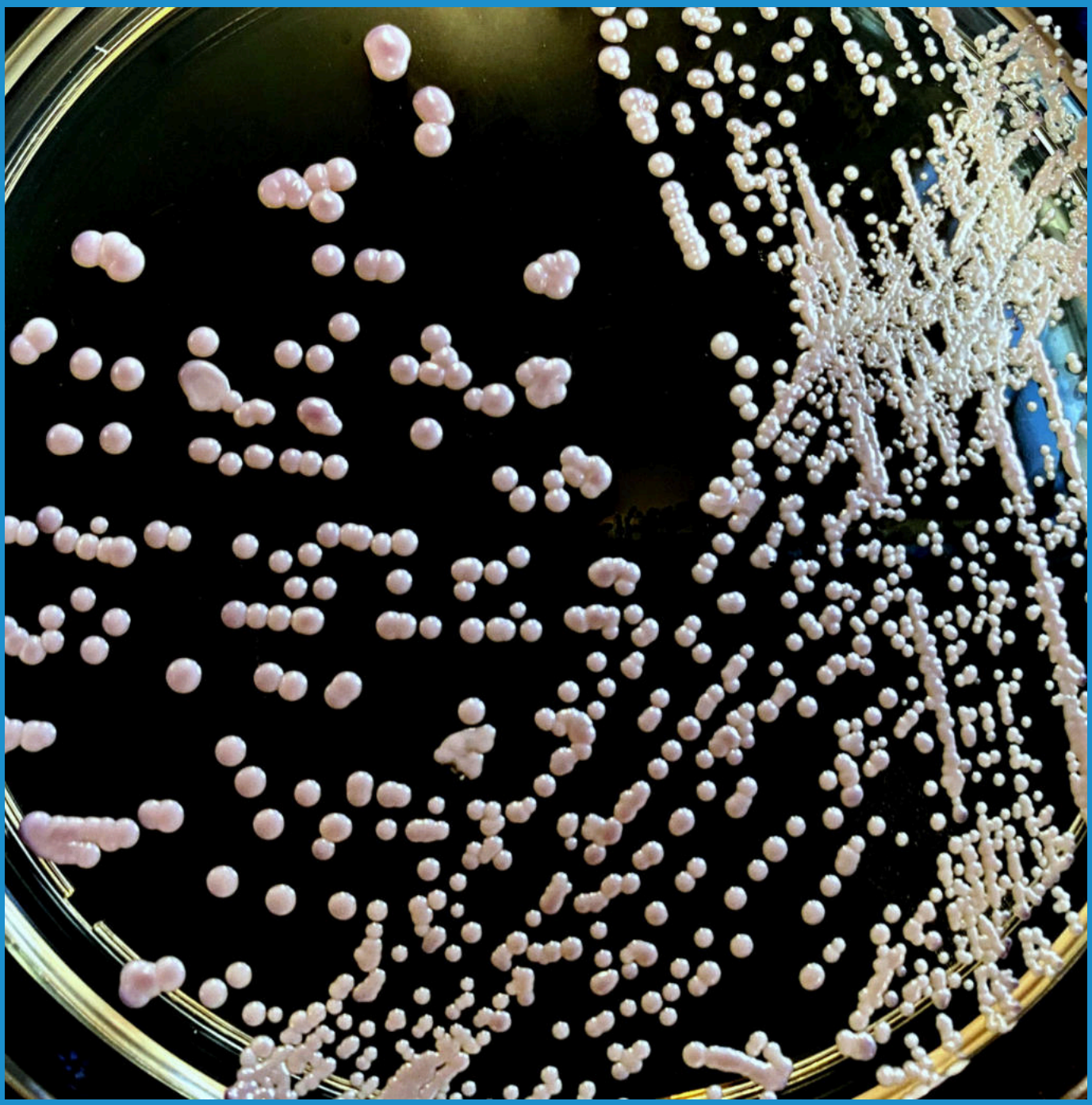
# PROGRESS REPORT 2021-2025

## ECMM EXCELLENCE CENTER COLOGNE



# PROGRESS REPORT 2021-2025



UNIKLINIK
KÖLN

**University Hospital Cologne**

**European Confederation of Medical Mycology**

**ECMM Excellence Center Cologne**
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# DEAR READER,

We are pleased to present the Progress Report 2021–2025 of the ECMM Diamond Excellence Center Cologne. This document reflects four years of dedicated work, international collaboration, and scientific innovation in the field of medical mycology. It highlights the growth of our team, the development of strategic programs, and our ongoing efforts to improve diagnostics, treatment, and education in fungal diseases.

Despite global challenges during this period, our Center has advanced significantly - thanks to the passion, commitment, and interdisciplinary cooperation of our team and partners worldwide. We have built on established programs like FungiScope®, launched new initiatives, and contributed to international guidelines and scoring tools that support clinicians and researchers globally.

Education and the promotion of the next generation of experts remain a key focus, alongside our growing engagement in public outreach and digital communication. Our contributions to global networks and strategic infrastructures further underline our shared vision: to foster excellence in medical mycology and patient care.

We extend our sincere gratitude to all collaborators, supporters, and colleagues whose work and trust have made this progress possible.

**Cologne, August 2025**
**On behalf of the ECMM Excellence Center Cologne,**

Univ.-Prof. Dr. Oliver A. Cornely
*Director, ECMM Excellence Center, Cologne*

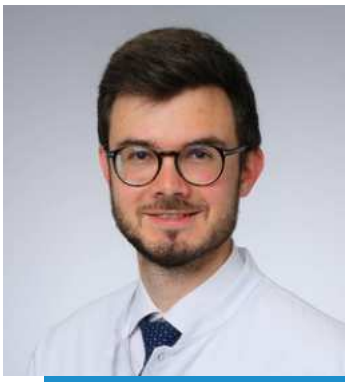
Univ.-Prof. Dr. Gereon R. Fink
*Dean, Faculty of Medicine, University of Cologne*

Univ.-Prof. Dr. Michael Hallek
*Director, Dept. I for Internal Medicine, University Hospital Cologne*

# EXECUTIVE BOARD

**UNIV.-PROF. DR. OLIVER A. CORNELY**

**DR. ROSANNE SPRUTE**



**DR. JANNIK STEMLER**

**PRIV.-DOZ. DR. PHILIPP KÖHLER**

Until June, the deputy leadership of the ECMM Excellence Center Cologne was held by Priv.-Doz. Dr. Philipp Köhler. As of then, Dr. Rosanne Sprute and Dr. Jannik Stemler have taken over this role.

# THE TEAM

The ECMM Excellence Center at the University Hospital Cologne brings together a multidisciplinary team of clinicians, researchers, and specialists dedicated to advancing the diagnosis, treatment, and understanding of fungal infections. Our team's combined expertise in clinical mycology, infectious diseases, microbiology, and translational research enables us to provide high-quality patient care while contributing to national and international research initiatives.

