



LIFE Worldwide: Leading International Fungal Education



July 2018

News roundup



Burden of fungal disease data published in *Journal of Fungi* for 13 more countries

Gaps in basic data on disease prevalence hinders accurate burden estimates for most fungal diseases. In a series of papers edited by Professor Donald Cole (University of Toronto) and Professor Malcolm Richardson (Director of the Mycology Reference Centre Manchester), a further 13 countries have recently been added to this list: [Colombia](#), [Uruguay](#), [Argentina](#), [Burkina Faso](#), [Cameroon](#), [Mozambique](#), [Malawi](#), [Jordan](#), [Romania](#), [Serbia](#), [Norway](#), [Kazakhstan](#) and [Malaysia](#). The overall estimated population burden was as high as 7.5% in Malawi and Burkina Faso, 7.0% in Mozambique, 4.6% in Cameroon, down to 1.5–2.0% in most other countries.

Many of the problems affect rich and poor countries alike such as candidaemia, recurrent vulvovaginal candidiasis and fungal asthma; others are regionalized such as histoplasmosis and paracoccidioidomycosis in Latin America and *Rhinosporidium* infections in Serbia. A surprising number of cases of histoplasmosis were found in Cameroon and Mozambique, indicative of many missed diagnosis in routine care. The burden of cryptococcal meningitis and *Pneumocystis* pneumonia is also very high, and it is likely that invasive aspergillosis is under-diagnosed in AIDS, and generally in all countries.

- Read an editorial summary of this *Journal of Fungi* special edition by Richardson and Cole.
- For a full list of disease burden estimates by country please see the GAFFI website.

Outbreak of *Candida auris* spread via axillary thermometers

A 66-patient outbreak of the emerging pathogen *Candida auris* in a UK neurosciences ICU was traced back to multi-use equipment, in particular axillary thermometers, and was halted when the thermometers were removed.

For patients known to have a *C. auris* infection, the CDC recommend clinicians to use standard and contact precautions plus an EPA-registered disinfectant that is effective against *Clostridium* spores, in order to prevent transmission to other patients. Confirmed cases should be reported to candidaauris@cdc.gov

- Read the [press release and abstract presented at ECCMID 2018](#)

Rapid point of care tests for invasive aspergillosis launched by IMMY and ISCA

Two point-of-care ('bedside') tests for invasive aspergillosis have recently become available for the first time, which deliver results in around half an hour. Both tests measure the *Aspergillus* galactomannan antigen in either serum or BAL. Order the tests directly, or ask your local mycology reference laboratory or pathology department for more information about validation and verification.

Non-invasive LFAs are also on the horizon: [MycoMed Technologies](#) recently published a validation study of a POC urine dipstick, based on detection of small galactofuranose-containing antigens from *Aspergillus* conidia. It is hoped that the 510(k) premarket submission to the FDA will happen before the end of 2018.

- Order tests from [IMMY](#) or [OLM Diagnostics](#)
- [Read more at the LIFE website](#)

Who Essential Diagnostics List released, informed by GAFFI meeting in Kampala

Following the [SAGE-IVD](#) meeting in April 2018, the World Health Organisation (WHO) has issued its first Essential Diagnostics List. The list includes 58 general laboratory tests and 55 specific tests for key infections (e.g. HIV, TB, hepatitis, syphilis, human papilloma virus). For fungal infections, the key diagnostics listed are: cryptococcal antigen; fungal culture of blood and other samples; microscopy of wet preparations or stained samples; antimicrobial susceptibility testing. However, histopathology was not included.

The list was informed in part by the recommendations compiled by a group of 95 fungal infection experts at a [GAFFI meeting in Kampala](#) (Uganda), with a focus on low- and middle-income settings. These experts included experienced clinicians, senior laboratory staffs, and public health practitioners representing several Ministries of Health, national reference laboratories, research institutes and international health organizations including [WHO](#), [GAFFI](#), [UNITAID](#), [CDC](#) and [MSF](#).

- [Watch a video](#) of the press conference
- Read the WHO [executive summary of the Essential Diagnostics List](#)
- Read [GAFFI's report with a summary of the key tests considered at the Kampala meeting](#)



Many thanks to Juliet Mugerwa (acting Ugandan High Commissioner, centre) for hosting the GAFFI press conference for the release of a report on essential diagnostics in fungal infections.

