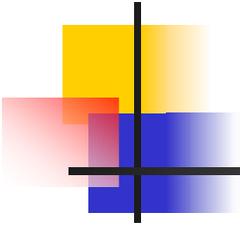


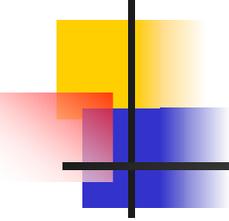
# ID training in Europe, 2004



Dr Mike McKendrick

[President European Board of Infectious Diseases,  
UEMS 1998-2003]

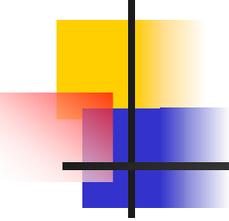
Consultant Physician  
Department of Infection and Tropical Medicine  
Royal Hallamshire Hospital  
Sheffield, UK



- UEMS core curriculum in infectious diseases

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- overview of national systems
- distribution of infection specialists in European countries
- Where from here?

The logo graphic consists of a vertical black line on the left, a horizontal black line at the bottom, and a yellow square in the top-left corner. Overlapping these are a red square and a blue square, both partially obscured by the other elements.

# UEMS

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- On 20 July 1958 - one year after the treaty of Rome was signed -, the representatives delegated by the professional organizations of medical specialists of the six member countries of the very new European Community (EEC), who met in Brussels, created the European Union of Medical Specialists (UEMS).

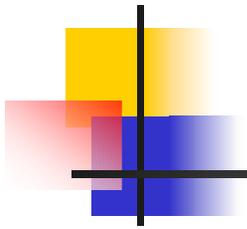
The statutory purpose of the UEMS (European Union of Medical Specialists) is the harmonization and improvement of the quality of medical specialist practice in the European Union (EU).

# UEMS

## Section of Infectious Diseases

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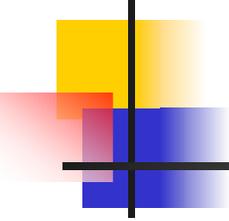
- No Section initially as ID not represented as separate discipline in sufficient countries

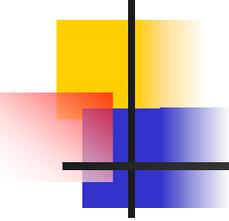


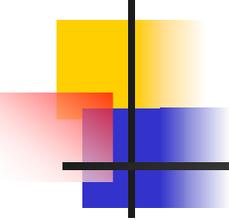
# UEMS – Section in Infectious Diseases

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- Section established 1997 (within GIM)
- Board established 1998
- 'Recommended' training programme agreed 1999 and put on web  
[<http://www.uems.be/infec-tr.htm> ]
- Log book available 1999
- Training programme reviewed and updated 2002
- Section website developed Feb 2004  
[www.uemsinfect.org](http://www.uemsinfect.org)

- 
- 
- UEMS training acknowledges:
    - Training is the responsibility of National authorities
    - 'Numbers of trainees' is the responsibility of National authorities
    - Selection and quality assurance of trainers and training centres is the responsibility of national authorities.
    - UEMS provides guidance on duration of training –
      - 2 years minimum 'common trunk' of general internal medicine
      - 4 years 'specialty training'

- 
- 
- UEMS training programme provides guidelines as to the:
    - Content of a 'model' curriculum
    - suitability of training institutions
    - numbers of trainers required
    - importance of quality assurance
    - need for log book etc.



# Training in infection

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- Infectious Diseases – adult/paediatic
- Microbiology/virology
- Infection control
- Public health
- [GU Medicine]

## INFECTIOUS DISEASE TRAINING

### 1. Community Acquired Infection and hospital acquired infection:

- At least 2 years
- Inpatient and outpatient care

### 2. HIV/AIDS

### 3. Cross specialty infections

- E.g. tuberculosis and hepatitis.

### 4. Compromised Patients:

- Eg neutropenic hosts, transplant patients, congenital immune deficiencies, diabetes mellitus, infected prosthetic devices.

