

PERSONAL EDUCATION PROGRAMME IN SWEDEN

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Special points of interest:

- This project was undertaken as part of the IFCC Fellowship/Professional Scientific Exchange Programme Scheme
- The aim was to improve the laboratory activities of the hospitals, especially important were methods for diagnostic, follow up therapy for the patients and research

Personal education programme in Sweden

Background

The Vietnam-Sweden General Hospital is a central regional hospital. It is under direction of the Ministry of Health of Viet nam. The hospital is located at Uong bi town-ship, Quang ninh province, in the North - East of the North of Viet nam. The population in the catchment area is about 1,5 million people.

The hospital was built with Swedish support 1980 and has been supported since by Sida -Swedish international development authority for nearly 20 years.

- Number of beds : 400.

Activities:

- Diagnosis and treatment of the patients.
- Primary Health Care for the people in the commune.
- Research.
- The UBGH is a Teaching Hospital and belongs to the Hanoi Medical Institute.
- Support the "lower" hospitals in the catchment area.

In the beginning when the Hospital started to operate, the Biochemistry Laboratory was equipped with a system of rather sophisticated equipment compared with other Hospitals in the North of Viet nam. All chemicals and reagents were bought from abroad. After nearly 20 years, most of the machines are outdated or not in good

working conditions, but we were replenished by some new equipment to replace the old ones and with the last budget from Sida we has just bought some new modern equipment. So, this Laboratory has provided good services for diagnosis and treatment for the patients and also for other activities.

I was sent to study in Sweden by scholarship from IFCC, with the aim to improve the laboratory activities of the hospitals, especially important were methods for diagnostic, follow up therapy for the patients and research. Additional with closely friendship with Clinical chemistry in Sweden via Piteå-Uong bi Association.

Activities during the stay in Sweden

Place

- In the North of Sweden:
- Hospitals:

University hospital of Umeå.
Boden hospital, Piteå hospital and Gällivare hospital.
Primary health care centers in Piteå. .

Duration

from April 4, 1999 to June 24,1999.

Aims for the visit

1. To study procedures and labora-

tory technique of biochemistry in the areas of: Lipoprotein, Protein Electrophoresis., Tumor markers., Tests for diabetes Mellitus and Myocardial infarction

2. To study and collect new information about screening programs for Cardio-Vascular Disease and Diabetes Mellitus.
3. To study the organisation of utilising laboratory resources within the health care system.

Activities

I have successfully completed my education in the following areas:

Biochemistry Laboratory technique:

Routine daily test

Training on Laboratory technique of Myocardial infarction makers : CK, CK-B, LD, AST.

Training tests, which are beside my intended programme, frequently used in Sweden but not in our hospital e. g CRP(C- reactive protein), Cerebro Spinal Fluid examinations with spectrophotometer.

HbA1c

Study on HbA1c with DCA 2000- dry-immuno- method.

Study the technique with the HPLC method.

Discussion about possible method to use in our laboratory

Protein electrophoresis:

With protein electrophoresis I was trained to improve the skill of interpretation for the plasma and urine, CSF protein electrophoresis pattern to help clinicians. Discussion about some essential tests needed to assist interpretation of such as: CRP, alpha 1- antitrypsin, haptoglobin, globulin.

About the technique

- Study of the latest techniques to

qualitatively determine protein and urine electrophoresis, determine specific protein by using immunofixation with specific antibodies (Sebia).

- How to concentrate urine sample for urine protein electrophoresis.
- Discussion on how to improve protein electrophoresis with an immunological method, how to set up Mancini method as below: how to immunised scheme to get anti serum for Mancini method in our laboratory.

Lipoprotein electrophoresis and lipids disorder

- Discussion about lipoprotein electrophoresis and tests for lipid disorder. The value of these tests to evaluate the disorder of lipids.
- Study about the technique of lipoprotein electrophoresis with agar gel

Tumor markers

- Discussion on the value of tumor markers in diagnosis and monitoring the effect of therapy. The ability to set up some tumor markers such as: AFP, HCG, CEA, with ELISA technique.
- Discussion about ability to use AFP to follow up the high risk group (HBSAg positive) and follow up therapy of liver cancer.
- Study about principal of some tumor markers and Hormone markers (TSH, free T4, Insulin) with Ax system from Abbott

On Screening and Follow up of high risk factors of Cardio- Vascular- Disease and Diabetes Mellitus

- Collecting documents on screening high risk factors on CVD and Diabetes Mellitus(DM).
- Discussion about Screening and follow up Diabetes Mellitus: which tests are needed for screening and follow for DM,

screening program, the tests and clinical symptom which are needed for differentiate DM type 1 and type 2.

Attending the day working of the MONICA team for MONICA- international - health - project, that happened to have a data collection.

(MONICA: Multinational **M**onitoring of Trends and Determinants in **C**ardiovascular Disease.)

- Observe the activities from the beginning to the end of examination for the participants with proposal that have reliable data for making correct diagnosis.
- Discussion about the laboratory tests, which are needed for the study.
- Training on measuring blood pressure(with HAWKSLEY RANDOM zErO), body height, body weight, waist circumference, hip circumference and collecting the blood sample for lab analysis.
- Discussion about making questionnaires for proper data collection.

