

Multi-professional Working Relationships: Working Together in Clinical Microbiology

G.J.H.M. Ruijs

The only constant (in Clinical
Microbiology) is

CHANGE!

Πάντα ρέενκα ούδ ν μένει - Ηράκλειτος

The Change Business



Major changes

Several major changes have been occurring in CM/ID:

- Newly Emerging Infectious Diseases (AIDS, SARS, West Nile virus, etc.)
- Increase of Resistant Microorganisms (MRSA, VREF, ESBL's)
- Development and Implementation of Diagnostic and Treatment Guidelines
- Introduction of Laboratory Accreditation and Quality Assurance Systems (ISO 15189)
- ICT, the Internet
- Emergence of Molecular Biology in CM/ID

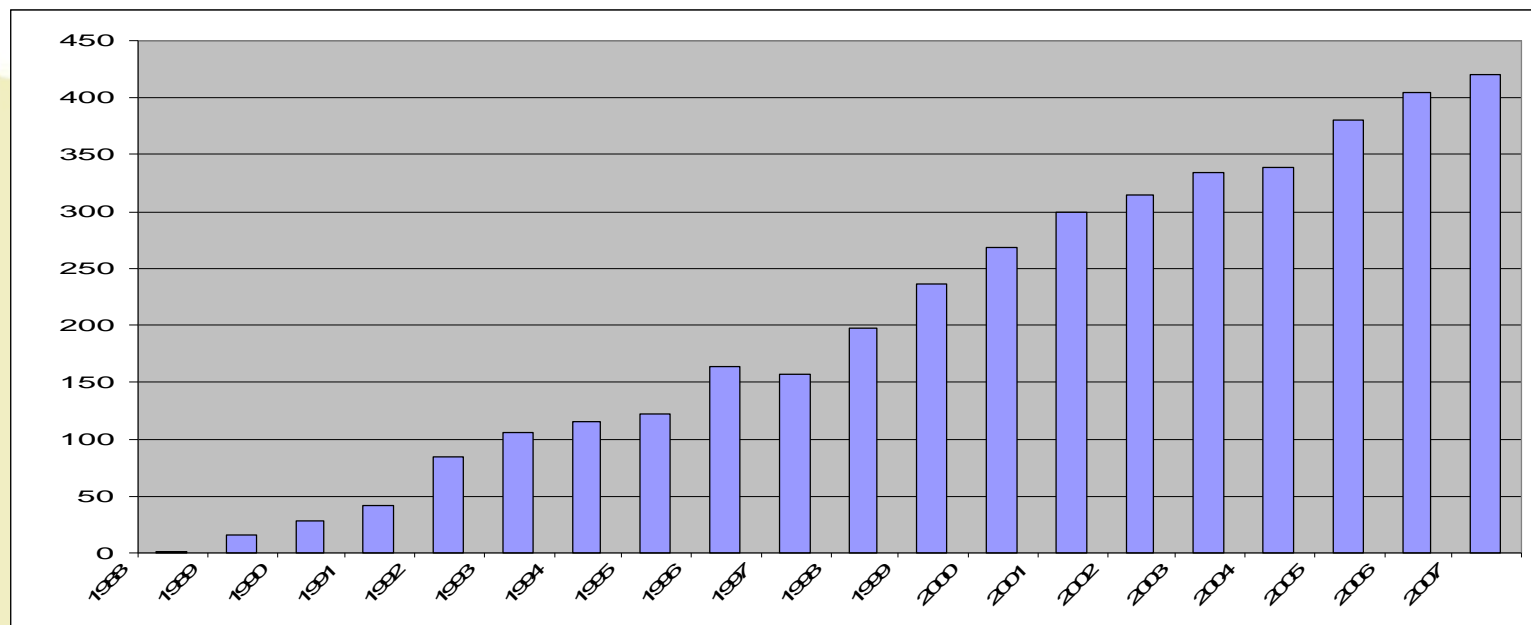
A major recent change:

Molecular Biology

- (One of) the most significant changes is the arrival of Molecular Biology
- Molecular Biology has and will furthermore deeply influence our understanding of the pathogenesis, diagnosis, treatment and epidemiology of pathogenic micro-organisms and of infectious diseases.

Molecular Biology increasingly important

The number of publications in Molecular Biology and Clinical Microbiology and Infectious Diseases (CM/ID) has increased impressively over the years.



