

Report on the visit to Prof Elisabeth Nagy, Dept. of Clinical Microbiology, Faculty of Medicine, University of Szeged, Hungary

2-3 June 2008

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Introduction

To obtain a good idea of the organization and working methods of the laboratory in Szeged, a structured inquiry was made into the course of events there. For this purpose, use was made of the questionnaire entitled "Beroepsvisitatie Medische Microbiologie" (January 2008, version 6) [Medical Microbiology Professional Review]. This document consists of general and specific sections. Both are described below. For an abbreviated overview of the general section of the questionnaire, we refer to Appendix B.



Medical Microbiology Professional Review questionnaire: general questions

Management of health care processes

Part I: Professional consultation among associates

The medical microbiologists give consultation mostly by telephone during working hours, separate consultation exists for virus diseases. There is a medical microbiologist (also specialist in ID) who can be reached by the clinicians during the day. This consultant makes recommendations to the clinic. The power behind these recommendations is, however, frequently lacking. The pavilion structure of the hospital appears to have a restraining effect on multidisciplinary interaction. There is an antibiotic booklet on surgical prophylaxis. In addition, there are therapy guidelines for each specialist discipline. At set times, especially when there is little money, restrictions are placed on the prescription of certain antibiotics. In recent years, a start has been made on the development of guidelines (i.e. national guidelines regarding treatment policy). The diagnostic guidelines for medical microbiological laboratories do, in fact, have a strong foothold in Hungary.



A great deal of research is performed in the Department of Clinical Microbiology, especially involving the study of anaerobes, diagnostics and resistance. The resistance patterns of pseudomonas are also being investigated. Various biologists are engaged in doctoral research in addition to their regular work in the diagnostic field

There is an important discernible difference in organization with regard to hospital hygiene. Hospital hygiene is not the responsibility of the clinical microbiologist but is an independent organization led by the hygienist, a doctor with a background in epidemiology and public health. The Clinical Microbiologist advises the hygienist based on the results of cultures. The hygienist has 3-4 infection control nurses working under him.

Part II: Collaboration with staff as well as 1st- and 3rd-line medical assistants

As previously mentioned, university faculty and students conduct research on a daily basis. The laboratory technicians implement and process the material. The final diagnostics are performed by the university affiliated members (MDs and biologists). The microbiologists also instruct laboratory technicians, who are regularly tested by means of examinations.

A manual has been composed for the clinic with information about the sampling and submission of materials.

Now and again, the clinical microbiologists are involved in the professional training of general practitioners, and clinicians from other departments. Prof. Nagy conducts many courses for university medical students and for students in training to be medical microbiologists (residents).

Reports are made to the Local Health Authority, and the clinical microbiologists are increasingly involved in epidemic outbreaks. Traditionally, a strict distinction is made between public health laboratories and clinical microbiological laboratories. This is beginning to change. Greater collaboration and cross-pollination is occurring.

Part III: Multi-specialist collaboration

This section concerns issues involving multi-specialist collaboration and consulting. There are no structured discussions with other specialist disciplines. A strict hierarchy dominates all the various pavilions hosting different wards, and a strong dose of communicative diplomacy is required. The consultant's lack of power resurfaces at this point. The clinician does not have to follow up on recommendations and therefore does not always do so.

The use of antibiotics is kept up to date in DDDs for each department. There is also a record of the number of isolated microorganisms and resistance percentages. This department reports these figures to the clinical wards.



A start has been made on keeping written records of provided consultations. There is the wish for an electronic consultation record system in future, and preparations for this purpose have been set in motion.

Specific part of the Medical Microbiology Professional Review

General

The medical microbiology laboratory is accredited. The accreditation committee is a member of the European Accreditation Body and is based partly on the English accreditation system but mainly on ISO requirements for diagnostic laboratories. A quality manual containing the necessary SOPs on all elements is therefore available. This manual is regularly revised and has been implemented in the organization.

Laboratory diagnostics

The diagnostic package offered by the laboratory is very extensive with many operations and investigations. There is especially a lot of knowledge in the field of anaerobic diagnostics and molecular diagnostics in case of viral diseases. The laboratory functions as a reference laboratory for all of Hungary. The same is true for chlamydia diagnostics. The usual medical microbiological technologies are employed. The molecular diagnostic techniques are up to date. The hospital participates in quality peer validations.

Accommodation

The building housing the laboratory is rather dated. The laboratory takes up two floors, spread over many small rooms in which the various types of research are conducted. The building is located on the university grounds in the middle of many other pavilions housing various departments.