**NIJAT AZIMLI**

**NICO BEKAAN**

**DR. SARINA BUTZER**

**DR. ANNA DUDAKOVA**

**SUSANNE ENGELS**

**ANDRONIKI KOLOVOU**

**TATJANA LAMMERTZ**

**DR. JANINA LECKLER**

**PRIV.-DOZ. DR. SIMON LENNARTZ**

PRIV.-DOZ. DR.
KATRIN MEHLER

PROF. DR.
JACQUES F. MEIS

PRIV.-DOZ. DR.
SIBYLLE
MELLINGHOFF

JULIA
NACOV

PRIV.-DOZ. DR.
ANDRÉ
OBERTHÜR

PROF. DR.
ZOI D. PANA

DR. LAMAN
RAHIMLI

MELANIE
REINER

DR. ILANA
REINHOLD

DR. TAMARA
RÜGAMER

MARTIN
SAGER

PROF. DR.
ERTAN SAL

DR. JON SALMANTON-GARCÍA

PRIV.-DOZ. DR. BIRGID SCHÖMIG-MARKIEFKA

DANIELA SCHÖNHERR

DR. DANILA SEIDEL

NATALIA VASENDA

# DOCTORAL RESEARCHERS

In this section, we proudly present the doctoral researchers contributing to the excellence of our Center. Alongside their portrait photos, you will find the titles of their dissertation projects, highlighting the innovative work shaping the future of medical mycology.

**LUISE HÄNSEL**

Epidemiology of *Pneumocystis jirovecii* Pneumonia at University Hospital of Cologne

**SEBASTIAN HERRMANN**

Respiratory syncytial virus infection in patients with haematological diseases: a retrospective multicentre study

**THERESA KRAMER**

Mobile PCR-based surveillance of SARS-CoV-2 transmission in nursing homes during the COVID-19 pandemic

**NIKLAS KÜHNEL**

Resistance patterns of *Candida glabrata* and *Candida parapsilosis*

**THERESA MARKUS**

Increase vaccination coverage in patiens with haematological and oncological malignancies: Analysis of an intensified on-site vaccination campaign

BEN MECHTEL

Immune Phenotypes at treatment initiation in elderly/frail patients with CLL

JULE MÜLLER

CandEYE: non-mydriatic fundoscopy in candidemia

CHARLOTTE PATZNER

Prophylaxis of invasive mycoses in hematologic patients

FLORIAN PLEY

Monoclonal antibodies targeting the virulence factor Candidalysin as a novel immunotherapy for *Candida* infections

CHRISTINA TÖBBEN

Sequential serum galactomannan as outcome marker for invasive aspergillosis – an exploratory study from the FungiScope® registry

ALBERT WAHL

Deciphering adaptive immunity against fungal pathogens in a cohort of patients with invasive yeast disease

ZOÉ WESTHUES

Patient-derived monoclonal antibodies for the treatmnet of *Candida* infections

# INTERNATIONAL TEAM MEMBERS: ZOI D. PANA

## PROF. DR. ZOI D. PANA

As an External Scientific Collaborator of the ECMM Excellence Center in Cologne, I had the privilege of engaging in an exceptionally dynamic and innovative academic environment throughout the years 2021 to 2025. My tenure at the Center was marked by active participation, impactful collaborations, high-level networking, significant scientific output, and substantial contributions to the broader field of infectious diseases and clinical trials, with a particular focus on fungal diseases in paediatric populations.

The ECMM Center in Cologne has consistently proven to be a creative and pioneering hub that fosters interdisciplinary research, promotes scientific innovation, and actively supports the professional growth of European and international researchers.

Through my weekly participation in the Team and ECMM Jour Fixe meetings, I had the privilege of learning directly from leading experts in the field and engaging with complex, real-world clinical cases - many of which involved rare and challenging fungal infections. These sessions provided not only valuable exposure to cutting-edge clinical research, but also offered a unique opportunity to deepen my diagnostic reasoning, therapeutic decision-making, and interdisciplinary collaboration skills. This continuous, case-based learning environment significantly enhanced my clinical acumen and broadened my academic knowledge, particularly in managing invasive fungal diseases in high-risk populations (both in adults and paediatrics).

A central pillar of my collaboration with the ECMM Center has been our sustained and high-impact work in the field of invasive fungal diseases, with a particular focus on developing and implementing evidence-based global guidelines and antifungal stewardship tools. This collaboration began with a major initiative led by ECMM to update the global guidelines for *Candida* infections, a monumental undertaking involving international experts across multiple disciplines. I was honored to be appointed as coordinator of the pediatric working group, a role that provided me with a unique opportunity to lead and contribute to a comprehensive, globally harmonized guidance document. The process - spanning expert consensus building, evidence synthesis, and rigorous peer review - was not only intellectually enriching, but also a defining professional experience. The final outcome, published in The Lancet Infectious Diseases, marked a significant milestone for both the ECMM and the broader infectious diseases community.

# INTERNATIONAL TEAM MEMBERS: ZOI D. PANA

Our collaboration has since expanded to include the global *Aspergillus* Guidelines, where we continue to work closely with a multidisciplinary consortium of experts. This initiative benefits from the ECMM's exceptionally efficient, technology-driven coordination, which ensures that all aspects of the process - from data collection to manuscript development - are conducted with scientific rigor and organizational excellence.

In parallel, over the past several years, I have been actively involved in one of ECMM's most innovative and practical contributions to clinical care: the development and implementation of the EQUAL Score system and EQUAL Score Cards in pediatrics. These tools serve as quantitative antifungal stewardship instruments designed to assess and improve adherence to established clinical guidelines. I had the pleasure of co-coordinating the first paediatric adaptation of the EQUAL *Candida* Score, a pioneering effort that involved evaluating applicability in paediatric settings and tailoring recommendations accordingly. This work culminated in a peer-reviewed publication in Mycoses in 2025 and was received with strong interest by both the paediatric infectious diseases and stewardship communities. We are currently expanding this effort by developing pediatric-specific EQUAL Score systems for Mucormycosis and Aspergillosis, with the goal of delivering practical, user-friendly tools to improve clinical decision-making and outcomes in complex pediatric fungal infections. Moreover, my recent appointment as Deputy Editor of Mycoses has allowed me to further deepen my engagement with the academic community and contribute meaningfully to scientific communication and peer-review standards in the field.

# INTERNATIONAL TEAM MEMBERS: ZOI D. PANA

During 2025, our collaboration also led to the co-coordination of two major pediatric research initiatives: The EHA EU VRTI Registry - a comprehensive, multicenter study evaluating viral respiratory tract infections in pediatric leukemia and HCT recipients across 25 European centers. And The Fungiscope® Pediatric Isavuconazole Global Registry – a retrospective, multinational study exploring the use of isavuconazole in pediatric invasive mold infections. In terms of knowledge dissemination, I was privileged to co-coordinate the ESCMID-EFISG Pediatric Fungal Infections Webinar (March 2025) and present our collaborative research at high-level scientific meetings such as ESCMID 2025, ESPID 2025, ISHAM, DMykG, and TIMM 2025. These activities further strengthened our professional networks and facilitated dialogue with both scientific and policy-making communities. The year 2024–2025 alone resulted in over six high-impact publications, including: Global guideline for the diagnosis and management of candidiasis (Lancet Infect Dis, 2025), Paediatric ECMM *Candida* Score (Mycoses, 2025), Approaches to Invasive Fungal Diseases in Paediatric Cancer Centres in D-A-CH (Mycoses, 2025), Elevating Fungal Care in Brazil (Microbiology Spectrum, 2025). Forthcoming publications will address critical topics such as pediatric Mucormycosis, *Naegleria* infections, and clinical practices in LMIC pediatric oncology settings - underscoring the ECMM Center's global reach and policy-shaping impact.

In summary, my collaborative work with the ECMM Excellence Center in Cologne from 2021 to 2025 has been of unparalleled academic, clinical, and personal value. The Center has demonstrated unwavering excellence in its scientific endeavors and stands as a beacon of mentorship, inclusion, and translational impact in infectious diseases and clinical research. I look forward to continuing and expanding this collaboration and strongly endorse the ECMM Excellence Center in Cologne as a premier institution for advanced research, policy innovation, and global health improvement.