PubMed (proxy): “PCR infectious diseases diagnosis”

Entry of Molecular Biology at two levels

- **Level I: Professionally**

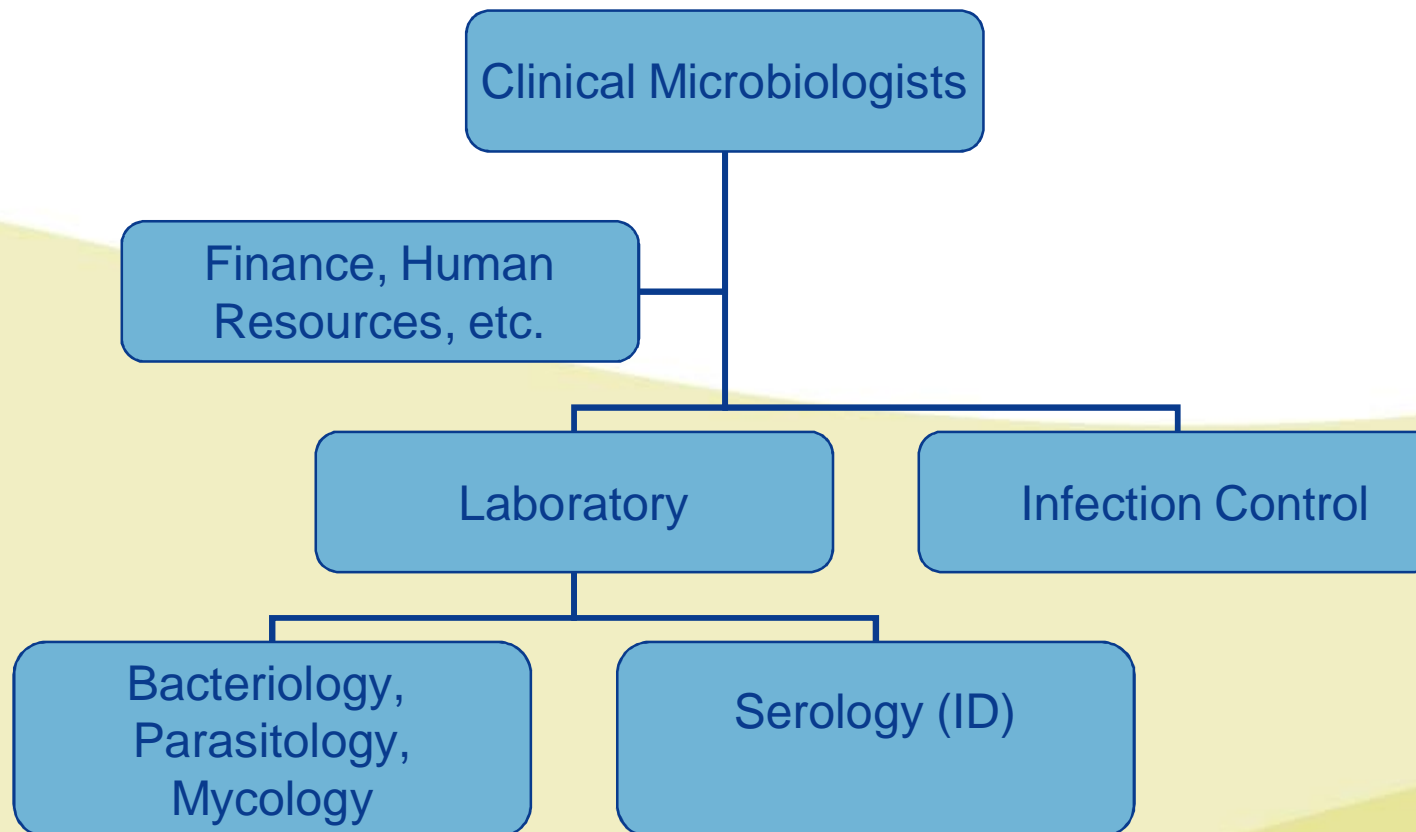
Laboratory for Medical Microbiology and Infectious Diseases