Equipment

Modern equipment of sufficient quality is available to enable the required research to be performed quickly and in a reliable manner (Vitek, MagNA Pure, GeneAmp, GeneExport, Vidas, Pipetting Robot, Cobas Taqman, etc.). This equipment is mostly obtained by means of leases from companies, since there is no scope for investment.

Substrates

The department possesses its own kitchen for manufacturing various media. Use is also made of commercial media and slides from such companies as bioMérieux, Oxoid and BD.

Procedures

The 24-hour duty roster of the laboratory is well organized. Requests are submitted using an effective electronic request system containing mandatory fields, such as clinical data, fever, antibiotic use, etc. The material arrives at the administration office by means of a written request. The written request is correlated the electronic request form and assigned a sample number.

Laboratory management

The laboratory staff consists of 13 university-affiliated members, led by Prof. Elisabeth Nagy. This group includes 6 MDs (5 Clinical microbiologists, 1 intern) and 7 researchers (PhDs). There are 17 laboratory technicians on staff, 3 FTEs for secretarial support, and 2 cleaning staff.



National diagnostic budget

All laboratory diagnostics are financed from a fixed national-indexed budget, of which 5–8% is earmarked for microbiology. Each research laboratory has qualification as a diagnostic point. This means that any increase in the national production regarding the number of research points will result in a decrease in the amount of Forints paid to each point. In this way, the diagnostic budget is kept within its limits. Insurers make direct payments for outpatients. Inpatients are given an all inclusive price per treatment: a type of DBC. Clinics may save on diagnostics and use the money somewhere else.

Departmental budget

The staff complement is fixed and is not involved in budget negotiations. Material costs (kits and reagents) are paid monthly from a fixed budget.

Investments

The scope of investments is poorly delineated, for example for new freezers (-80); negotiations are also held annually with regard to building maintenance for new window frames, for example. Due to insufficient scope of investment, most equipment is obtained on a lease basis.

Policy formation, guidelines and protocols

As mentioned earlier in this report, there is no uniform antibiotics booklet, except for the field of prophylaxis. Diagnostic guidelines do exist, and the practice of producing protocols has emerged in recent years.

Epidemiology and hospital hygiene

Hospital Hygiene is an independent organization. Cultured micro-organisms are recorded along with their resistance percentages.

Public health

The collaboration with public health laboratories is well established. Traditionally, they were always very separate entities. There is a desire to rearrange the diagnostic laboratory system for tuberculosis, which was traditionally separate from clinical microbiology and public health laboratories in Hungary



Information, Education, Training

The laboratory possesses educational accreditation for the discipline of medical microbiology. Laboratory technicians are trained on the job in the laboratory in addition to doing their work. Higher education for laboratory technicians is available in some university centres for 1-2 years in addition to the work. Classes and lectures are provided for colleagues, employees and students.

Scientific research

Research is conducted within the department. Regular publications appear in international peer-reviewed scientific journals.



Medical Microbiology Professional Review Questionnaire: General questions

For the benefit of the Professional Review by the Clinical
Microbiologist

2-3 June 2008

Szeged, Hungary

Part I

Management of the care process: professional consultation among associates

Questions concerning

- Transfer
- Rounds
- Uniformity of medical policy

Question		
1.	Is there structured consultation on patient transfers?	No, there is no formal structured consultation. There is informal discussion about patients.
2.	Is there good scheduling of evening, night and weekend shifts?	The evening, night and weekend shifts are well organized.
3.	Are there appropriate procedures for locums in case of absence due to an inability to work, holidays, conference attendance, refresher and additional training, scientific meetings or other reasons?	There is no extra staff. When someone is absent due to illness or for some other reason, they are replaced by others on duty. However, the person's specialist tasks can still remain undone.
4.	Are there defined task assignments for the Clinical Microbiologists?	Yes.
a	Are all Clinical microbiologists involved in the laboratory's diagnostic process?	Yes.
b	Are all Clinical microbiologists available for consultation (at all times or according to a schedule)?	Consultation is primarily provided by one clinical microbiologist, who is also a specialist in infectious diseases.
c	Does each Clinical Microbiologist participate in multi-disciplinary discussions?	There are only very few of such discussions and no definite agreements about them. The pavilion structure of the hospital does promote this.
d	Does each Clinical Microbiologist participate in infection control / hospital hygiene?	The Infection Control Committee is chaired by Prof. Nagy. Formal policy is being established on this subject. Hospital hygiene is not the responsibility of clinical microbiologists, but they advise the hygienist (see Part II, question 5).
e	Does each Clinical Microbiologist have organizational duties (laboratory management / hospital hygiene)?	Yes.
f	Does the department contribute to scientific research?	Yes, scientific research is conducted in several areas, especially in the study of anaerobes.

