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INTERVIEW

Making a Difference: An Interview with Theo Lippeveld - Revitalizer of Routine Health Information Systems

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Theo Lippeveld, M.D., M.P.H., is Vice President of the International Health Division of John Snow Inc. (JSI). For more than 25 years, he has worked as a public health physician in health planning and management in developing countries. He has made significant contributions to the design and implementation of routine health information systems and to the development of integrated and decentralized health systems. This edited and abridged interview is based on my conversations with Dr. Lippeveld in September 2006, as well as subsequent communications.

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How did you get drawn into your work in public health in developing countries?

When I was a high school student, I was already attracted to social services and to working with human beings. Medicine seemed to be a profession with plenty of opportunities to do those things, so I went to medical school.

In 1970 I completed my medical sciences degree at the Katholieke Universiteit Leuven in Belgium. At that time Belgium had a privileged relation with what was then called Zaire and now is again called Congo. I had the opportunity to do part of my internship in the Congo. There I was impressed with the immense heavy health problems and the shortage of doctors to address these needs. So I got very interested in working in developing countries.

When I finished my doctoral degree in medicine in 1974 at Leuven, I also wanted to have a look at Asia, so I volunteered as a doctor at the Holy Family Hospital in Mandar, one of the poorest states of India. I did that until I had no more money left.

Back in Belgium I had to make a choice, either to join the small pox vaccination campaign in India or go to Canada and do a residency in gynecology and obstetrics. I consulted the I Ching, which is one of Confucius' books. It said it was better for me to cross the big water, so I chose to go to Canada.

How did you feel about your choice?

Not very happy. Maybe I should have chosen the small pox work because after 3 years of intense residency with surgery day and night, I was so unsatisfied with the life of a gyn-obstetrician that I decided to stop it.

I went to Antwerp to the Tropical Institute [Prins Leopold Institute for Tropical Medicine] and did a post-graduate diploma in tropical medicine and public health. Antwerp has an excellent public health philosophy and a framework for setting up health systems in developing countries. It was there that I met my public health mentors: Harry Van Baelen and Pierre Mercenier. I still go back to their original documents and teaching materials. They and their work became my public health Bible.

In 1978 I left Belgium to work as a physician and technical advisor at the Ministry of Public Health of Cameroon in Africa. There I was able to apply what I had learned and even use my gyn-obstetrics background. I trained and supervised nursing students, wrote a syllabus for obstetrics, reorganized and supervised the obstetrics service at the rural hospital, and did cesarean sections.

From 1981 through 1984, through the Tropical Institute, I pilot-tested a system of basic health services at the district level, developed and implemented a primary health care curriculum for auxiliary health personnel, and researched and evaluated various

organization issues related to the set-up of basic health services in developing countries. Cameroon was my African learning school. I was there 6 years.

I wanted to get more skills in health planning, biostatistics, and epidemiology, so I went to the United States and did a master's degree in public health at Harvard. When I finished, I was invited to stay at Harvard. I was hesitant in the beginning, but I knew that in Belgium I had fewer opportunities for funding and support. Harvard opened a whole world to me.

Is this when you began working at the Harvard Institute for International Development (HIID)?

Yes, I was offered a position as research associate. HIID brought together the development projects of the various faculties. We had education specialists, micro and macro economists, environmental engineers, and a health section. It was very interesting to put public health in a development perspective, looking at how it is linked to education and the environment. During my 12 years at Harvard, I spent more than half of the time in the field – three years in Chad in Africa and four years in Pakistan.

Universities don't always believe in these multi-disciplinary programs, so for various reasons, Harvard closed the Institute at the end of the 1990s. I decided to move to John Snow, a very service-oriented organization in Boston.

Yes, John Snow is well regarded for its public health care work around the world. What are the highlights of your work at John Snow?

I spent three years in Morocco as Project Director advising the Ministry of Health on policy and planning strategies related to the decentralized health services delivery and health information systems, particularly in mother and child health.