### 5. Diseases of travel:

- Prevention; diagnosis and management

### 6. Intensive Care:

- Sepsis and Nosocomial infection

### 7. Medical Microbiology/Clinical Virology:

### 8. Control of Infection:

### 9. Epidemiology and Public Health Medicine

- Outbreak control; vaccination and immunisation

### 10. Research:

- Up to 12 months

### 11. Tropical Infectious Diseases

- For selected trainees

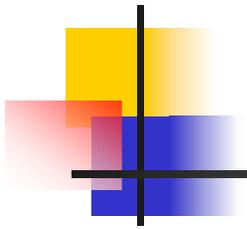
### 12. Sexually Transmitted Diseases

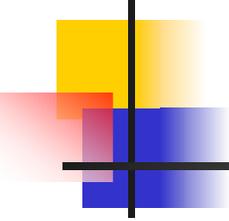
### 13. Antimicrobial Chemotherapy

- Optimum use of and resistance mechanisms, pharmacokinetics

### 14. Practical Skills to be acquired by completion of infectious diseases training:

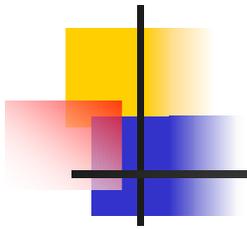
- List of expected competencies





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Common curriculum areas between specialities of Infectious diseases and microbiology are highlighted in red in following slides



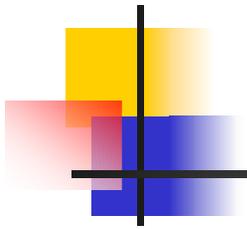
# UEMS training programme in ID

(<http://www.uems.be/infect.htm>)

- General Description of Higher Medical Training for Infectious Diseases:
  - The training programme will include agreed periods undertaken in the management of unselected community acquired infection(s) and the management of imported infection, both as in patient and out patient, and hospital acquired infection. Attachment to a **Medical Microbiology/Clinical Virology department is also necessary during the training to enable the trainee to acquire the ability to use the laboratory appropriately and to interpret data originating from the Clinical Microbiology laboratory.** Involvement in the management of compromised patients (for example HIV infection, transplant patients, patients with infected prostheses) and a **period of involvement in an Intensive Care Unit will be obligatory.** Research will be regarded as an integral component within the training programme. It is recognised that in some countries infectious diseases is practised with **clinical responsibility** for patients in a ward and in others it **may be more on a consultation basis** but the underlying principles included in this training programme should be relevant to both styles of training.

UEMS

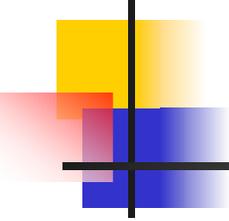
Leuven, Belgium March 2004



# UEMS training programme in ID

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- Community Acquired Infection and hospital acquired infection:
  - Involvement in management (clinical assessment, investigation, diagnosis, treatment and follow up) of patients suffering from unselected infections, preferably predominantly community acquired, and imported infection(s) forms a central theme within the training programme.
  - Consult experience should be obtained during this period e.g. in other hospital associated infections such as surgical infections, orthopaedic infection, and infection in immune compromised patients.
  - At least 2 years should usually be spent in an approved post which meet the above requirements of the curriculum. It must include both inpatient and out patient care.
- Medical Microbiology/Clinical Virology:
  - Experience in Medical Microbiology/Clinical Virology is regarded as essential. It is envisaged that attachment, collaborative research, and/or direct involvement in these disciplines will be necessary



# UEMS training programme in ID

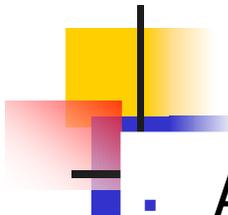
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- Control of Infection:

- Experience in the prevention and control of nosocomial infections or hospital outbreaks e.g. MRSA, SRSV is important.