*Prof. Zoi Dorothea Pana, MD, MSc, PhD, FECMM*
*External Scientific Collaborator at the ECMM Excellence Center Cologne (2021–2025)*

# INTERNATIONAL TEAM MEMBERS: JACQUES F. MEIS

## PROF. DR. JACQUES F. MEIS

Since 2023 JFM has done research on genetic characterization, outbreak analysis, epidemiology and antifungal susceptibility testing of several rare and common *Candida* species. Collaboration was initiated between the ECMM centers Cologne and Nijmegen and with several other institutes in Europe, Brazil, Africa and Asia. Results obtained in the previous 3 years concerned the novel use of Fourier-Transform (FT) infrared spectroscopy typing to track clonal spread of *Candida auris* in Brazil (doi: 10.1111/myc.70085) and *C. parapsilosis* in Italy (doi: 10.1128/spectrum.02388-23).
This simple and easy typing method can be used alongside the standard microsatellite typing (STR) (doi: 10.1007/s11046-024-00877-8) and whole genome sequencing (WGS) (doi: 10.1111/myc.13655) approaches.

Pathogen and outbreak analysis using the former technique have been done with common species *C. parapsilosis* in Turkey, Brazil and India (doi: 10.1111/myc.70000), with *C. tropicalis* in Netherlands, Brazil, Italy, India and Egypt (doi: 10.1128/spectrum.04618-22, doi: 10.3201/eid3107.241918, doi: 10.3390/jof9020207, doi: 10.1016/j.jhin.2024.10.003, doi: 10.1128/spectrum.04618-22 ,doi: 10.1016/j.jgar.2023.06.012), and with *C. auris* in Kuwait, India, Brazil, Greece, Iran and Singapore (doi: 10.1111/myc.13752, doi: 10.2807/1560-7917.ES.2024.29.45.2400128, doi: 10.1016/S2666-5247(24)00101-0, doi: 10.1093/femsyr/foae008). STR and WGS have also been successfully used for less common *Candida* species like *C. krusei* in India and Turkey (doi: 10.1093/mmy/myae005), C. vulturna in Brazil (doi: 10.1016/j.jinf.2024.106349, doi: 10.1111/myc.70070) and *C. pelliculosa* in Venezuela and India (doi: 10.3390/microorganisms11061525).

The ECMM center in Cologne has also been involved with work on filamentous fungi such as *Aspergillus sydowii* (doi: 10.1007/s11046-024-00869-8), *Sporothrix brasilienesis* and *Trichophyton indotinea* (doi: 10.1007/s11046-024-00920-8, doi: 10.1093/mmy/myaf020 ). The latter pathogen was studied in collaborative research with another ECMM center in India.
*Sporothrix brasiliensis* is an emerging fungal threat in Latin America. This dimorphic fungus is the causative agent of human and animal sporotrichosis, and its first appearance was retrospectively identified in 1998 in Rio de Janeiro and since then a staggering increase in the number of feline and human cases in various Brazilian States has been observed.

# INTERNATIONAL TEAM MEMBERS: JACQUES F. MEIS

The ECMM centers in Cologne and Nijmegen have been researching this emerging fungus (doi: 10.1016/j.jinf.2023.02.034, doi: 10.1111/myc.13584, doi: 10.3390/jof9030354, doi: 10.1016/j.mmcr.2024.100633. Sporadic research has been done with other ECMM centers in Essen (doi: 10.1128/spectrum.05130-22), Innsbruck (doi: 10.3390/jof10070481) and Leuven (doi: 10.1038/s41564-024-01854-z).

Other worldwide collaborations were with Iran (doi: 10.1007/s11046-025-00963-5, doi: 10.3390/jof10080518, doi:10.3390/jof9111101, doi: 10.1093/mmy/myad069), Oman (doi: 10.1038/s41564-024-01854-z, doi: 10.1007/s11046-023-00820-3), Kuwait (doi: 10.3390/jof11020083, doi: 10.1128/spectrum.01474-23 ) and Egypt (doi: 10.3390/pathogens14050486). Brazil lags behind in diagnosis and treatment of fungal infections (doi: 10.1128/spectrum.02112-24 ), therefore efforts are in progress, including obtaining a Brazil–wide ethical approval for Fungiscope® case enrolments from Brazil (doi: 10.1155/crdi/4079965).

Finally (multicentre) evaluation of antifungal susceptibility testing of *C. auris* has been performed with colleagues from Greece, Kuwait, Denmark, Spain and Turkey (doi: 10.1128/jcm.00399-25, doi: 10.1128/jcm.01528-23, doi: 10.1128/spectrum.04431-22, doi: 10.3390/antibiotics13090840).

*Prof. Jacques F. Meis*
*External Scientific Collaborator at the ECMM Excellence Center Cologne (2021–2025)*

# ESCMID OBSERVERSHIP



## PROF. DR. FRANCELISE BRIDI CAVASSIN


This brief report details the activities, learning outcomes, and results of my two-week observership supported by ESCMID at the University of Cologne. The primary focus was immersion in clinical research and collaboration with Prof. Dr. Oliver Cornely's team, a recognized authority in clinical mycology and invasive fungal infections.

Main benefits of the observership:

- Immersion in routine clinical actions within a university hospital setting.
- Observation of infectious disease research methodologies, emphasis on mycology.
- Comprehensive understanding of clinical research protocols implemented by Prof. Cornely's group.
- Establishment of future collaborative scientific studies.

Schedule prepared by the ECC (Annex 1):

Each morning began with in-person or virtual meetings to discuss clinical cases, procedural workflows, and ongoing research projects. I participated in a full day laboratory session at TRIO, observing sampling techniques and the processing of biological specimens related to Candida albicans. I also accompanied infectious disease outpatient clinics, joined rounds in the infectious disease and intensive care units, and attended hematology/oncology ward visits to examine interactions between chemotherapy regimens and infectious complications.

Throughout the program, I took part in mycology committee meetings (ECMM-EC Mycosis Board) and engaged with Prof. Cornely's clinical research team, including study nurses, coordinators, and project manager. FungiScope team did a great presentation about its decades of work. The last day meeting at the Center for Clinical Studies (ZKS) further deepened my grasp of clinical trial design, data management, and regulatory compliance.

What I learned and how my practice will change because of this visit:

Every stage of the observership reinforced the necessity of meticulously defined protocols, from patient screening through study endpoints. I have now more skills in designing prospective cohorts, standardizing data-collection instruments, and applying inclusion/exclusion criteria. Observing multidisciplinary rounds underscored the importance of clear communication channels among physicians, nurses, students and research staff to optimize antimicrobial stewardship and mitigate resistance development.

# ESCMID OBSERVERSHIP

In my ongoing clinical trial with Dr. Flávio de Queiroz-Telles in Curitiba, Brazil, I will better implement data quality and follow-up. As a professor at medical school faculty, I will incorporate real-world case studies and structured discussions on trial eligibility criteria into my lectures, aligning my classes with international standards. Finally, I plan to maintain an active collaboration with Prof. Cornely's group, increasing the possibilities of new studies on fungal diseases and clinical mycology.

This observership has unequivocally laid the groundwork for advancing both research excellence and educational quality for myself and my work environment, fostering an evidence-based, collaborative model that will benefit students, investigators, and patients alike.

