



The UK Clinical Mycology Network

Chris Kibbler

Professor of Medical Microbiology

Royal Free Hospital and University College London

Chair UKCMN Steering Committee

Reasons for Running a Second-rate Mycology Service



- Invasive fungal infections are of low incidence
- Invasive fungal infections are of low mortality
- Fungal infections progress slowly – can take your time with diagnostics
- “Anyone can do mycology”

Invasive aspergillosis in the UK - 2002



Patient group	No. patients	Incidence	Estimated No.
Allo BMTx	793	10%	79
Solid organ Tx	2953	19%	56
Leukaemia	16269	6%	976
Solid tumour	28955	2%	579
Advanced cancer	131678	1.5%*	1975
ICU	210130	0.2%	420
Burns	378	1.9%	7
Renal dialysis	24536	0.02%	5
HIV/AIDS	661	4%	26
Total			4123

Reasons for Running a Second-rate Mycology Service



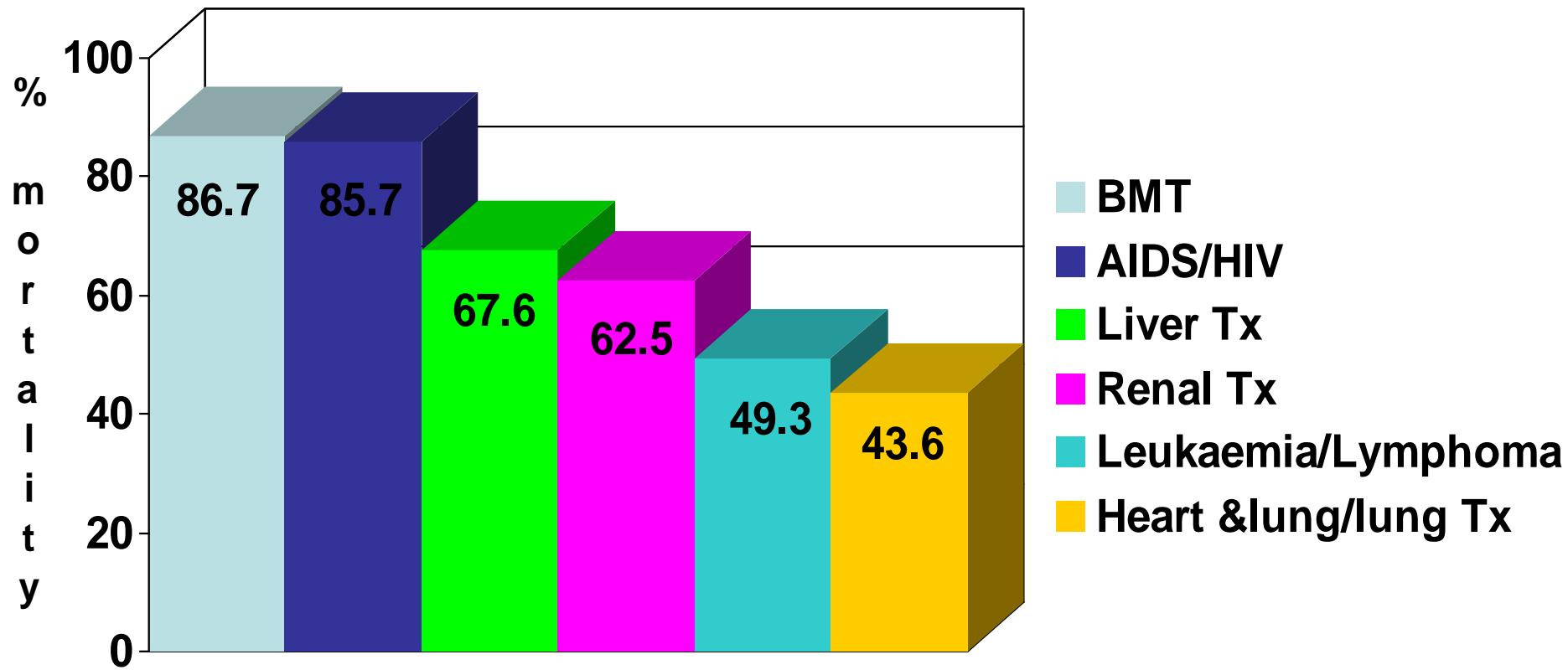
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30 Day Mortality