Organization

- Observe and discuss about the activities as below:
- Collecting samples from "lower level hospitals", and primary health care centres
- Sending samples to other "upper level hospitals".
- Gather information about safe transport of laboratory samples for reliable analysis. Local organisation of sample handling between primary health care and the local hospital.
- Discussion about practical details when planning transportation routines of medical samples.

Comments

About activities of laboratories in Viet nam:

There are several differences between laboratories in hospitals in Sweden and our laboratories.

- In Sweden almost all equipment are automatic machines, while in Viet nam some Labs in provincial or central hospitals have such equipment, whereas other hospitals, especially district hospitals, are not equipped with automatic machines. In our province, the district hospitals can't even buy the reagents for biochemistry tests.
- In Sweden all activities in the Labs are computerised, ours are not
- Swedish labs in an geographical area unite together to utilise the personnel, their knowledge and skills and the equipment to do labs tests for their hospitals and for primary health care. But in Viet nam, we often use our equipment for only our own hospital, while other nearby hospitals, less equipped, might not benefit from the knowledge and equipment that is available. So now I think we use our equipment less effectively, and we should use our equipment more effectively. (please see in proposal 1).

Recommendations for setting up some new tests in biochemistry laboratory in Uong bi General Hospital.

In the Biochemistry laboratory, we have two medical Doctors work as biochemistry Doctor, 2 biochemistry Technicians, and 4 general Nurses who have worked as biochemistry technicians for some time. We could be able to set up and cover main routine ordinary chemical tests with new automatic machine and other equipment which we have got already.

Protein electrophoresis is useful for several cases, especially for detection of the M- component. Anyhow, the

equipment was installed nearly 20 years ago without proper manuals for reading and interpreting the results. We also have problem with power supply .I have presented this problem for Prof. Kjell Grankvist in Umeå. He promise that he will help to look for equipment and send to me soon. So with old equipment we can improve the analysis, using protein electrophoresis. But to assist for interpreting we should set up some special protein tests.

Lipoprotein and Hb electrophoresis are two lab tests is addressed to be a subject for further studies.

HbA1c is a useful test for following up diabetes mellitus. We can not do this test with our existing equipment. I also discussed with Swedish colleagues about the methods for this test. With HPLC method or other immuno-methods it is impossible now because we have limited economical resources. With DCA 2000- dry immuno-method, the technique is not complicated, it is convenience for us in our status now, but the reagent is rather expensive. It is recommended that Hb electrophoresis is used to determine HbA1c: so if it will be possible I will try to determine HbA1c using Hb electrophoresis. We will use the old equipment for electrophoresis, although I don't think it is the best solution.

Tumor markers: we have a system for ELISA technique. We can set up some necessary markers such as: AFP, PSA, CEA, beta- HCG and some hormones: TSH, free T4 with these equipment, but now the prize will be high.

Research

Diabetes mellitus and heart attacks are not as common in Viet nam yet, as these conditions are in developed countries, Stroke, on the other hand, is common. But the incidence of diabetes mellitus is increasing and patients often come to see the doctor with obvious

signs and symptoms, often very late. An early diagnosis will reduce the cost of treatment and will enhance the opportunities to control glucose metabolism, thus it will reduce the risk that every person with diabetes has, to develop complications. Unfortunately, we have a long way to go, as we do not yet have any relevant figures of the incidence and prevalence of diabetes in the Vietnamese community. More research is also needed on how to use blood glucose test in order to make early diagnosis.

Screening for diabetes appear to be an important area for research. I think that it is useful for health care, especially for primary health care in Vietnam.

Also with high risk factors on Cardio-Vascular- Disease.

The problems are: We have a very limited budget and limited experience in doing research in a scientific way.

Recommendation

Our existing budget should include scientific research. We need a supervisor to assist us in doing this research in a scientifically reliable way. Such supervision should have an aim to make Vietnamese professionals independent researchers in the future.

About language and friendship

English was used during the study visit and the education programme. I could manage to communicate with doctors and staff in Laboratories. And I also lived in Swedish families. Therefore I had a very good opportunity to improve professionally, and in using the English language as well as creating friendships.

Proposals

Improve activities of laboratories of the

hospitals

- Enhance the use of lab tests in the hospitals: including set up some new tests and discuss with other colleagues some necessary knowledge on using the laboratory tests.
- Enhance co-operation in the use of laboratory techniques and professional knowledge and skills with some large hospitals in our province in order to provide support on laboratory techniques to district hospitals and primary health care stations within Quang Ninh province.
- An organisational project is suggested as a pilot project, limited to co-operation in the field of laboratory technique in the health care system of the province. The aims with such a pilot project would be to create an organisation that supports an optimum use of existing equipment and professional knowledge available in the laboratories of large hospitals and make these facilities and skills available on all levels in the health care system.

Research

- Screening and follow up of diabetes mellitus.
- Screening and follow up the group of high risk factors on Cardio-Vascular-Disease. With purpose to carry out above proposals I would like to propose IFCC, Piteå- Uong bi - Association and Laboratories in Sweden to assist in applying for grants for budgeting further research, supervision inclusive.

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