*July 17th. 2025*
*Francelise Bridi Cavassin, PhD., MSc., Pharma.*
*ESCMID full membership n° 491868*

# LEADERSHIP UPDATE: CHANGE IN DEPUTY DIRECTOR

## DR. ROSANNE SPRUTE

With the appointment of Dr. Rosanne Sprute and Dr. Jannik Stemler as Deputy Directors of the ECMM Excellence Center for Invasive Fungal Infections, the University Hospital Cologne is purposefully investing in the next generation of clinical and academic leadership. Both will support Prof. Dr. Oliver A. Cornely in leading the Center from June 2025 on.

Dr. Rosanne Sprute focuses her research on opportunistic fungal infections and chronic aspergillosis. She is an investigator in clinical trials, chair of the Young ECMM, and actively contributes to the development of national and international treatment guidelines.

Dr. Jannik Stemler is a Fellow of the European Confederation of Medical Mycology and serves as a clinical investigator in studies on novel antifungals, vaccines, and infections in hemato-oncological patients. Both are engaged in translational research and are part of the FungiScope® team.

## DR. JANNIK STEMLER

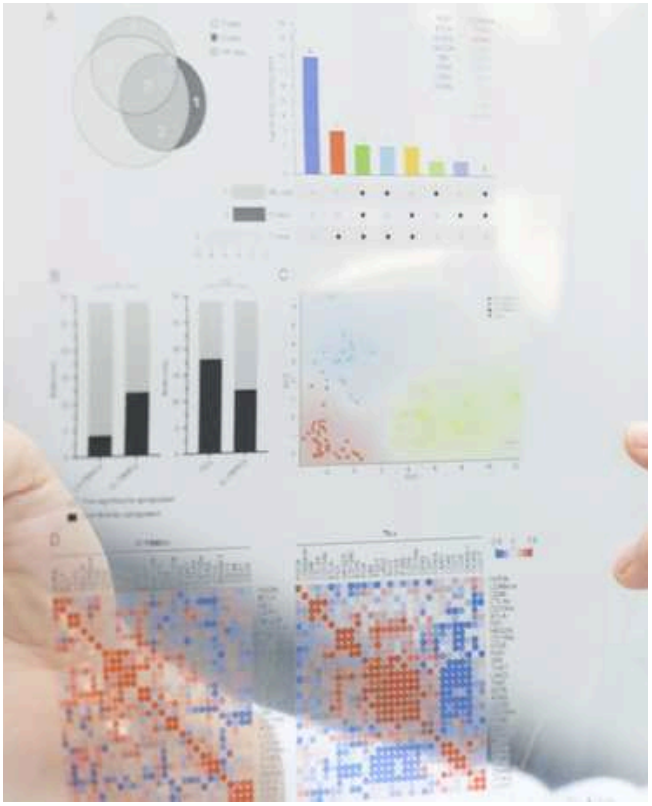
# ORGANIZATION AND STRATEGIC FOCUS

The ECMM Excellence Center for Invasive Fungal Infections at the University Hospital of Cologne is a multidisciplinary institution dedicated to the diagnosis, treatment, and study of invasive fungal diseases. These infections are medical emergencies – often rare, difficult to diagnose, and requiring complex, long-term therapy. The Center brings together a network of experts across several clinical and scientific specialties, including infectious diseases, microbiology, radiology, pathology, intensive care, thoracic surgery, pulmonology, and pharmacology. This structure ensures rapid, integrated responses and evidence-based care for affected patients.

Founded in October 2017 and certified as the first ECMM Excellence Center in continental Europe, the Center follows a mission that spans patient care, research, international collaboration, and education. Leadership is provided by Prof. Dr. Oliver A. Cornely, supported since 2025 by Deputy Directors Dr. Rosanne Sprute and Dr. Jannik Stemler. Together, they coordinate a growing team committed to advancing mycology through clinical excellence and scientific innovation.

The Center is embedded within the Department of Internal Medicine I and maintains close partnerships with institutes and departments across the University Hospital of Cologne. All activities are guided by the principle that timely diagnosis, expert collaboration, responsiveness and structured care pathways are critical to improving outcomes in this highly specialized field.

# STRATEGIC OBJECTIVES



- **Clinical Care:** Provide structured, multidisciplinary care for patients with invasive fungal infections through coordinated inpatient treatment, access to cutting-edge diagnostics, and design and participation in clinical trials involving novel antifungal agents.

- **Consultation Services:** As the coordinating site of the ECMM Expert Consult Service, the Center supports physicians worldwide in diagnostics, treatment planning, and second opinions (see map on subsequent pages). Weekly interdisciplinary case conferences ensure timely and collaborative decision-making for national and international consults.

- **Research:** Conduct pioneering research into fungal epidemiology, diagnostics, therapeutics, and immune responses. The Centre is actively involved in international networks and projects, including FungiScope®, FungiResearch, and ECMM-wide initiatives across 96 countries.

- **Education:** Develop and disseminate diagnostic and therapeutic tools, clinical guidelines, and training programs. Educational materials – including guides and apps in multiple languages and webinars – promote awareness and knowledge-sharing in medical mycology.

# AWARDS AND LEADERSHIP POSITIONS

**Prof. Dr. Oliver A. Cornely**, Director of the ECMM Excellence Center at the University Hospital Cologne, has received multiple prestigious honors in recognition of his outstanding contributions to the field of medical mycology and infectious diseases.
Since 2021, he has regularly been named a **Highly Cited Researcher** by Web of Science since 2018, placing him among the top 1% of researchers worldwide in terms of scientific influence and citation impact.
In 2022, Prof. Cornely was awarded the **Johann-Lucas-Schönlein Plaquette**, one of the highest distinctions of the German-speaking Mycological Society (DMYKG). This lifetime achievement award is presented by the Mycological Society for exceptional contributions to clinical fungal research and care.
Most recently, in 2025, Prof. Cornely was elected **President of the International Society for Human and Animal Mycology (ISHAM)**. This appointment reflects his global leadership in advancing the science and clinical management of fungal infections and underscores the international recognition of the ECMM Excellence Center's role in shaping the future of medical mycology.

Other members of the ECMM Excellence Center have also received multiple prestigious honors in recent years, reflecting their leading roles in clinical research, translational science, and international collaboration.
**Dr. Jon Salmanton-García** was elected **Fellow of the ECMM Academy** in 2023, in recognition of his expertise in epidemiological surveillance and registry-based research. In 2025, he received the **Young Researcher Award** from the **Spanish Medical Mycology Group (GEMICOMED)** of the Spanish Society for Infectious Diseases and Clinical Microbiology (SEIMC) for his key contributions to the international Candida III study. He also serves as Chair of the **ESCMID Fungal Infection Study Group (EFISG).** Dr. Jon Salmanton-García received a **publication award** from the **DMykG** in 2024.
**Dr. Jannik Stemler** was named **Fellow of the ECMM Academy** in early 2024. His work focuses on antifungal trials and translational research in hematologic patients, and his leadership in international studies has strengthened the Center's position as a hub for clinical innovation in mycology.
**Dr. Danila Seidel** was appointed **Fellow of the ECMM Academy** in 2021. As a core member of the FungiScope® registry team, her work has advanced understanding of rare fungal infections and their global distribution, contributing significantly to medical mycology and infectious disease epidemiology. In 2021, she also received the Young Investigator Award by the DMykG.
In 2021, **Prof. Dr. Jacques F. Meis** was awarded the **Prof. Edouard Drouhet Medal** from ECMM during the TIMM meeting in Aberdeen.