Parameter	No. of episodes	Percent mortality	P value ^a
Aetiological agent			
<i>C. albicans</i>	1,090	38.5	0.65
<i>C. glabrata</i>	269	45.0	0.02
<i>C. parapsilosis</i>	263	25.9	<0.001
<i>C. tropicalis</i>	140	41.4	0.42
Underlying condition			
Surgery	892	35.3	0.26
Intensive care	791	42.4	0.02
Solid tumor	442	49.2	<0.001
Haematological malignancy	247	44.9	0.03
HIV infection	61	23.4	0.03
Premature birth	123	26.8	0.02
Age group			
<1 y	142	26.0	0.006
1–19 y	148	22.3	<0.001
20–69 y	1,096	36.6	0.46
≥70 y	556	47.7	<0.001
Total	1,942	37.9	

^aCalculated against overall crude mortality

Invasive aspergillosis - mortality

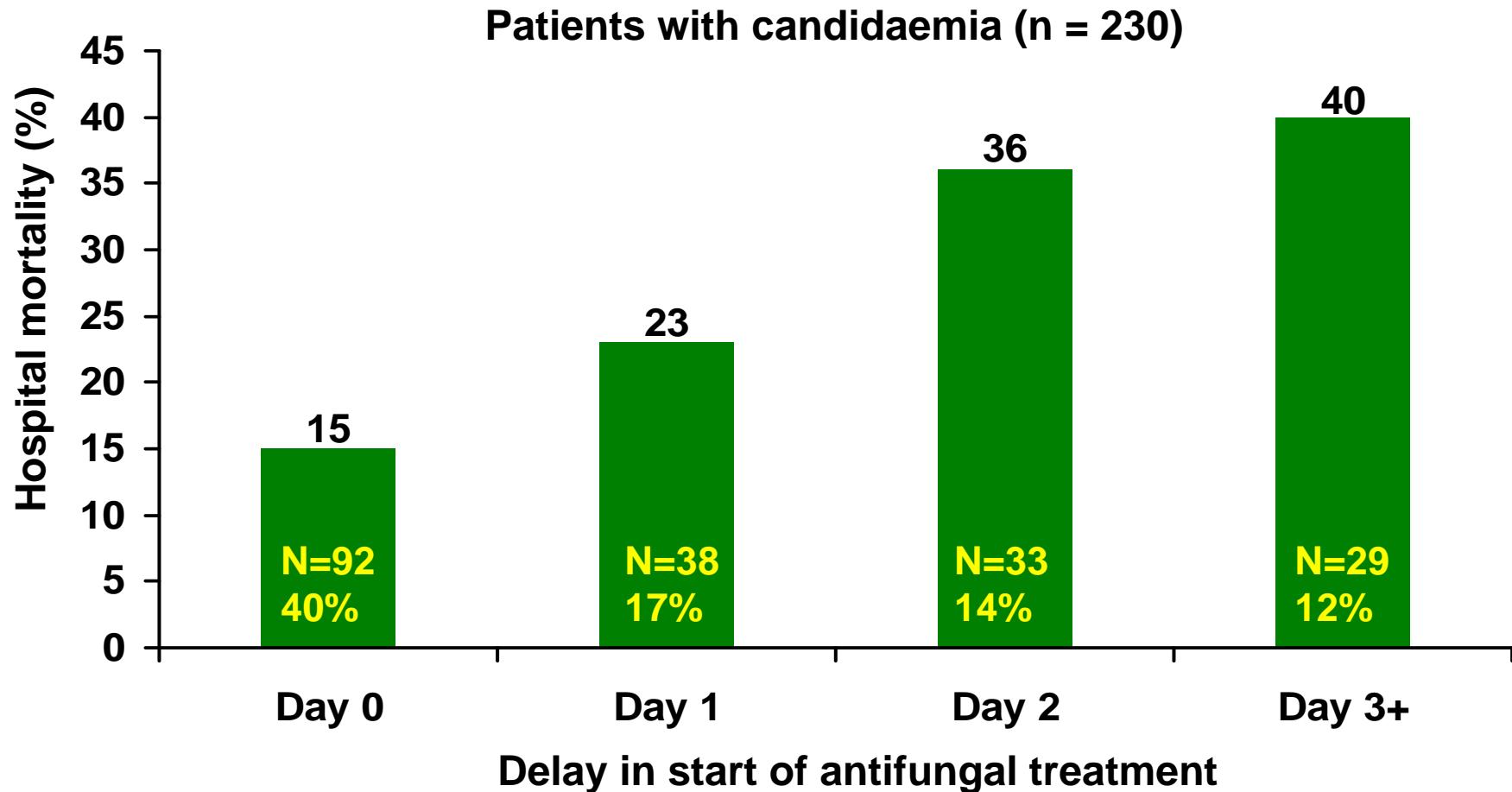


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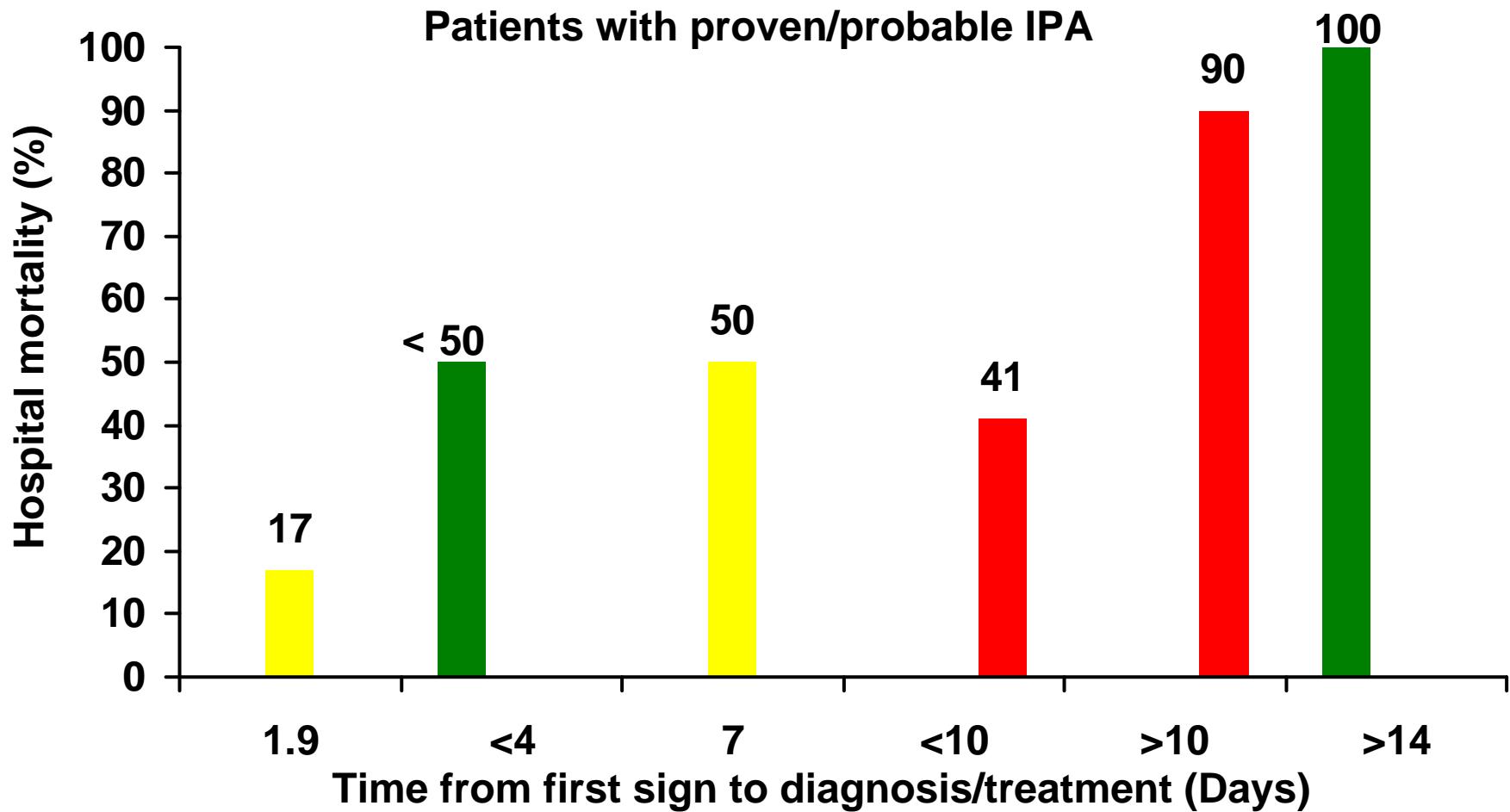