- Tropical Infectious Diseases

- For those training in infectious diseases wishing to enhance their training in tropical infectious diseases the following would be valuable:
- A twelve month period in a recognised training centre in the tropics (see section A1).
- Attendance at a tropical medicine training course at one of the internationally approved centres such as those leading to the Diploma in Tropical Medicine and Hygiene or equivalent.
- Experience in a parasitological laboratory.



# UEMS training programme in ID

- Antimicrobial Chemotherapy

- A knowledge of the issues relating to optimal use of antimicrobial chemotherapy including an understanding of the pharmacokinetics and principles of prevention and management of antimicrobial resistance should be obtained during the training.

- Intensive Care:

- A period of attachment to an Intensive Care Unit to gain experience in the management of these patients is regarded as essential in the training programme. A period spent in this environment should provide additional experience in the prevention and treatment of nosocomial infection and sepsis.

- Compromised Patients:

- The training programme will include experience in the management of opportunistic infection(s) in immunocompromised patients such as neutropenic hosts, transplant patients, congenital immune deficiencies as well as those compromised by illness such as diabetes mellitus and infected prosthetic devices.

# UEMS training programme for medical biopathology – Microbiology

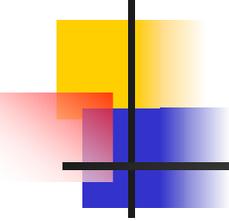
([http://158.126.240.21/uems/Train\\_Micro.html](http://158.126.240.21/uems/Train_Micro.html))

## GENERAL AIM

- produce trained medical microbiologists to provide specialist opinion in their clinical discipline and who should have developed the appropriate management skills to lead a department, if required. The trained medical microbiologist should be competent to:
  1. give advice as a physician on the diagnosis, treatment and prevention of microbial diseases.
  2. provide a scientific basis for laboratory diagnosis; to set protocols and to maintain standards within the laboratory.
  3. undertake the management responsibilities required from the director of a medical microbiology laboratory.
  4. take charge of infection control in hospitals
  5. propose hospital policies on the control of antibiotic usage and on the prevention of hospital acquired infection
  6. collaborate with national surveillance organisations and public health authorities and to provide services for these organisations
  7. participate in the training programs for medical microbiologists, infection control doctors and other experts in the field of microbial diseases.
  8. undertake research and development in the specialty of microbiological biopathology

UEMS

Leuven, Belgium March 2004



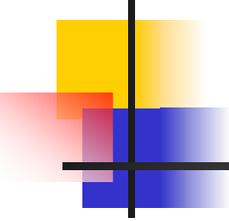
# UEMS training programme for medical biopathology – Microbiology

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## Clinical experience

At the end of formal training, the microbiologist should:

- a) have gained experience of liaison with clinical colleagues through regular ward visits and participation in collaborative clinical activities. In particular, a close relationship with high dependency units (eg ICU, NICU) and specialist units (eg haematology, paediatrics, transplantation *etc.*) where available;
- b) have gained experience of liaison with general practitioners;
- c) have participated in on-call rotas (including weekends) with consultant cover;
- d) have participated in postgraduate educational meetings such as Grand Rounds and lunchtime case presentations;
- e) be able to provide informed advice on vaccination and immunisation with all products normally available in the EU.

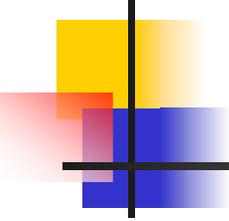


# UEMS training programme for medical biopathology – Microbiology

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## Infection control in hospital and community

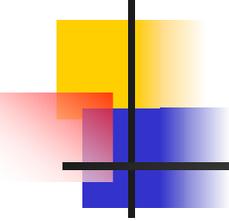
- At the end of formal training, the microbiologist should:
  - a) have had first hand experience of local infection control problems, including, outbreaks of infection and their management;
  - b) be familiar with the workings of infection control meetings including local and regional infection control committees;
  - c) be aware of those areas of hospital and community health that require infection control policies;
  - d) have worked closely with the infection control nurse both in day to day duties and in the education of those involved with infection control issues;



