

Health Research Profile of Lithuania

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1. Introduction

This background paper was prepared, at the request of the WHO Regional Office for Europe, as one of country case studies within the framework of the consultative process for the *International Conference on Health Research for Development*. Its purpose is to provide a critical review of the processes that have taken place in Lithuania in the area of health research in the 1990s, when major political, social and economic changes occurred, thus taking the country through a painful period of transition. This, of course, had a considerable impact, not always positive, on all aspects of life, including health research.

2. Background information

Lithuania is situated on the south-east coast of the Baltic Sea, bordered by Latvia, Belarus, Poland and the Russian Federation (the Kaliningrad Enclave). Its territory covers 65 300 sq. km and its population is 3.72 million, of whom 81.4% are of Lithuanian ethnicity, 8.3% Russian, 7% Polish and 3.3% other. The capital city is Vilnius, and the second largest city Kaunas.

Before the 1990s the general architecture of health research management in the country was three tiered:

- concentrated on the two universities in Kaunas and Vilnius (major part);
- carried out in specialized and independent research institutes (two in Kaunas and five in Vilnius);
- related to the system of the Lithuanian Academy of Sciences (a small proportion of fundamental research).

Since the major part of health research was carried out in the universities, it might be of interest to note that Vilnius University was founded in 1579 and Kaunas University in 1922. In 1950 the Medical Faculty of Kaunas University was transformed into the independent Kaunas Medical Institute, which in 1989 became the Medical Academy, and in June 1998 was upgraded to the Kaunas University of Medicine. At Vilnius University the Faculty of Medicine has been in operation for more than 225 years. While a University degree in medicine is awarded by both schools in Kaunas and Vilnius, the degree in dentistry, pharmacy, nursing and public health is awarded in Kaunas only.

3. National research management scheme

The former model of science and research management was rather centralized and rigid, under the firm control of Moscow through a State Science and Technology Committee. There were three principal channels to that central control:

- through the system of the Academy of Sciences;
- through the universities;
- through the network of specialized independent research institutes.

Control was exercised through financing and an obligatory annual reporting system.

As part of an overall liberation movement, Lithuania invested a lot of effort in making science and research as free from bureaucracy as possible. Already in 1989 the Lithuanian Association of Scientists was established, which immediately embarked on preparing the basis for the restructuring of training, research and science management schemes. The National Research and Science Council was established in 1991. It is the highest expert body in the country for this field and is freely elected by all researchers in the country, representing universities, research institutes and the Lithuanian Academy of Sciences. Within the structure of the Council there are a number of committees, one of which is the Biomedical Research Committee. The decisions of the National Research and Science Council are binding on all research institutions. Usually they are of broad

application, sometimes even approved by the Government, for example requirements for scientific degrees or awards of scientific titles, requirements for doctoral dissertations or university teaching diploma etc. The routine management of the research is carried out by the Senate of the University or the Research Council of the institute. This involves planning, balancing between fundamental and applied research, monitoring, self-assessment and reporting at the national level (National Research and Science Council, sometimes Ministry of Education and Science).

The standards of research carried out by various institutes in Lithuania, including health research, are assessed in broad terms by two mechanisms:

- publications in national and international periodicals or monographs;
- doctoral or university teaching diploma dissertations presented on the basis of research publications.

While a Master's thesis and a Doctoral dissertation are research components of a much broader university-based study programme, the preparation for a university teaching diploma is a purely individual initiative and motivation. The qualification is an essential requirement for a full professorship.

The health research architecture strictly follows the above-mentioned national managerial scheme. However, health research in Lithuania has two important special features:

- All research projects involving human beings and laboratory animals must be reviewed and inspected by the National Ethics Council for Biomedical Research.
- Under the Ministry of Health, the Health Research Council takes care of research projects that are of prime interest to the Ministry. The managerial process is implemented through a grant system that provides funds for those projects and requires obligatory reporting on results achieved.

4. Structural changes in the architecture of health research

The changes in the organizational structure of health research have been determined and guided by two major decisions taken by the Parliament of the Republic of Lithuania in October 1991 and February 1992. These were:

- The approval of the New National Concept of Health for Lithuania (1991);
- The adoption of the Law on Science and University Education (1992).

While the Law called for the integration of research and teaching, the New National Health Concept seeks to integrate three major functions in medical education – teaching, health research and health care.

In implementing these major decisions, Kaunas University of Medicine achieved full-scale integration by 1992-1993, with all three functions under the one roof of the University. Today's integrated structure of Kaunas University of Medicine is as follows:

- the full-time teaching segment, with 3450 undergraduate and postgraduate students and 367 teaching staff in five faculties (Medicine, Dentistry, Pharmacy, Nursing and Public Health) and the Postgraduate Education Centre;
- the full-time research segment, with 270 researchers in four research institutes (Biomedical Research, Cardiology, Endocrinology and Psychophysiology and Rehabilitation);
- the Teaching University Hospital with 2200 beds and 4800 staff (of whom 721 are physicians).