These honors emphasize the Center's strategic relevance and continued excellence in research, clinical innovation, and global collaboration.

# SCIENTIFIC PROGRAMS & STRATEGIC INITIATIVES

- FungiScope® Update
- FungiQuest®
- FungiScope® Candida Campaign
- CAMEO
- Fungal Capacity
- Clinical Trials
- CandEye
- Antifungal Immunology Lab
- Working Groups and Multinational Research Consortia

# FUNGISCOPE® UPDATE

## DR. DANILA SEIDEL

FungiScope® is a long-standing Working Group of the ECMM and ISHAM, serving as a global registry and collaborative research platform for invasive fungal infections. By systematically capturing real-world clinical data through a standardized, web-based electronic case report form (eCRF), the registry contributes to a comprehensive understanding of the epidemiology, pathogen biology, and clinical progression of these complex diseases.

Now in its 22nd year, the initiative has established partnerships with contributors in over 96 countries and has a collection of more than 6,600 documented cases, supporting clinicians and advancing the understanding of fungal disease epidemiology across diverse healthcare settings (number as of July 2025; this number continues to grow as new cases are reported and documented regularly).

This global effort plays a critical role in informing evidence-based guidelines and supporting the development of strategies aimed at improving outcomes for patients worldwide.

Participation in the FungiScope® registry is open to everyone, with data entry being fully anonymized and retrospective. Data quality is ensured by the central FungiScope® team consisting of scientists and infectious disease specialists, who validate all submitted cases.

Where feasible, corresponding clinical fungal isolates are collected, examined, and preserved in a biobank located in Cologne, Germany, supporting ongoing research including centralized species identification and antifungal susceptibility testing. In cases where international shipment of materials is restricted, samples may be forwarded to one of the cooperating, regional laboratories. Currently, regional labs are active in six countries: Australia, the Czech Republic, Germany, India, Russia and Spain.

FungiScope® continues to foster global collaboration through multi-center studies that lead to high-impact publications, inform evidence-based treatment guidelines, and support the development of expert consensus recommendations. Analyses conducted within the network have addressed the epidemiology, management, and outcomes of rare fungal infections in diverse patient populations.

# FUNGISCOPE® UPDATE

**22 years**

**96 countries**

**6,600 cases**

As of July 2025; this number continues to grow as new cases are reported and documented regularly.

FUNGISCOPE
GLOBAL FUNGAL INFECTION REGISTRY

Due to the rising morbidity and mortality associated with mould infections, coupled with increasing antifungal resistance and therefore significantly limiting effective treatment options, the main research focus remains on rare moulds and other emerging fungi.

To enhance clinical understanding and improve patient care, FungiScope® continuously conducts sub-group analyses focusing on specific populations and regional differences. Particular attention is given to vulnerable groups such as pediatric patients and individuals affected by invasive gastrointestinal mucormycosis, the emergence of resistance patterns, and patients treated with newer antifungals. Ongoing efforts also address geographical variation in fungal disease presentation and the emerging impact of climate change, especially in Asian countries where these factors are increasingly relevant.

# FUNGISCOPE® *CANDIDA* CAMPAIGN (2024–2026)

## DR. DANILA SEIDEL

In response to the growing clinical significance and demand for detailed insights into invasive Candida infections, a major sub-project was launched in 2024: the FungiScope® *Candida* Campaign.

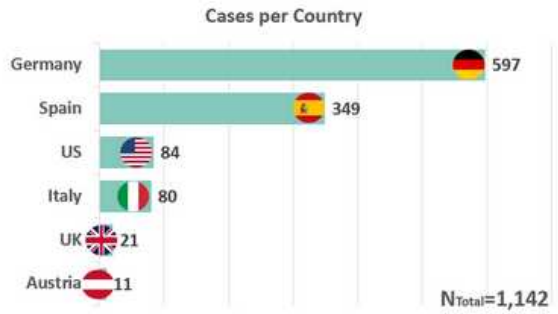
This initiative aims to provide a more detailed epidemiological overview, support the development of targeted treatment strategies in light of new antifungals being approved and in the pipeline, and address the growing clinical challenges posed by infections of candidemia and invasive candidiasis globally.

Retrospective case data are being collected via a separate electronic case report form between January 1st, 2024 and December 31st, 2026 with a follow up of 3 months.

To date, 1,142 cases have been contributed by 60 sites in five countries as of August 2025, with participation continuing to expand. This growing dataset will enable detailed assessments of therapeutic approaches, resistance trends, and patient risk profiles.

The campaign further aims to foster scientific exchange within the global mycology community and contribute to evidence-based guidance. Active contributors are recognized through authorship opportunities, reinforcing the collaborative nature of the initiative.

### Current Progress in Participation




60 active sites in Europe and US

FUNGISCOPE CANDIDA

# FUNGISCOPE® *CANDIDA* CAMPAIGN (2024–2026)

FUNGISCOPE

A Global Fungal Infection Registry

WWW.FUNGISCOPE.NET

EQUAL Candida Score INSIDE

Download the EQUAL Score Candida App

Institute of Translational Research, CECAD Cluster of Excellence, Excellence Center for Medical Mycology (ECMM), University of Cologne, Germany

Visual concept and design by Natalia Vasenda, M.Sc. and Danila Seidel, PhD, FECMM (Cologne, Germany).

**FungiScope® Global Candida Campaign**

**Participate in our global study on invasive *Candida* infections**

Join our international network dedicated to improving patient outcomes and contribute to advancing medical knowledge in the field of invasive fungal infections.

Together we aim at a collection of 3,000 cases of invasive *Candida* infections through retrospective and anonymized documentation. Main contributors will be acknowledged accordingly on publications. Collaborator Group for sites with fewer cases. Country-specific publications planned in addition lead by country coordinators.

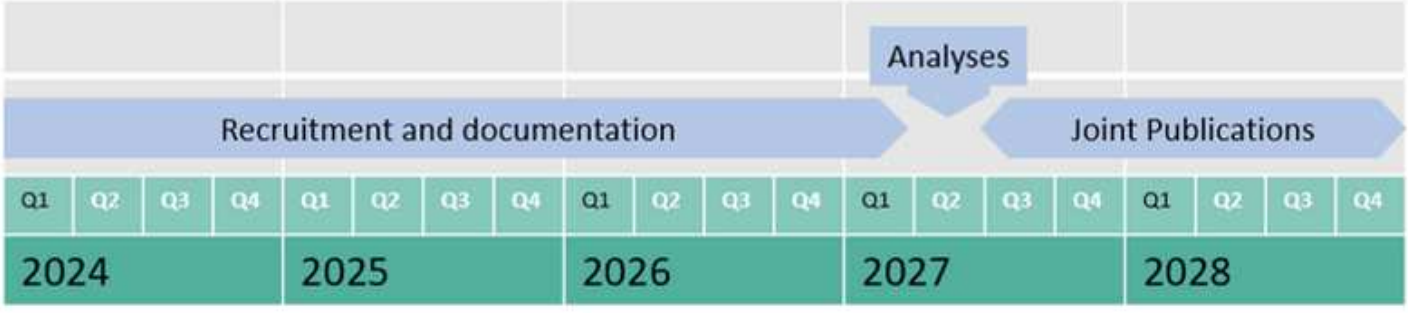
**Inclusion criteria:**
Adult
Candidemia / invasive *Candida* infection
Diagnosis in 2024 - 2026


FUNGISCOPE CANDIDA

Collaborators from all clinical and research backgrounds are welcome to join.