# UEMS training programme for medical biopathology – Microbiology

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- e) have participated in visits to clinical and non-clinical areas to advise on **infection control**. These should include kitchen inspections especially those conducted by environmental health officers. Relationships should be developed with key personnel in the central sterilisation unit, pharmacy and laundry;
- f) have an understanding of the principles of patient isolation and their application;
- g) be familiar with any national documents relevant to infection control. Also a knowledge of any existing working party recommendations (eg MRSA, Shigella, *Clostridium difficile*);
- h) gained some experience of public health microbiology with secondment if necessary to a Public Health Laboratory;
- i) have had some experience of communicable disease control in the community working Environmental Health Officers.
- j) become familiar with the physical and chemical agents used in hospital infection control.

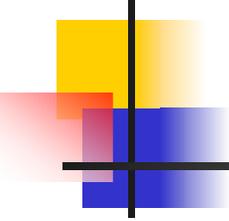


# UEMS training programme for medical biopathology – Microbiology

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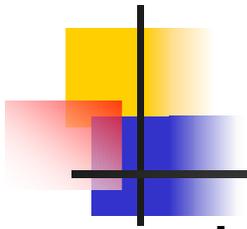
## Antimicrobial usage

- At the end of formal training, a microbiologist should have knowledge of:
  1. empiric, directed and prophylactic antimicrobial use.
  2. the means of prevention of emergence of resistance
  3. surveillance of antibiotic resistance

- 
- 
- Large areas of overlap between training in infectious diseases and microbiology.

# Microbiology or Infectious Diseases in UK

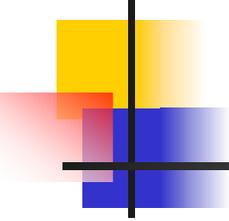
- Classically ID physicians run clinical ID Unit and provide some advisory role to rest of hospital
  - *Extent of referral service is ill defined and depends on training, experience and enthusiasm of individual.*
  - Referrals tend to be more related to clinical approach to problem.
- Classically microbiologists run laboratory and also provide advisory role to hospital
  - *Extent of referral service is ill defined and depends on training, experience and enthusiasm of individual.*
  - Most will do ITU round and provide phone advice re antibiotic use
  - Referrals tend to be more related to microbiological issues rather than clinical issues but this depends on expertise of individual.
  - Infection control usually within microbiology



# Closer working and training amongst the 'infection' disciplines?

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- UK experience
  - Joint ID/microbiology training programme established in 1999
  - 6 year training c50/50 ID/micro
    - Entry criteria – GIM and MRCP
    - Higher qualification - MRCPPath
  - Not possible to do GIM with the joint training
  - 20 joint trainees in UK currently
  - ? Role in District General Hospitals/teaching centres

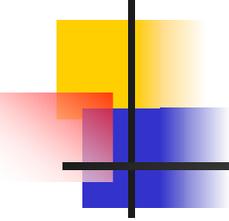
- 
- **Proposed structure** to meet the above ideals for an infection service are similar to those established to deliver cancer services i.e. **based on networking**
- 

- **Infection 'centres'**

- **University centre with teaching and research**
- **Specialist facilities – ID unit**
- **microbiology, virology, ID (adult and paediatric), public health, pharmacist, infection control nurses**

- **Infection 'units'**

- **Micro and micro/ID**
- **Paediatrician with responsibility for infection**
- **Public health**

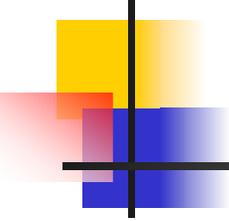


# Recognition of ID as speciality in Europe

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- Recognised by national government as an independent speciality in a some e.g.
  - Italy, Croatia, Slovenia, Greece, Turkey, Switzerland, Hungary, Poland, Portugal, Netherlands, Denmark, Sweden, Norway, UK, Ireland, Iceland, France (hospitals only)
- Not recognised in others e.g.
  - Belgium, Spain, Austria, Germany (except in 2/15 states), Luxembourg