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Relationship between timing of initiation of antifungal treatment and hospital mortality



Relationship between timing of diagnosis and treatment and mortality - IPA



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Standards of care in diagnosis: the new Millennium



- Diagnosis of mycological infections lacked standardisation, with laboratories generally failing to follow simple diagnostic methods¹
- High-quality care requires a standardised approach to diagnosis and management²

¹Barnes RA, et al. *CDR Rev* 1996; **6**:R69

²Denning DW, Kibbler CC & Barnes RA. *Lancet Infect Dis* 2003; **3**:230–40

Mycology in UK



- only 3 specialised laboratories in England
(+ St John's dermatology unit)
- 1 in Scotland
- 1 in Wales
- Annual UK antifungal expenditure - £90 million in 2002

The BSMM Training and Manpower Working Party



- Dr Chris Kibbler (Chair)
- Dr Elizabeth Johnson
- Prof Glyn Evans
- Dr Gillian Shankland
- Dr Ruth Ashbee
- Dr Rosemary Barnes
- Prof Andy Hamilton
- Prof Colin Roberts
- Prof Steve Rousseau
- Dr Lynda Fenelon
- Dr Mary Moore



Objectives



- Encouragement of scientific staff into the specialty
- Achievement of collaborative effort between academic and service centres
- Establishment of regional level for training and service



Training



- National qualification
- Network of designated training centres
- Exchange of service and academic staff



BSMM/UCL MSc/Diploma in Medical Mycology



- Unique mycology qualification
- Designated standard of competence
- Part-time
- Distance learning based
- Practical emphasis



Targets



- Clinical Scientists
- Biomedical Scientists
- Trainee medical microbiologists
- Trainee infectious diseases physicians



Mycology Network Working Group (ACFI)



- Dr Chris Kibbler (Chair)
- Prof Frank Odds
- Prof Brian Duerden
- Dr Mary O'Mahoney
- Dr David Denning
- Dr Elizabeth Johnson
- Dr Rosemary Barnes
- Dr Peter Wilkinson
- Dr Barry Evans/Dr Theresa Lamagni
- Dr Ruth Ashbee
- Dr Joanna Edwards



Working Group Conclusions



- Each region should have access to a comprehensive fungal testing service
- A UK-wide HPA network should be set up to co-ordinate development of the service via training, SOPs and national surveillance
- The fungal surveillance system needs to be strengthened, and should include antifungal resistance
- 5 year plan

Recommended service levels : Local laboratory services (every microbiology laboratory)



- Primary fungal cultures from blood, deep and superficial infections
- Identification of *Candida* spp. to species level and *Aspergillus* and common dermatophytes to genus level
- Microscopy on respiratory and other fluids for fungal elements and *Pneumocystis jiroveci (carinii)*
- Local clinical advice on common fungal problems

Major microbiology laboratories in teaching centres or specialist cancer, AIDS or transplant hospitals)



- Services as for every local laboratory
- Cryptococcal antigen
- *Aspergillus* antigen, if a leukaemia centre

Regional laboratory services (undertaken by regional microbiology centres)



- Fungal serology
- Identification of unusual fungi (not category 3 pathogens)
- Molecular diagnosis
- Susceptibility testing
- Therapeutic drug monitoring (azoles and flucytosine esp)
- Specialised clinical advice (clinical mycologist)
- Training centre
- Research agenda

Reference laboratory service



- All the functions of a specialised laboratory PLUS
- Identification of rare fungi (incl. category 3 pathogens) by conventional means
- Identification of rare fungi by sequencing
- Molecular diagnosis
- Focus for national standards and training in laboratory mycology
- Collection of national datasets
- Maintenance of the National Collection of Pathogenic Fungi
- Research agenda

Management

- Professional vs. managed network
 - Implementation Group/Working Party
 - Steering Committee
 - Management Group

UK CMN Steering Committee



- To steer the UKCMN and ensure it meets its objectives
- To keep under review the current status of fungal infections and their management at a national level
- To advise the relevant HPA programme lead on appropriate research, development and surveillance work which might be undertaken

UK CMN Steering Committee



- Ex-officio members
 - Head of the MRL
 - HPA Centre for Infections (surveillance)
 - HPA Regional Microbiology Network
 - BSMM Executive
 - UKCMN Chair
- Ordinary Representatives
 - Clinicians
 - HCS in mycology
 - Representatives of the Network