**Steps for getting involved:**
- Contact us for participation: fungiscope@uk-koeln.de
- Get an account
- Share your clinical cases
- Joint publications

## *Candida* Campaign Timeline



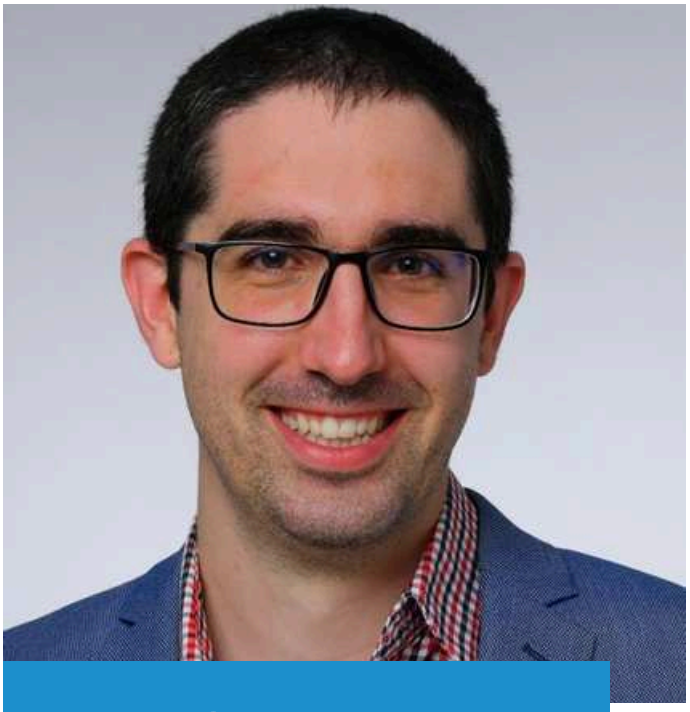
# FUNGIQUEST®

## DR. DANILA SEIDEL

FungiQuest® is a web-based clinical decision-support tool developed within the FungiScope® network and accessible via https://www.fungiquest.net/. It enables healthcare professionals to explore fully validated case vignettes from the registry in order to guide individualized patient management.

By allowing clinicians to search and compare documented cases based on specific parameters, such as risk factors, site of infection, antifungal therapy, and clinical outcome, FungiQuest® fosters the exchange of real-world experience and contributes to harmonizing clinical practice in the management of invasive fungal infections.

# ASSESSMENT OF DIAGNOSTIC CAPACITY FOR INVASIVE FUNGAL INFECTIONS (IFI)



## DR. JON SALMANTON-GARCÍA

This international project was established to evaluate and map the diagnostic capacity for invasive fungal infections (IFI) across diverse healthcare settings. Through structured surveys, the project collected data on the availability, accessibility, and routine use of key diagnostic tools, including galactomannan and β-D-glucan assays, fungal culture, microscopy, PCR, therapeutic drug monitoring (TDM), imaging, and access to antifungal medications.

Findings revealed substantial variability in diagnostic infrastructure between and within countries, with particularly pronounced disparities in resource-limited regions. These results underscored the need for wider adoption of standardized diagnostic protocols and increased investment in laboratory capacity to ensure early and accurate IFI detection.

The data generated have contributed to identifying critical diagnostic gaps and supporting the development of targeted strategies to improve patient outcomes. Conducted in collaboration with international clinical mycology networks - including EFISG, ECMM, and ISHAM - the project provides valuable evidence to inform future research and health policy.

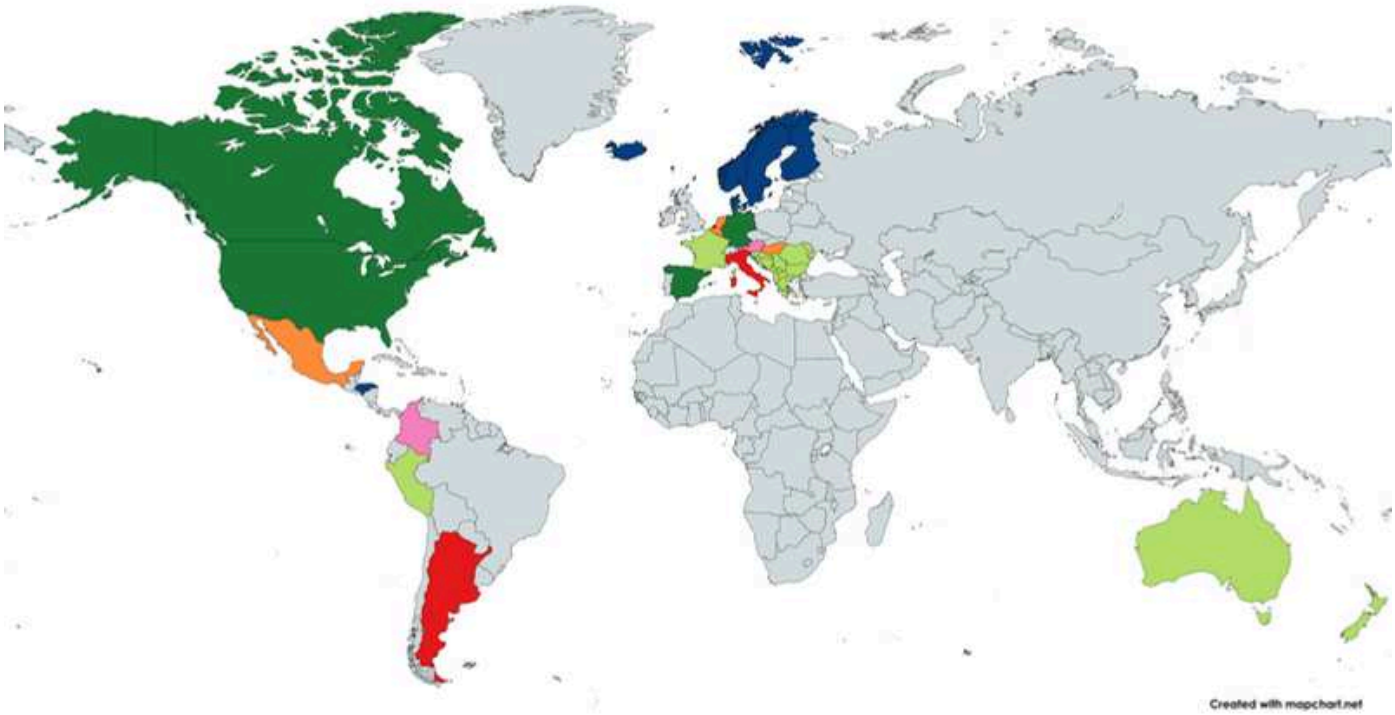
To date, country- and region-specific results have been published for Africa, Argentina, Asia-Pacific, Austria, the Balkans, Benelux, Brazil, Eastern and South-Eastern Europe, Europe as a whole, Germany, Honduras, Hungary, Italy, Latin America, and Peru.

Ongoing or upcoming analyses are underway for Australia/New Zealand, Colombia, France, an updated assessment of Latin America (2024), Mexico, the Nordic countries, and the United States/Canada.