A large part of research and hospital staff are involved in the teaching process. It is also worth noting that, as part of postgraduate training, 77 students are enrolled in MPH and 179 in full-time Ph.D. programmes. They, thus, constitute a substantial, active group of young people directly and systematically involved in health research.

In Vilnius the implementation of the integration processes has not gone as far as in Kaunas. Only the Institute of Pediatrics has been incorporated into the Faculty of Medicine of Vilnius University with, at present, approximately one third of the teaching staff and medical students enrolled, compared to Kaunas. In addition to the Faculty there are four independent research structures in Vilnius directly involved in health research:

- the Research Institute of Experimental and Clinical Medicine;
- the Research Institute of Immunology;
- the Institute of Hygiene;
- the National Research Centre of Oncology.

A very specific research and industry structure in Vilnius is the company *Fermentas*, which specializes in enzyme research and production, thus contributing considerably to fundamental health research.

It is noteworthy that the Lithuanian Physical Culture Academy in Kaunas has been involved in research projects related to physical exercise for a couple of decades, and in public health since 1955, when a new Faculty was opened there. Klaipeda University has also intensified its research efforts, especially since a Public Health Faculty was opened there in 1999.

5. Financing health research

It has to be admitted that the transition to a market economy in Lithuania – as in all the countries of Central and Eastern Europe - turned out to be a rather painful process. Without other sources of funding for research, the state budget line for research in general, including health research, was getting smaller and smaller. The deteriorating economic situation was the most serious reason, but another reason was the continuing tradition of the previous rigid model of relying on state-controlled financing with no experience of involving multiple, private sources of funding. This resulted in a situation where the State budget covered only small scale salaries for researchers and, in part, the costs of infrastructure maintenance, with nothing left over for research or for modernization.

It must also be admitted that spending the major part of the State budget on salaries had the silent, unanimous agreement of the Lithuanian research community as an effort to save research potential and ensure the survival of research institutions in this difficult transition period. This decision was based on the expectation that these measures were temporary, that the country's economy would recover, and that researchers would develop the means to attract multiple private sources of funding.

At present, health research in Lithuania is funded from the following sources:

- the State budget (major part);
- the State Research Fund (by competition);
- the Ministry of Health Research Support Fund (by competition);
- the National Health Programme Fund (support to R&D programmes/projects only);
- the Lithuanian Branch of the Open Society Fund (by competition and support to R&D type projects only);
- international Support (WHO, ES-PHARE, Nordic Council, bilateral agreements between universities and research institute);
- individual fund-raising initiatives for specific projects;
- pharmaceutical industry (increasingly for specific clinical trials).

In recent years researchers involved in clinical research at Kaunas University of Medicine and Vilnius University benefited considerably from the ongoing process of modernization of diagnostic and care technologies at university hospitals.

6. Health research profile

The titles of research institutions (see section 4) give an idea of the main lines of health research in Lithuania. In broad terms, State-supported research areas can be classified in three major channels:

- 1) fundamental biomedical research;
- 2) clinical research;
- 3) human ecology, health promotion and disease prevention (public health oriented).

While both Kaunas and Vilnius are deeply involved in the first two, the third is mainly carried out in Kaunas, and, in most cases, as part of an international cooperative effort. The type of health research carried out in this third direction, usually in collaboration with WHO, is illustrated in Table 1.

As mentioned earlier, in support of the implementation of the National Health Programme, the Ministry of Health, through its Research Support Fund administered by the Ministry's Health Research Council, contributed to R&D type projects. These projects were run under four major headings:

- maternal and child health;
- health policy development;
- health care reform management;
- environment and health.

For example, in 1999 a total of 683 health professionals were involved in the health research projects supported by MOH, of which only 214 were researchers from universities and research institutes. The rest represented a broad spectrum of structures of the Lithuanian health system, like the National AIDS Centre, National Nutrition Centre, National Radiation Protection Centre, Centre of General Practice/Family Medicine, Regional Public Health Centres, Mental Health Centres, specialized hospitals and primary health care centres, etc. The outcome of this support was the preparation of 40 sets of educational materials, 19 collections of scientific works, 9 monographs, 558 publications in national journals and 173 in international periodicals.

In addition, as mentioned earlier, another indicator to assess research intensity is the process of PhD programmes, part of which is preparing doctoral dissertations based on published results in peer-reviewed periodicals, both national and international. For example, within the period 1995-1999 some 678 doctoral dissertations were presented, of which 223 (32.9%) belonged to the biomedical research area. A hundred of them (45.4%) represent health sciences (71% medicine, 22% public health, 5% pharmacy, 2% dentistry). Again, out of 22 doctoral dissertations in public health, 18 were from Kaunas University of Medicine and only 4 from Vilnius University.