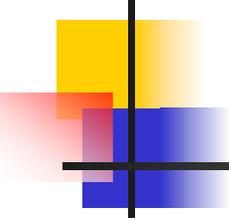
(source UEMS data 2001)



# Training in ID in Europe

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- Usually joint training with GIM
  - Some exceptions eg Italy, Portugal
- Joint training with microbiology
  - Eg Turkey, UK
- Written training programme
  - Most N European training programmes (2001 data) – other countries may but data not available
- Logbook
  - Some do not have log book



# Specialist numbers in UK and Sweden

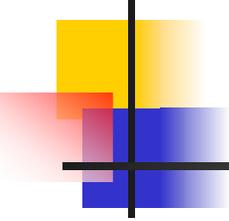
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Infectious Diseases: microbiology ratio of specialists

- UK 1:4
- Sweden 3:1
- ie variable probably depending on national development of infection services

(source - submissions from UEMS national representatives to Board in Infectious Diseases)

# Who is responsible for deciding numbers of specialists and numbers of trainees?

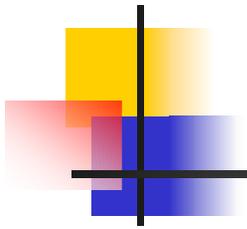


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## Recognition - National government

1. Specialists – local health care providers (UK)
2. Training numbers – usually National government

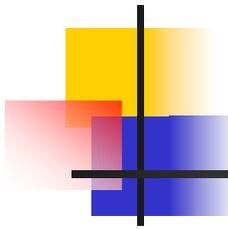
(UK according to formula which takes account of anticipated expansion, retirements and deaths – not responsive to increasing need eg re. SARS, smallpox etc)



# Which National Body in European countries is responsible for training, monitoring and quality assurance?

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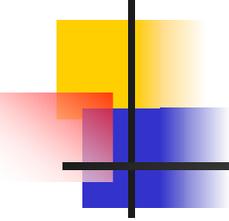
- Ministry/Board of Health with/without specialist society
- National medical societies with/without involvement of national specialist society
- Royal College of Physicians through Joint Committee for Higher Medical Training (but new government postgraduate training board established 2004 to supervise



# How many ID physicians are needed?

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- Adult/paediatric
- Role of specialist
  - Eg HIV, tuberculosis, hepatitis
- Numbers of adjacent microbiologists/virologists
- Anticipated work load – immunocompromised, hepatitis, TB, travel/asylum related illness etc

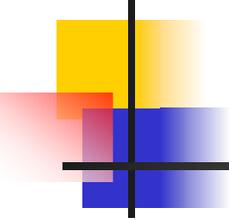


# Tropical disease specialists

(14/20 responded, 1999 UEMS survey)

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- 3 countries declared specialists
  - UK 19
  - Italy 32
  - Netherlands 7
  
- 11 countries had no tropical disease specialists



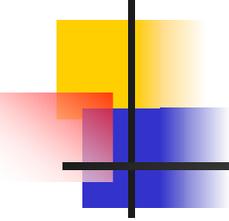
# Paediatric ID

(9/20 responded, 1999 UEMS survey)

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- 4 had paediatric ID speciality
  - UK, Eire, Finland, Netherlands
- 5 had no paediatric ID

(source UEMS survey data 2001)



# Numbers of Infectious Diseases specialists (including adult and paediatric) per million population [no data available from countries not shown in table]

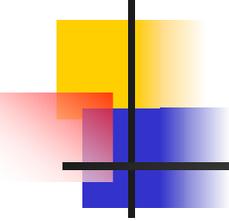
<b>Country</b>	<b>Pop (million) approx</b>	<b>ID Specialists per million population</b>
England, Wales and N Ireland	53.6	<5
Belgium	10	<5
Greece	10.3	<5
Germany	82	<5
Republic of Ireland	3.6	<5
Scotland	5.1	<5
Netherlands	15.8	5 to 10
Denmark	5.3	5 to 10
Portugal	10	5 to 10
Finland	5.2	10 to 20
Norway	4.5	10 to 20
Slovakia	5.4	10 to 20
Slovenia	2	10 to 20
Switzerland	7.3	10 to 20
Iceland	0.3	20 to 40
Croatia	4.8	20 to 40
Sweden	8.8	20 to 40
Turkey	68	20 to 40
Italy	58	40 to 60