Diagnostic tip: Atypical *Cryptococcus* histology



While *Cryptococcus* is well known for its distinctive appearance under a microscope, usually a round-to-oval yeast cell surrounded by a thick mucopolysaccharide capsule, it can sometimes be poorly-encapsulated or appear in unusual forms such as pseudohyphae, germ tubes or chains of cells.

Gazzoni and colleagues in Spain and Brazil found unusual forms in around 1/3 of cases where a diagnosis had been made histologically. It is important for lab staff to be aware of this because in some cases the patient may be CrAg-negative, and because presence/absence of pseudohyphae may be used to distinguish between *Cryptococcus* and *Candida*. In ambiguous cases, special stains such as mucicarmine may be used for clarification.

- Find out more: [Gazzoni et al \(2010\) Unusual morphologies of *Cryptococcus* spp. In tissue specimens](#)

Section in the spotlight: Sporotrichosis skin testing



Skin testing for endemic fungi such as *Histoplasma* or *Coccidioides* (Valley Fever) is useful in epidemiological studies because most patients who have been infected in the past will produce a positive result, even if the infection was asymptomatic or not correctly diagnosed at the time. However, this property makes it unsuitable for diagnosing current acute infections.

LIFE recently added a section about skin testing for sporotrichosis, which is the most common implantation mycosis in many tropical and subtropical regions. Intradermal injection of sporotrichin antigen provokes a hypersensitive-type reaction after 1-2 days, and if this is >8mm then the test is considered positive. Uptake of this test has been limited by the lack of a standardised commercial antigen preparation.

- [Go there now](#)
- Find out more: [Bonifaz et al \(2018\) Sporotrichin skin test for the diagnosis of sporotrichosis](#)

Courses



- MOMY (Molecular Mycology) Current approaches to fungal pathogenesis. 30 July-15 Aug. Woods Hole Marine Biology Laboratory, USA. [More information](#).
- Antifungal resistance in *Candida* and *Aspergillus*: from clinic to clinical laboratory (ESCMID postgraduate technical workshop). 19-21 Sep. Delhi, India. [Website](#).

Or take our Moodle-based online course on fungal histology and microscopy at [Microfungi.net](#)

Conferences



- First Balkan Conference of Medical Mycology and Mycotoxicology. 13-15 Sep. Timișoara, Romania. [Website](#)
- Mycocon 2018: Eastern Frontiers of Mycology. 21-23 Sep. New Delhi, India. [Brochure](#).
- IDWeek: combined annual meeting of IDSA, SHEA, HIVMA and PIDS. 3-7 Oct. San Francisco, USA. [Website](#).
- 17th APCCMI / 8th IICC. 30 Aug-2 Sep. Hong Kong. [Website](#).

Featured LIFE video

Pneumocystis prophylaxis

Our [YouTube channel](#) now has over 30 free video lectures, with accompanying slide sets, podcasts and suggested reading available to download from the [LIFE website](#).

Watch a lecture on prophylaxis against *Pneumocystis* pneumonia by Dr Immaculate Kariuki (Nairobi, Kenya). Covers primary and secondary prophylaxis; HIV and non-HIV patients; co-trimoxazole and alternatives.

[Watch it now](#)

Really important review

Non-culture diagnostics

Culture-based diagnostics often lack sensitivity and are slow to return results, which can delay life-saving treatment. Dr Otašević and colleagues review non-culture-based methods such as microscopy, immunoassays, MALDI-ToF and molecular assays including multiplex PCR. They also discuss future directions such as T2 magnetic resonance assays and mass spectrometry.

[Read it now](#)

New book

Mycology Images by Ton Rijs

Ton Rijs was an experienced technician who contributed to courses at the [Center of Expertise in Mycology](#) Radboudumc/CWZ, which hosts the National Mycology Reference Laboratory in Nijmegen (Netherlands). Aimed at technicians, it was especially designed to fit in a lab coat pocket.

Available for 25 euros from the [VIPcheck™](#) web shop.

[Buy it now](#)



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