# ASSESSMENT OF DIAGNOSTIC CAPACITY FOR INVASIVE FUNGAL INFECTIONS (IFI)

## Continent Level


## Country-Region Level



# REFERENCES ASSESSMENT OF DIAGNOSTIC CAPACITY


**Africa:** https://www.thelancet.com/journals/lanmic/article/PIIS2666-5247(21)00190-7/fulltext

**Argentina:** https://academic.oup.com/mmy/article/61/6/myad058/7197443?login=false

**Asia/Pacific:** https://www.sciencedirect.com/science/article/pii/S0924857923000109?via%3Dihub

**Austria:** https://onlinelibrary.wiley.com/doi/10.1111/myc.13650

**Balkans:** https://www.sciencedirect.com/science/article/pii/S1876034124002272?via%3Dihub

**Benelux:** Benelux: https://onlinelibrary.wiley.com/doi/10.1111/myc.70092

**Brazil vs Europe:** https://journals.asm.org/doi/10.1128/spectrum.02112-24?url ver=Z39.88-2003&rfr id=ori:rid:crossref.org&rfr dat=cr pub%20%200pubmed

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**Europe:** https://www.thelancet.com/journals/lanmic/article/PIIS2666-5247(22)00261-0/fulltext

**Germany:** https://academic.oup.com/jacamr/article/6/3/dlae083/7684811?searchresult=1

**Honduras:** https://academic.oup.com/ofid/article/11/10/ofae578/7808873?login=false

**Hungary:** https://journals.sagepub.com/doi/10.1177/20499361231219315?url ver=Z39.88-2003&rfr id=ori:rid:crossref.org&rfr dat=cr pub%20%200pubmed

**Latin America:** https://onlinelibrary.wiley.com/doi/10.1111/myc.12890

**Italy:** https://link.springer.com/article/10.1007/s15010-023-02084-x

**Peru:** https://journals.asm.org/doi/10.1128/spectrum.02020-24?url ver=Z39.88-2003&rfr id=ori:rid:crossref.org&rfr dat=cr pub%20%200pubmed

**Portugal:** https://link.springer.com/article/10.1007/s11046-024-00830-9


# CAMEO - A SURVEY ON REAL-LIFE MANAGEMENT OF CANDIDAEMIA

## DR. ROSANNE SPRUTE

The ECMM Excellence Center for Medical Mycology at the University of Cologne has made substantial progress with the initiative “CAMEO”, an ongoing national survey assessing the real-life management of candidaemia in German hospitals across medical specialties. The primary aim of the survey is to evaluate how diagnostic and therapeutic guidelines for *Candida* bloodstream infections are implemented in everyday clinical settings, and to identify systemic gaps and barriers to optimal care.

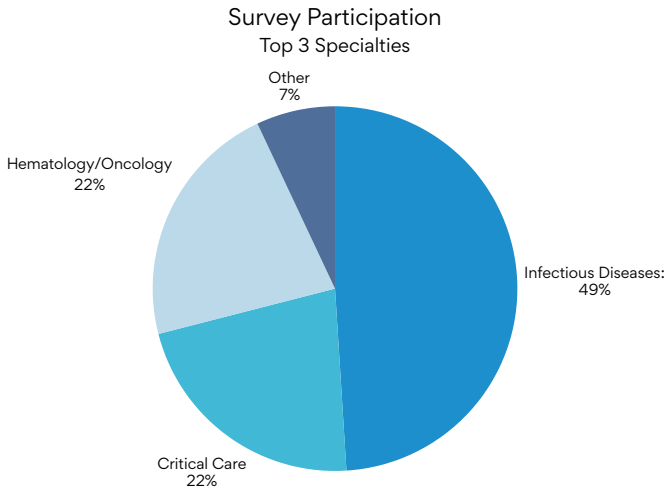
n interim analysis in summer 2024 was conducted based on over 120 completed responses, revealing several important findings.

While conventional diagnostic tools such as blood cultures and species identification are widely available, access to more advanced diagnostic methods varies significantly. Furthermore, while most respondents follow guideline-recommended intravenous initiation and subsequent switch to oral therapy based on clinical and microbiological criteria, gaps remain in the uniform application of follow-up procedures including diagnostic modalities like ophthalmoscopy.

The interim results underscore the need for enhanced education, infrastructure, and expert support. Efforts are now being directed toward expanding the survey’s reach to younger medical professionals and less represented institutions to ensure a more comprehensive and representative dataset. This initiative reinforces ECMM’s commitment to rational antifungal management and improving patient outcomes across healthcare settings.

# CAMEO - A SURVEY ON REAL-LIFE MANAGEMENT OF CANDIDAEMIA


# CAMEO - INTERIM RESULTS (DEC 2023 – JUN 2024)



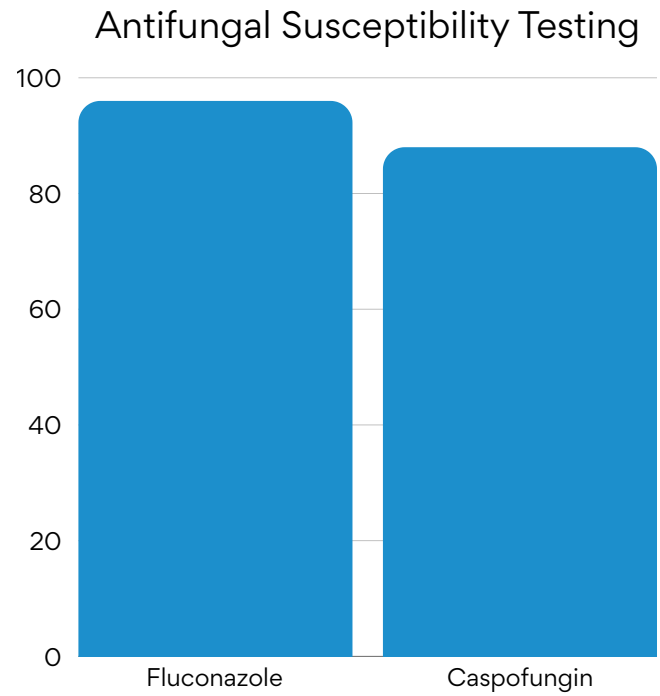

## Diagnostic Practices

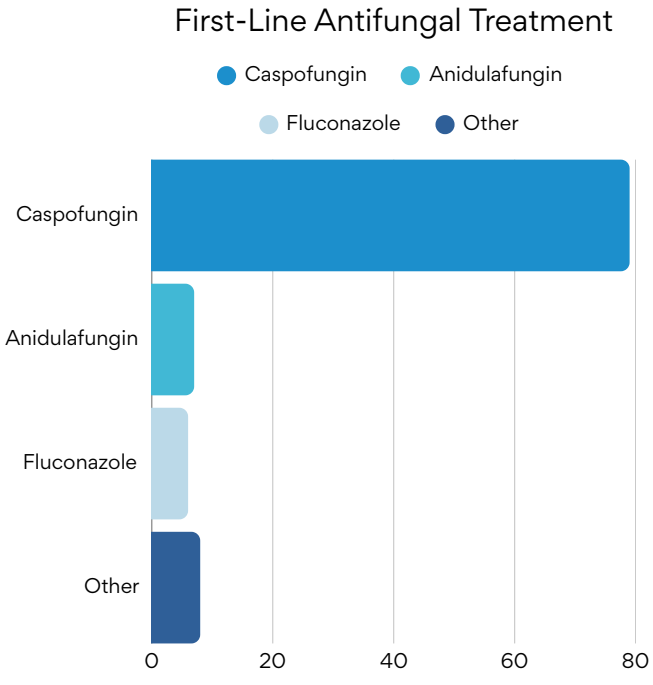
Echocardiography performed in 43% of patients

Ophthalmoscopy in 53%

Reasons:

- Persistent candidaemia
- Prosthetic valve/device (for echocardiography)
- Visual symptoms (for ophthalmoscopy)




## Administration and Treatment Duration

IV initiation: 97%

Oral initiation: 3%

Switch guided by: Follow-up blood cultures

Treatment duration: 14 days from first negative culture: 96%

# CLINICAL TRIALS AT THE ECMM EXCELLENCE CENTER COLOGNE

Since January 2021 a total of 10 interventional trials evaluating antifungals have been initiated at the ECMM EC Cologne. In total, 55 patients have been included in these Phase I to III trials. Four interventional clinical trials with novel antifungals actively enrolled patients at the ECMM EC Cologne during the 4 year period. Active support and trial lead of studies endorsed by the ECMM is provided. Furthermore, the Cologne ECMM EC included eight patients in currently ongoing compassionate use / early access programmes.