- **Level II: Society**

Dutch Society for Medical Microbiology

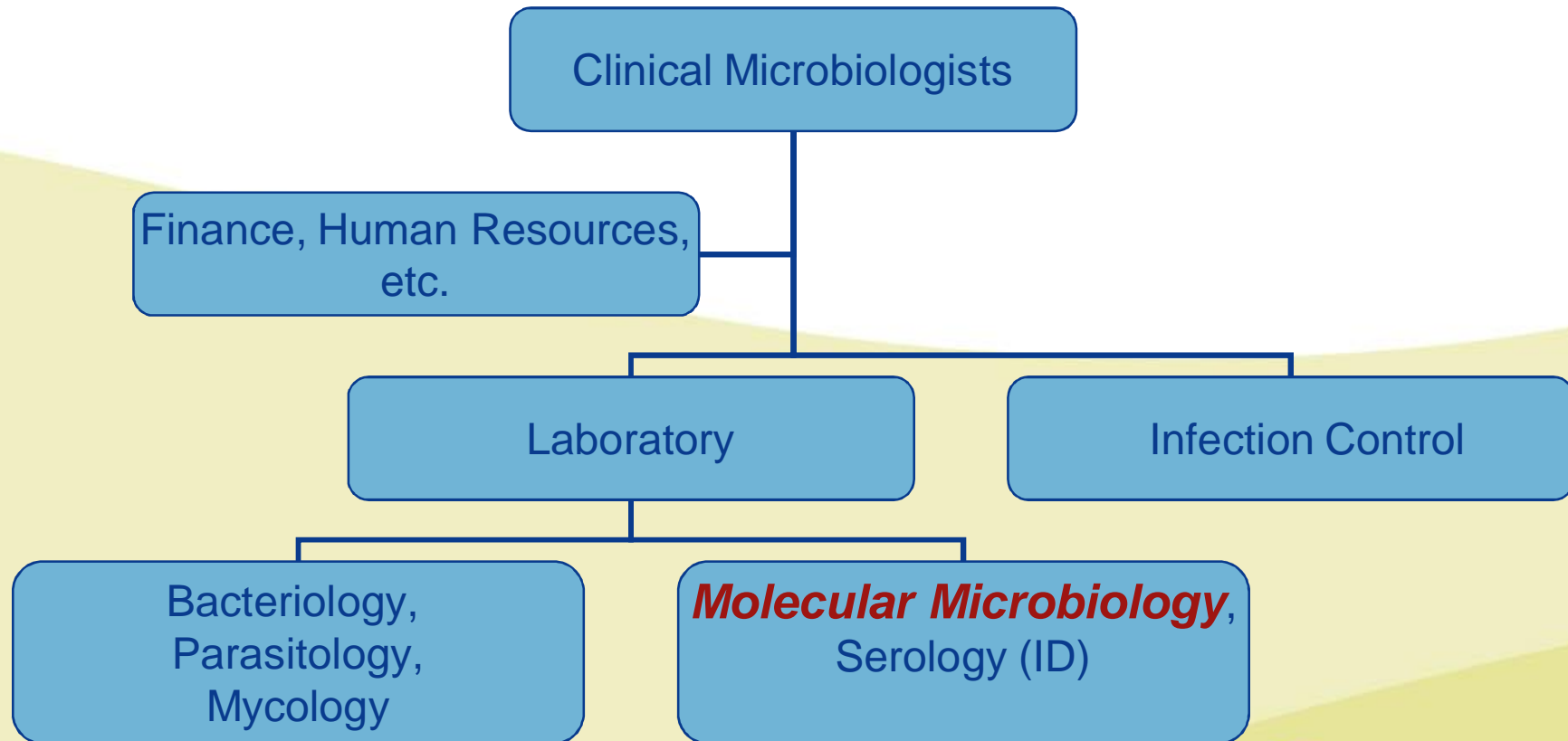
Laboratory for Medical Microbiology

From the old organogram...



Laboratory for Medical Microbiology

... to the new organogram



Dutch Society for Medical Microbiology (NVMM)



575 Members, of which:

- 210 Clinical Microbiologists (MDs)
- **40 *Molecular Microbiologists, active in the Clinical Microbiological Laboratory***
- 325 Academically qualified members of a wide range of occupations, ranging from CM-in-training to government, industry etc.

