazilian science is experiencing in several of the above-mentioned areas, I believe that academic institutions themselves should actively pursue profound changes in their relations with (and participation in) the health system. Here at FIOCRUZ, for example, we have created two major programs for technological development: one for health inputs (PDTIS) and the other for the fields of public health and clinical care (PDT-SP). These two programs are intended to make the institution a protagonist in the formulation and implementation of health policies, development of tools for the health system, generation of healthcare and management protocols for the Unified National Health System, and innovations in vaccines, medicines, and diagnostic resources. All of this with a reliably oriented approach, quality, and evaluation of results, in order to use the best scientific evidence to effectively contribute to the advancement of health and living conditions for the Brazilian people and the improvement of our health system.

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