When I returned from Morocco, I became Vice President of the International Division of John Snow Inc. In this position I'm the technical coordinator of the international projects. JSI also has a domestic division. Both divisions focus on underserved populations. In most developing countries, nearly the whole population is underserved. In the United States, as you know, fairly good chunks of the population are really underserved.

At John Snow we want to do quality, state-of-the-art work, according to the available evidence. And we want to contribute to the state-of-the-art and to the evidence in the various areas where John Snow works, such as maternal and child health, HIV/AIDS and other infectious diseases, monitoring and evaluation and health information systems, and logistic support systems for health.

Even though I have corporate responsibilities in managing a division, I have continued to work in my area of interest - the development of good health information systems. Information systems are needed for evidence-based decision-making. As I've written in one of my papers, routine health information systems are the glue that can bring together the currently fragmented health systems (Lippeveld, 2001). When Charles Boelen was launching the Towards Unity for Health initiative, I joined because I saw an opportunity for health information systems to contribute to unifying health systems.

Please say a bit more about information health systems.

Twenty years ago nobody in public health spoke very much about health information systems. When I did my master's at Harvard, there were no courses on health information systems. There wasn't much experiential learning. Harvard didn't require an internship

or a clerkship. We were given a degree in public health, and we were supposed to do public health, but we had to learn public health on our own in the work place.

So medicine wasn't the only health profession that neglected experiential learning.

When Harvard hired me, we were given funding to help re-establish a planning unit in the Ministry of Public Health in Chad. (During the civil war, the planning unit ceased to exist.).

I was about 35 years old and had never set up a health-planning unit, so I said to the Director General of Chad's Ministry of Health, "Maybe we should see what information is available. We can look at the problems and then look at the planning." The Director General said, "That's fine, but there's no information available because there's no information system." So I said, "Maybe the first thing to do is to set up an information system."

That's what we agreed to do. I had a team with me – an epidemiologist, a nurse, and myself as a health planner. We worked with the Director General on his team. Together we defined the information that we needed. We then had to decide where to get this information – in the health facilities, maybe some by surveys. Gradually we built up the health information system from scratch.

At that time, there wasn't much information in the literature about health information systems. Over time I learned about building health information systems by doing it.

After Chad I became an expert in health information systems and started teaching about them at the Harvard School of Public Health. I continued teaching that course until I joined John Snow and left for Morocco.

To what extent are today's students in the health professions learning about health information systems?

I think health information systems are still insufficiently addressed in a lot of medical schools and schools of public health. Some nursing schools that are educating nurses to go into facilities with information systems don't provide any training in information systems for their students. Consequently, too many nurses don't know how to use information for better patient care and facility management. In-service training isn't sufficient.

What steps have you and your colleagues taken to foster the inclusion of health information systems in health professions education curricula and in the health care workplace?

After 10 years of experience, working in Chad, Pakistan, Niger, Eritrea, and Morocco, my colleagues and I wrote a book called "Design and Implementation of Health Information Systems in Developing Countries" (Lippeveld et al., 2000).

It's still the textbook for the development of health information systems in developing countries. Our book was based on a rich set of experiences. In various countries we had been helping Ministries of Health strengthen their routine health information systems. For a long time people at the regional, national and even global level had been neglecting data from the clinic and the community, saying it was of low quality. They argued that it was better to do surveys. But health professionals and managers need good data from the clinic and the community so that they can make good decisions. Consequently, we decided to do something to attract funding for routine health information systems. In 2001 we created RHINO – the Routine Health Information Network.

RHINO is an intriguing name.

We deliberately created a name that attracts attention. Now we have more than 600 members from more than 60 countries. We meet every two to three years. We did an international workshop in Potomac, Maryland in the U.S. and one in South Africa, in Eastern Cape.