UK Clinical Mycology Network - Mission Statement



“The UKCMN will seek to ensure the provision of the highest standard of clinical mycology services, including the maintenance of quality across related disciplines”

Outputs

- Improved clinical service
 - Diagnostics
 - Clinical advice
 - Use of antifungals
 - Hospital stay
- Delivery of surveillance
- (Continuity of service)
- (Succession planning)

After identification: candidaemia due to *C. glabrata* or *C. krusei*

Agent	General*	Comments for haematology patients
Fluconazole	C III	D III for <i>C. glabrata</i>
	E III	E III for <i>C. krusei</i>
Amphotericin B	B I†	C III† for <i>C. glabrata</i> and <i>C. krusei</i>
Lipid-complexed amphotericin B	B II	B II for <i>C. glabrata</i> and <i>C. krusei</i>
Caspofungin	B I	B II for <i>C. glabrata</i> and <i>C. krusei</i>
Voriconazole	C III	C III for <i>C. glabrata</i>
	D I	C III for <i>C. krusei</i>



1st European
Conference
on Infections
in Leukemia

*Overall population at risk for candidaemia not restricted to haematology or neutropenic patients; †D III if concomitant nephrotoxic drug and E III if renal impairment

Antifungal susceptibility testing (AFST)

AFST should be performed in hematological patients on isolates from blood or normally sterile sites, in order to:

- evaluate a possible cause of lack of clinical response or microbiologic eradication A II
- support a change in initial antifungal therapy B II
- support a switch from an IV antifungal to an oral azole A II



1st
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Infections in
Leukemia

Working Group: Raoul Herbrecht, Ursula Flückiger, Bertrand Gachot, Patricia Ribaud, Anne Thiebaut, Catherine Cordonnier

Achievements so far

- Review of National SOPs
- Input into Quickguide and Clinical Knowledge Summaries
- Development of reporting and susceptibility algorithms
- Development of website
- Recruitment of regional and specialist centres
- Engagement of RCPPath in potential “credentialing” of Medical Mycology
- Establishment of annual meeting

How can you join?

- Should be providing a mycology service
- Decide on level of provision (e.g. Local)
- Complete form and return to Chris Lucas at the HPA

What are the benefits?

- Affiliation and use of logo
- Input into national SOPs
- Adoption of consistent methodology and reporting protocols
- Shared epidemiological function
- Annual meeting to share good practice
- Training programmes
- Advising the HPA

Summary



- UKCMN established
- Training initiative started
- Training programmes being finalised
- Core network established

Health Protection Agency

Health Protection Agency

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Infectious Diseases

Infections A-Z list

HPA Centre for Infections

► Services and Activities

► Publications

CDR Weekly

► Laboratory Index

Key Functions

Infectious Diseases

Chemicals & Poisons

Radiation

Emergency Response

Business Activities

Local & Regional Services

UK Clinical Mycology Network steering group

Topics A-Z | Fungal infections | UKCMN

Reviewed on 2 May 2006

 The Advisory Committee on Fungal Infections' report on **Fungal Diseases in the UK** (679kB) outlines the proposal for the UK Clinical Mycology Network (UKCMN) with recommendations on how it would be set up and run. Progress of the UKCMN follows and updates will be posted regularly.

The UK Clinical Mycology Network (UKCMN) is in the process of formation, initially at four centres (see below). Representatives from the four initiating centres will steer the growth of the UKCMN and report on its progress to the HPA Advisory Committee on Fungal Infection.

Mission Statement

The UKCMN will seek to ensure the provision of the highest standard of clinical mycology services, including the maintenance of quality across related disciplines, throughout the UK.

Progress

The UKCMN is being initiated at centres concentrating on service and training. These are: the Bristol HPA Mycology Reference Laboratory and the three Regional Mycology Centres in Leeds, Manchester and London.

The Network will then be widened to include other centres around the UK.

The Network will seek Clinical Pathology Accreditation for a minimum centre standard judged on:

- the range of services offered
- the number of staff

Centres also need to show that they are carrying out academic research on fungal disease.

→ UKCMN Constitution and Terms of Reference  (213 kB)

→ UKCMN Mycology Service Levels  (210 kB)

UK Clinical Mycology Network
UK CMN
Providing quality in Medical Mycology