7. Health research for health policy development

National health policy formulation in Lithuania started as early as 1989 with the preparation of the New National Concept of Health. The National Task Force for drafting the Concept was approved by the re-established Lithuanian Medical Association, with the intention of having a broad representation on it of various specialities in health, as well as non-health professionals. However, because this Task Force was chaired by a representative of Kaunas University of Medicine, with quite substantial representation of other members from the same institution who had a long-standing experience of collaboration with WHO, the draft Concept was heavily based on WHO's "Health for All" principles. This also meant that all strategic directions advocated for development of the Lithuanian health system (not just health care) were backed up, first of all, by national population data, and supported by international data. The concept covered such areas as health situation analysis by morbidity/mortality trends with an international comparison, risk profile assessment, which included lifestyles and environment, proposals for health care reform based on

health services research data, changes needed in training of human resources for health, health research directions and strategies for financing health care.

The first Lithuanian Health Report for the 1990s was prepared and published in Lithuanian and English by the research team of Kaunas University of Medicine in collaboration with the Ministry of Health and the WHO Regional Office for Europe. It was used as a background document for the First National Health Policy Conference, held 29-30 March 1993. The health research data since then have been systematically used for monitoring and evaluating health policy development and implementation, for mobilizing cross-sectoral actions for health development, for the preparation of the National Health Programme (approved by the Lithuanian Parliament in July 1998), for preparing annual reports of the National Board of Health (again its membership dominated by health researchers and chaired by a representative of Kaunas University of Medicine), which are published and presented orally to the plenary sessions of the Parliament. The National Board of Health was established in June 1998 and already presented its reports to Parliament in the fall of 1998 and 1999. In addition to the general health situation review and assessment, the Report 1998 concentrated on the social dimension of health and the need to take cross-sectoral action. The Report for 1999 concentrated on health problems of the younger generation. It is planned that the next report will focus on the harmonization requirements of the Lithuanian health system with those of the European Union.

8. Health inequities as the objective for health research

The health researchers involved in population-based or public health research before the 1990s demonstrated the social inequalities and inequities in health that existed in such a small and relatively homogeneous country as Lithuania. For example, from epidemiological studies it was well known that there were urban/rural gradients in the level of education and family income which were reflected in morbidity and mortality differences. However, it was only through the stimulating role of the WHO Regional Office for Europe that a systematic effort in research on health inequities got under way in 1997. Under the auspices of WHO Headquarters Lithuania joined a collaborative project on *Inequities in health*, first by establishing a comprehensive database that included data sets from the National Health Information Centre, Ministries of Education, Health, Social Welfare and Labor and from a number of research projects – CINDI, FINBALT health behaviour monitor, Health Behaviour Monitoring in Schoolchildren Populations, Household Income Monitoring Study, etc. On the basis of combined analysis done at Kaunas University of Medicine and in collaboration with the WHO Regional Office for Europe the publication *Health Inequities in Lithuania* was prepared in 1999. This publication highlights the inequities in health measured by life expectancy, mortality indicators as related to social inequalities, differences in lifestyles and environment.

As mentioned earlier, these data have been extensively used in health policy development and implementation, part of which is the annual reporting by the National Board of Health to Parliament, thus contributing through health research to the overall objectives of the country's development.

9. International evaluation of health research in Lithuania

Even under the former political system, Lithuanian researchers were quite active in international health research, especially research activities coordinated by WHO. In fact, WHO was the only forum for systematic international contacts, of which Lithuanian researchers and research institutions made innovative use. This long-standing partnership with the outside research community might be one of the indicators in the process of assessing the quality of health research by international standards.

However, at the request of the Government of Lithuania and using the resources allocated for this purpose by the Government of Norway, the Research Council of Norway in 1995 made an external

evaluation of research in Lithuania. It covered all areas of research. Extracts from the summary of observations and recommendations relating to health research are given below:

“When carrying out our task of assessing research in the medical field, our panel was fully aware that Lithuania is currently passing through a very difficult period of transition. This has not only imposed serious financial limitations on various types of development. At the same time most sectors of society apparently need to be substantially reorganised. One such sector is the whole health care system, with its many interconnected problems related to capacity, specialisation, education and research. The current process of restructuring and strengthening this sector must understandably be a formidable task.

As for research in the medical and related sciences, part of which have been assessed by our panel, we were struck by the marked differences in quality and productivity that were observed between groups and departments. The reason for the differences was not necessarily the degree of general or practical importance of the topics or fields under examination. In several fields, for example in cardiology, we were impressed by the high standard of projects and results. Some other subjects and fields, such as pharmacy for example, appeared to be very under-developed. There are probably several, complex reasons for such dramatic differences. The local financial circumstances may differ, for one reason or another. Thus there seem to be considerable variations as regards the degree of success in attracting foreign support for research projects. Also, it appears that – before Lithuania became independent – some fields and subjects had developed a more solid base than others had for their continued research work.