Question		
5.	Are there structured meetings on departmental policy, complete with agendas and the taking of minutes?	
6.	Are there structured meetings on developments in the discipline, complete with agendas and the taking of minutes?	
7.	Do you regularly formulate a Medical Policy Plan?	
a	Do you work with annual plans?	
8.	Do you draw up annual reports?	Yes.
9.	Are there written guidelines concerning clinical symptoms in microbiological research and testing?	In recent years, development of national guidelines has started. For instance, there are guidelines for prophylaxis, clostridium and ESBL. There is some question about the extent to which these guidelines are being observed. Various departments also have their own guidelines in circulation. Diagnostic guidelines do, in fact, have a strong foundation in Hungary. National guidelines for diagnoses in medical microbiological laboratories are established by an "advisory board" set up by the Hungarian Ministry of Public Health and consists of 14–16 members. Votes are held on guidelines. Hungary does not, however, impose any sanctions against failure to follow the guidelines.
12.	Do you check to see if all clinical microbiologists issue uniform advice concerning antibiotics?	There is no uniform antibiotics booklet, except for the field of prophylaxis.
13.	Has an audit been conducted within the past 2 years in which implementation of the antibiotics policy was at least partly evaluated? If so, by whom?	No
14.	Do you participate in trials (e.g. for the benefit of the pharmaceutical industry)?	Yes.
15.	Do you conduct scientific research in a more fundamental sense?	Yes.
16.	In the last three years, have you published in one or more international scientific journals?	Yes.
17.	Do you participate in national or international projects involving your discipline or area of concern?	Yes, for example Prof. Nagy is Professional Affairs Officer of Clinical Microbiology for ESCMID. There is also an international course on anaerobes.

Part II:**Management of the care process: collaboration with staff as well as 1st and 3rd line medical assistants**

Question		
1.	Are there regular and structured meetings with analysts on organizational issues, complete with agendas and the taking of minutes?	Yes.
2.	Are there regular professional work-related discussions with analysts?	Yes.
3.	Do you provide analysts with guidance during the generation of analytical results?	Yes.
4.	Do clinical microbiologists provide instruction to the medical microbiological analysts?	Yes.
5.	Describe the organizational structure of the Epidemiology and Hospital Hygiene departments?	Hospital hygiene is not the responsibility of clinical microbiologists, but they advise the hygienist. The hygienist is an MD with a background in epidemiology and public health. There are also 3–4 infection control nurses supervised by the hygienist. The hospital hygienist has the authority to close a department.
6.	Are there regular and structured meetings with the hospital hygienist, complete with agendas and the taking of minutes?	Informal talks
7.	Are you a member of the Infection Control Committee? If so, what is your role?	Yes, chairwoman Elisabeth Nagy.
8.	How is your relationship with the hospital hygienists?	Good
9.	Do you hold performance interviews with the hospital hygienists?	Hospital hygiene is not the responsibility of the physician-microbiologist.
10.	From where does the department receive work orders?	
11.	Does the department possess molecular biological techniques for the sake of epidemiological analysis?	Yes.
12.	Does the Infection Control Committee comply with the policy guidelines of the Work Group for Infection Control (Netherlands WIP)?	
13.	Is there regional co-operation in the area of hospital hygienic practices (e.g. protocol development)?	
14.	Are hospital infections and/or resistance issues addressed in the annual report?	Yes.
15.	Are you involved in the development of practices by hospital hygienists?	Clinical microbiologists advise the hospital hygienist.

Question		
16.	Do the hospital hygienists draw up an annual plan?	
17.	Do the hospital hygienists issue an annual report?	
18.	Are there written instructions (a manual or similar) for submitters with regard to the sampling and submission of materials, as well as the provision of patient data, clinical data and questions?	Yes, there is an extensive manual, also available on the intranet.
19	Are you involved in the additional training of general practitioners or nursing home doctors?	Not structurally. Sometimes, they are present at meetings or the department gives presentations to GPs.
20	Are regular meetings held with GPs and nursing home doctors and/or are there work agreements with them?	
21.	Do clinical microbiologists provide instruction for colleagues, medical assistants and other employees from outside the department?	Now and then. Classes are offered to medical students.
22.	Are regular meetings held with the local health authority and/or are there work agreements with it?	Reports are made to the local health authority, and clinical microbiologists are increasingly involved in epidemics. Changes are occurring in this respect. Until recently, these were actually concerns belonging to public health laboratories.
23.	Have you concluded an agreement with the local health authority?	
24	Do regular meetings occur with the national organization for public health/environmental protection or other specialist laboratories and/or are there work agreements with them?	
25.	Are there regular meetings between the department and the administration board?	
26.	Do you provide internships for trainee laboratory technicians?	
27.	Do you participate in national or international projects of work groups (e.g. EARSS)?	Yes.