Enters the new kid on the block

- Molecular Biology has developed into a complex and sophisticated new science,
- This brought about the arrival of a novel, devoted scientist, the *Molecular Biologist*,
- Into the Clinical Microbiology Lab as well as into the Dutch Society for Medical Microbiology

Startup problems of the new kid (I)

The lack of recognition of the Molecular Biologists generated unwanted tensions in the Clinical Microbiology Labs and difficulties in working relationships between various professionals in CM, which translated into

- different positions in the lab organisation & unmotivated differences in salary
- feelings of insecurity
- emotionally uncomfortable

(Kids perspective)

Startup problems of the new kid (II)

- Level of the Molecular Biologist not transparent
(Institutions perspective)
- Significant number of members frustrated in their
professional ambitions
(NVMM perspective)

What was needed

- Recognition of the valuable contributions and the position (tasks, responsibilities, competencies) of the Molecular Biologist in Clinical Microbiology
- Formal recognition by their own society, the Dutch Society for Medical Microbiology

Working Party

A Working Party was formed, consisting of:

- Clinical Microbiologists (MDs)
- Molecular Biologists (PhDs)

to work out

- a Professional Identity,
- a Professional Profile and
- a matching Training Curriculum

Professional Profile of the Medical Molecular Microbiologist (MMM)

Primarily responsible for the Molecular Diagnostics Unit within the Laboratory for Clinical Microbiology:

- Performance of Molecular Diagnosis, Molecular Epidemiology, Research & Development, Education & Training
- Human Resources, Budgeting, Investment Policy, Laboratory Safety, etc.
(- no ID-consultation)
- Contributes to the overall performance of the CM lab

MMM Training Curriculum: 2 years

- Aimed at broadening the knowledge base in CM/ID
- 18 months: Molecular diagnosis and epidemiology
- 4 months: Conventional diagnosis of bacteriology, virology, parasitology, mycology
- 2 months: Hospital epidemiology & infection control, quality assurance, accreditation, laboratory management
- Teaching environment: University and Non-university

Final qualifications (I)

1. General knowledge of **basic Clinical Microbiology**, pathogenic micro-organisms, host immune system, antimicrobial agents
2. General knowledge of **Conventional Diagnostic Clinical Microbiology** in bacteriology, virology, etc. with respect to isolation, susceptibility testing, serological assays

Final qualifications (II)

3. Extensive knowledge and experience in **Molecular Microbiology** and its techniques, applications, test interpretations, equipment, new developments, trouble shooting
4. Extensive knowledge of **Molecular Epidemiology**, its techniques, equipment, data processing, software

Final qualifications (III)

5. General knowledge of the **principles of Infection Control & Epidemiology** (hospital & community), **Public Health**, most common **Hospital Infections** and current **Guidelines**
6. Knowledge of guidelines of **Laboratory Safety, Environmental Safety**, of guidelines of working with genetically modified microorganisms

Final qualifications (IV)

7. General knowledge and training in **Laboratory Management**, including strategic planning, organizational structure, principles of leadership, human resources management, financial management & budgeting, laboratory information systems
8. Knowledge of **Laboratory Quality Management, Quality Assurance Systems (ISO 15189), External Quality Assessment** (e.g. SKML, NEQAS)
9. Knowledge of **Teaching, Training and Education, Public Relations**

Prerequisites

Entry to the training curriculum is restricted to those with:

1. Previous education in molecular biology
2. PhD in molecular biology
3. Recognition as Medical Microbiological Researcher
(SMBWO)

Quality control

- Throughout the training curriculum the trainee is assessed systematically by the Tutor (molecular microbiologist) and his staff
- Tutorship (& the training lab) are also subject to specific requirements and assessed regularly
- The quality of the curriculum is guarded by a *Concilium* (college of all Tutors), which regularly inspects the training centres (7)

Don't forget!

- Retrograde recognition of the (PhD) molecular microbiologists who already have a substantial career in CM/ID

At present

- 7 MMM's are in training
- The *Concilium* has been installed
- The atmosphere around this problem / challenge has cleared considerably

Future developments ?

- Similar situation in other ESCMID countries?
- The MMM training scheme is available for interested national societies in Europe
- MMM training scheme recognized / authorized by ESCMID ?
- ESCMID Study Group for Molecular Diagnostics setting up Guidelines for tests and professional expertise

There is one constant factor in Clinical microbiology:

CHANGE!

So: adapt and grow!