This year (2006) our workshop in Chiang Mai in Northern Thailand focused on how you can use information produced in health facilities and in the communities for better action and decision-making. We had 130 participants from more than 30 countries. Our one-week workshop format starts with setting the agenda and the theoretical framework. Then we go in the field for two or three days. After we come back we discuss the topic.

You make sure that the participants get the experiential learning that was missing from your formal public health education. What kind of fieldwork do the participants do?

We interviewed people who work in facility-based and community-based health services and use or don't use information. These people include managers, doctors and other care providers, district managers, people from the government and private sectors.
In Thailand things work pretty well, but in general we have to deal with very fragmented health systems. Very often separate systems have been set up for different health problems and diseases. These vertically organized programs started in the 1980s, when donors still believed that magic solutions existed to cure problems such as diarrheal diseases and malaria. Each program also built up a separate information system, because the general information systems weren't working well. This meant that health care providers were burdened with more forms and paperwork. All over the world we need to streamline health information systems.

What does an integrated health care system look like?

There is integration at the level of the facility and district, between individual health care and community interventions. There is horizontal integration, which means that in a health center or a hospital, maternal health care people are talking with the HIV/AIDS people. Service providers are talking with the laboratory and the x-ray department people.

Multidisciplinary teams and interdisciplinary teams are communicating effectively. There is also vertical communication between community and primary care providers and referral level facilities at district, regional, and national levels. Every month or so people at the primary care level summarize their actions or interventions and communicate those to the district level. The district level collects this information from all the facilities and looks at indicators of coverage and how the health services are doing.

What does an effective routine health information system look like?

There are inputs, processes, and outputs. Your inputs are your information needs. First you need to define what information you need at the facility, district, and national levels. You translate those information needs into a way that you can measure change. That's an indicator. For example, if you want to provide prenatal services to all pregnant women in a particular catchment area, you want then to measure, with an indicator, how many women in that catchment area have received prenatal care at the end of a defined time period. That's a coverage indicator.

After you decide what your indicators should be, then you have to operationalize them. We focus primarily on the routine facility or community-based information system. It's a services-based method of collection as opposed to the population-based method of collection, such as surveys, vital events registrations, or census.

Then we go to the processes. Most data in the beginning are in raw form. Some data you can use immediately. If you want to know when your patient comes back, you can look for his next appointment in his record. But for other information, like coverage indicators, you need to aggregate that from various sources. If some facilities aren't reporting, it's incomplete. You need to do processing and analysis work. Only then will you come up with information that leads to action.

We then have to determine how the information flows through the system and to whom it flows and who should get it.

From data processing and analysis, you come to the use of information. This is the main issue. After 20 years of work, we have seen that even if you get relevant and reliable indicators, even if you do all the steps well, and you end up with quality data, people still don't use them. That was an eye opener for us and for people who have been working in those areas.

In RHINO we've looked at what a good routine information system should do. We said, first, it should produce quality data, which means that the data are relevant, reliable, complete, timely. Secondly, we said that the information should be continuously used for decision-making. If you get wonderful data but people put them on the shelf, then why spend all that money?

So, we came up with what we call the PRISM framework – Performance Routine Information System Management. This acknowledges that the processes are influenced by more than the technical requirements that have been our focus. For example, doctors who see 200 patients in the morning, so they can see their private patients in the afternoon, aren't likely to have time to use or even look at data.

People working in a ministry of health that automatically increases its budget by 5% each year are far less likely to use data then people working in a ministry that determines its budget on the basis of needs and activities. People working in settings in which allocation of funds is dependent on reaching certain goals may be put under pressure by supervisors to falsify information.

We're testing the PRISM framework in countries such as Uganda, Pakistan and Mexico. We're using PRISM to assess a system, to implement improvements of the system, and to evaluate it.

Clearly, you're doing important work. I'm glad that you are being honored this year (2006) with the Outstanding Service Award of the International Health Section of the American Public Health Association. Congratulations.

Thank you.

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