Part III:

Management of the care process: multi-specialist collaboration

Questions concerning

- multi-specialist collaboration
- consulting

Question		
1.	Does each clinical microbiologist participate in structured ICU discussions?	There are no regular structured discussions with other specialist disciplines. A strict hierarchy exists in all the various pavilions. A strong dose of diplomacy is required in communications. Ad hoc meetings regularly take place, even about individual patients.
2.	Are there regular structured discussions with internists?	
3.	Are there regular structured discussions with surgeons?	
4.	Are there regular structured discussions with paediatricians?	
5.	Are there regular structured discussions with other specialists?	
6.	Is there interaction between the requester and the clinical microbiologist about the request policy and the interpretation of the analytical results?	Yes
7.	Do requesters / departments receive systematic information about request frequency and patterns?	
8.	Does Hospital Hygiene perform a systematic analysis on infection clusters?	Yes
a	Is a record kept of resistant micro-organisms?	Yes
b	Is Hospital Hygiene informed about resistant micro-organisms? If so, how?	Yes, in reports from clinical microbiologists
c	Is planned and co-ordinated action taken against these resistant micro-organisms?	Hygienist's task
9	Are the nature and extent of the resistance problem recorded and analysed?	Yes
10	Does hospital hygiene participate in co-ordinated national infection registration projects?	Yes

Question		
11.	Is there feedback to medical staff, management, employees concerning infection control data (increases, measures, figures)?	Formerly monthly reports to clinics, which were, however, not read. The reports now only go to problem departments. Clinicians are also invited to attend discussions. However, a great deal of diplomacy is also required in connection with the hierarchy.
12.	Has a written antibiotics policy been established under your leadership?	Prophylaxis yes, in addition to guidelines in each department
13.	Is this antibiotics policy up to date (not older than 2–3 years)?	Yes
14.	Is there active contact with medical staff regarding the formulation and implementation of the antibiotics policy?	Clinical microbiologists advise the hospital hygienist. There is no authority reinforcing this advice. Physicians do not have to follow up on recommendations and therefore do not always do so.
15.	Does each clinical microbiologist maintain a medical file on patients about whom he/she is consulted (consultation record)?	A start has been made on keeping a written record of consultations.
16.	Is this file readily accessible to everyone in the department?	No readily accessible structured system. The department is in the process of setting up an electronic registration system for consultations.

Indicators of the Szeged medical microbiology laboratory:

Total number of samples per year: 140-160,000
Of which concerning bacteriology: 80-90,000
Blood cultures: 7-8,000

Overview of laboratory staff in FTEs

Physicians	6	5 physician-biologists, 1 intern
University-affiliated staff members	13	(including 7 researchers [PhDs])
Analysts	17	
Quality assurance officer	1	
Administrative	3	
Cleaners	2	

Report of the visit to the combined Clinical Chemistry en Medical Microbiology laboratory in Hodmezovasarhely

3 June 2009

We visited the laboratory of Hodmezovasarhely on 3 June 2009. The reason for visiting this lab was mainly to observe the way in which Clinical Chemistry and Clinical Microbiology worked together, apart from the fact that this laboratory was far smaller than the University Hospital laboratory in Szeged.

It is a fairly small hospital of about 130 beds and, for the remainder, mainly outpatient medicine. Microbiological diagnostics for family physicians is almost nonexistent. Active, outreaching communication from Clinical Microbiology to the patient-treating colleagues is infrequent.

The laboratory covers of one floor of about 250 m², located in a separate building from the inpatient clinic. The lab is supervised by a clinical chemist working together with a clinical microbiologist (MD).

The laboratory started with dual sample collection and sample management. Clinical microbiology samples are cultured and handled in a room separate from the clinical chemistry rooms.

Clinical microbiology consists mainly of classical bacteriology. Little virology is performed, especially no viral culture. Faeces diagnostics is not performed in this laboratory, due to a national policy of a separate public health laboratory service for faecal pathogens. The same is true for TB culture.

Blood cultures consisted of a small BacTec of only 60 bottles for the entire hospital. It yielded them quite a promising number of, up to, eight positive blood cultures per day.

There were no molecular methods used for diagnostics in this lab.

Due to new health care policies all smaller hospitals are being closed. It is also a growing trend to outsource clinical diagnostics to either Clinical Microbiology or Clinical Chemistry.

It was interesting to see the intensive cooperation of the clinical chemist with the clinical microbiologist in such a small scale laboratory. Especially in a hospital of this size it is feasible for two such comparable specialties to share resources in order to save costs.