Our panel holds the view that a well educated, active and wisely disposed scientific community represents an important asset for the development of a good health care system, with all its practical, educational and scientific problems. Therefore, we were concerned to hear about the recruitment problems, since many young scientists were reported to be leaving their research positions, apparently, mainly for economic reasons.

In assessing a substantial part of the research in medicine and related fields in Lithuania we were left with the impression that there were large variations between faculties, departments and research groups as regards their status and the quality of their scientific work. Another dominating impression is that the whole structure of the system for research and higher education in Lithuania is somewhat fragmented, with less than optimal coordination and cooperation between individual units. These and other impressions gained through our observations of institutions in medicine and related fields lead us, like other panels, to recommend that:

- a strategic, long-term plan be worked out for the whole Lithuanian system of research and higher education.

This should include both internal and external changes. Internally there are, at least in the medical field, room for rationalization and better collaboration between units within the same speciality (e.g. within clinical chemistry, pathology, cardiology, endoscopy etc.) It would be advisable to let the two medical Faculties/Academies make their own proposals as regards such internal changes.

- We also favour institutional changes that would give the Medical Faculty of the University of Vilnius and the Kaunas Medical Academy more overall responsibility for national research in medicine and related fields.
- When strengthening the universities, special attention should be given to the libraries, owing to their central function in the information process. Good libraries are of the utmost importance for both clinical work and all research activities.
- We recommend that a research council system be established in Lithuania. Such a system could be used as a channel for distributing a sizeable share of the total resources available for research. Distribution of funds ought to take place on the basis of scientific merit.

Our panel finally recommends that certain activities be established or improved.

- That outpatient departments, in addition to their role in education, should be invited to carry out research together in cooperation with the main clinical departments to which they belong.

- We also recommend that the organisation of research in clinical disciplines at the faculties should be re-considered. One possibility is to have separate research units within, for example, internal medicine, surgery, pediatrics, rheumatology etc., which would operate in well planned interplay with their clinical departments."

10. Conclusions

Health research in Lithuania covers a wide spectrum of subjects in different areas and research institutions, which are quite heterogeneous in terms of standard and quality, as pointed out in the international evaluation by the Research Council of Norway. Certain conclusions can be drawn as follows:

- Health research in Lithuania in this transition period is suffering not only from gross underfunding, but also from lack of coordination at the national and institutional level.
- Nevertheless, the country has accumulated substantial scientific competence and expertise, which could be useful in underpinning political decisions in health policy development, designing nationwide, regional and local programmes aimed at reducing existing health inequities, promoting health, preventing disease, and improving health care, thus substantially contributing to the overall development of the country.
- International cooperation should be used continuously as a vehicle for exchange of experiences to assess the progress of health system reform in Lithuania by international standards.

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Table 1. Projects coordinated by the World Health Organization and carried out in Kaunas

No	Project title	Coordination	STAR ART	Completion
1.	Kaunas-Rotterdam intervention study (KRIS)	WHO/HQ	1971	1974
2.	Acute myocardial infarction community registers	WHO/EURO	1971	1975
3.	Juvenile hypertension	WHO/HQ	1976	1979
4.	Precursors of atherosclerosis in childhood	WHO/HQ	1976	1979
5.	Comprehensive cardiovascular community control programmes (CCCCP)	WHO/HQ	1976	1980
6.	Biopathological determinants of atherosclerosis	WHO/HQ	1980	1984
7.	Integrated programme for the prevention and control of noncommunicable diseases: Interhealth CINDI	WHO/HQ WHO/EURO	1982 1984	ONGOING ONGOING
8.	Monitoring of determinants of cardiovascular disease mortality (MONICA)	WHO/HQ	1982	1997
9.	European cardiovascular risk: A comparative analysis (ERICA)	WHO/EURO	1988	1995
10.	Healthy city project	WHO/EURO	1989	ONGOING
11.	Epidemiology of diabetes in childhood (DIAMOND)	WHO/HQ	1990	ONGOING
12.	National health policy formulation	WHO/EURO	1991	ONGOING
13.	Health-promoting schools	WHO/EURO	1992	ONGOING
14.	Health behaviour monitoring in schoolchildren	WHO/EURO	1992	ONGOING
15.	National regions for health network in Europe	WHO/EURO	1993	ONGOING
16.	Research and training in public health	WHO/EURO	1995	ONGOING
17.	Health-promoting hospitals	WHO/EURO	1997	ONGOING
18.	Information system for healthy city	WHO/EURO	1997	ONGOING
19.	Health impact assessment	WHO/EURO	2000	PLANNED