# Numbers of infection specialists (including adult and paediatric infectious diseases and microbiology) per million population

<b>Country</b>	<b>Pop (million) approx</b>	<b>'Infection' specialists (ID + microbiology) per million population</b>
England, Wales and N Ireland	53.6	5 to 10
Greece	10.3	5 to 10
Republic of Ireland	3.6	5 to 10
Belgium	10	10 to 20
Germany	82	10 to 20
Netherlands	15.8	10 to 20
Scotland	5.1	10 to 20
Denmark	5.3	10 to 20
Portugal	10	10 to 20
Finland	5.2	20 to 40
Turkey	68	20 to 40
Slovakia	5.4	20 to 40
Iceland	0.3	40 to 60
Norway	4.5	40 to 60
Croatia	4.8	40 to 60
Sweden	8.8	40 to 60
Italy	58	40 to 60
Switzerland	7.3	No data
Slovenia	2	No data

UEMS

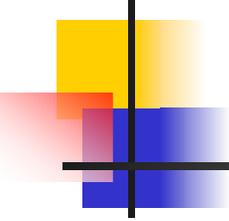
Leuven, Belgium March 2004



# Belgium data

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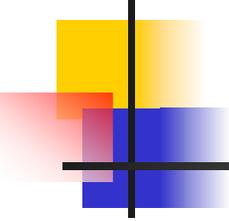
- Full time ID – about 30
- Perhaps others in pulmonology, renal med with infection interests – about 100
- Antibiotic management teams (trained for c 30 hours) in 36 hospitals – will probably increase
- Medical microbiology - ??100-200



# Why the differences?

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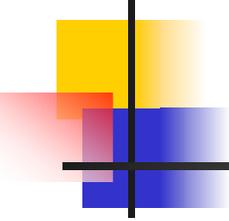
- Infection problems likely to be similar across different countries.
- Infection often cared for by generalist
- Infection may be cared for by specialist with interest e.g. pulmonologist, gynaecologist, haematologist BUT it is increasingly hard to remain a generalist



# What about the future – should 'infection' disciplines have government recognition in all countries?

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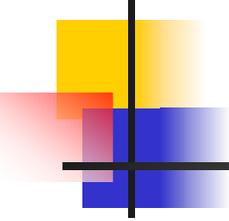
- Increasing levels of specialisation – it is harder to be an 'expert' generalist
- increasing numbers of compromised hosts
- Increasing complexity of infection
- Specialist areas such as HIV, TB, hepatitis
- Increasing travel related illness
- Increasing demand for travel advice
- Need expertise and structures to be able to plan for and respond to new threats such as SARS, smallpox, anthrax



# UK developments

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- Additional 12 posts in ID in last year
- Additional 17 posts in pipeline for next year
  - C 25% posts academic
  - Recognition of need for ID input into areas such as haematology, HIV/AIDS, hepatitis, tuberculosis, returning traveller
  - Recognition of the need for clinical ID expertise in District General Hospitals (small numbers of posts currently)
  - Recognition that microbiology training usually limits the level of involvement in clinical care to advisory (compared with combined training programme)
  - Discussion about infection centres with input from ID/microbiology/virology/public health



# Conclusions

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- UEMS core curriculum in infectious diseases
  - Large areas of overlap between infection disciplines - ?  
Room for closer collaboration
- overview of national systems
  - Control by national authorities, particularly government so essential for national recognition for progress to occur in the speciality
- distribution of infection specialists in European countries
  - Large variation in numbers in different countries
  - Large variation in ID/microbiology specialists in different countries