Furthermore, the ECMM EC has conducted four Investigator-initiated non-interventional clinical studies with the inclusion of 81 patients to date.

The Director and the Deputy Directors of the Cologne ECMM EC serve on Data Review Committees, Data Safety Monitoring Boards or as Principal Investigators, and National or International Study Coordinators of the below mentioned trials. Furthermore, they are involved in designing clinical trials with novel antifungal drugs entering clinical development in cooperation with the developing companies.

# CLINICAL TRIALS AT THE ECMM EXCELLENCE CENTER COLOGNE

## Interventional clinical trials with antifungal drugs at the ECMM EC Cologne since 2021

| Study title | Recruitment period at ECMM EC Cologne |
|---|---|
| Open-Label Study to Evaluate the Efficacy and Safety of SCY-078 in Patients with Fungal Diseases that are Refractory to or Intolerant of Standard Antifungal Treatment (FURI) FURI (SCY-078-301) | October 2017 – June 2023 |
| A Multicenter, Randomized, Double-Blind Study to Evaluate the Safety and Efficacy of the Combination Therapy of SCY-078 with Voriconazole in Patients with Invasive Pulmonary Aspergillosis (SCYNERGIA) | May 2020 – December 2023 |
| A Phase 3, Multicenter, Randomized, Double-Blind Study of the Efficacy and Safety of Rezafungin for Injection Versus the Standard Antimicrobial Regimen to Prevent Invasive Fungal Diseases in Adults Undergoing Allogeneic Blood and Marrow Transplantation (RESPECT) | Since January 2021 |
| A Phase 2, Open-Label Study to Evaluate the Safety and Efficacy of APX001 in the Treatment of Patients with Invasive Mold Infections Caused by Aspergillus Species or Rare Molds APX001- 202 | February 2021 – May 2022 |
| A Phase 3, Multicenter, Randomized, Double-blind Study of the Efficacy and Safety of Rezafungin for Injection versus Intravenous Caspofungin Followed by Optional Oral Fluconazole Step-down in the Treatment of Subjects with Candidemia and/or Invasive Candidiasis (RESTORE) | May 2021 – August 2021 |

# CLINICAL TRIALS AT THE ECMM EXCELLENCE CENTER COLOGNE

| Study title | Recruitment period at ECMM EC Cologne |
|---|---|
| An open-label single-arm Phase IIb study of F901318 as treatment of invasive fungal infections due to *Lomentospora prolificans*, *Scedosporium* spp., *Aspergillus* spp., and other resistant fungi in patients lacking suitable alternative treatment options (FORMULA) | Jun 2021 – December 2022 |
| Phase III, adjudicator-blinded, randomised study to evaluate the efficacy and safety of treatment with olorofim versus treatment with AmBisome® followed by standard of care (SOC) in patients with invasive fungal disease (IFD) caused by *Aspergillus* specie (OASIS) | Since December 2022 |
| A Phase 3, Multicenter, Prospective, Randomized, Double-blind Study of Two Treatment Regimens for Candidemia and/or Invasive Candidiasis: Intravenous Echinocandin followed by Oral Ibrexafungerp versus Intravenous Echinocandin followed by Oral Fluconazole (MARIO) | Since April 2023 (on hold) |
| A Phase 3, Multicenter, Prospective, Randomized, Double-blind Study to evaluate the Safety and efficacy of PC945 in combination with other antifungal therapy for the treatment of refractory invasive pulmonary aspergillosis (OPERA-T) | Since July 2023 |
| An interventional efficacy and safety Phase 3 double-blind 2-arm study to investigate IV followed by oral fosmanogepix compared with IV caspofungin followed by oral fluconazole in adult participants with candidemia and/or invasive candidiasis. | Since April 2025 |
| An Interventional Phase 3, Open-Label, 2-Cohort Study to Investigate Efficacy and Safety of Fosmanogepix (PF-07842805) in Adult Participants with Invasive Mold Infections Caused by *Aspergillus spp.*, *Fusarium spp.*, *Scedosporium spp.*, *Lomentospora prolificans*, *Mucorales* fungi, or Other Multi-Drug Resistant Molds (FMGX-CS-302) | Planned summer 2025 |

# CLINICAL TRIALS AT THE ECMM EXCELLENCE CENTER COLOGNE

## Investigator-initiated non-interventional clinical studies at the ECMM EC Cologne since 2021

| Study title | Recruitment period at ECMM EC Cologne |
|---|---|
| Drug-drug interactions of posaconazole and midostaurin in patients with acute myeloid leukemia (MidoPosa) | October 2019 – January 2023 |
| Multicenter case-control study of breakthrough invasive mold infections under posaconazole prophylaxis (bIMI) | March 2022 – December 2022 |
| Clinical implications of azole-resistant aspergillosis in hematological malignancy (CLARITY) | May 2017 – August 2021 |
| Epidemiology of Pneumocystis jirovecii Pneumonia at University Hospital of Cologne | Since 2023 |

# CANDEYE – NON-MYDRIATIC FUNDOSCOPY IN CANDIDEMIA

## DR. ILANA REINHOLD

Candidemia remains a significant global health concern, affecting over 1.5 million individuals each year. One of its serious and potentially vision-threatening complications is ocular candidiasis, which may present as chorioretinitis or progress to endophthalmitis. Despite its relevance, ocular involvement often remains asymptomatic and thus undetected.

Current ECMM and IDSA guidelines recommend fundoscopy for all patients with candidemia, but limited access to ophthalmologic expertise and logistical challenges often hinder consistent implementation.

Traditionally, fundoscopy relies on indirect ophthalmoscopy with pharmacologic mydriasis, a method that requires trained ophthalmologists and is both time- and resource-intensive. In response, this initiative explores the routine use of non-mydriatic fundus photography in clinical care as an alternative approach for screening ocular candidiasis in patients with candidemia.

**Implementation Approach**

The goal of our project is the implementation of a novel diagnostic approach as part of routine care. The protocol was initiated in February 2025 in Cologne. Adult patients with confirmed candidemia receive serial non-mydriatic fundus photography every 48–72 hours during antifungal treatment or until neutrophil recovery. Indirect ophthalmoscopy under mydriasis is performed by ophthalmologists for comparison in every patient if feasible. Fundus images are categorized by quality andevaluated remotely through teleophthalmology.

**Primary Aim:**

To assess the feasibility and diagnostic performance of non-mydriatic fundoscopy integrated as standard of care, compared to conventional mydriatic fundoscopy.

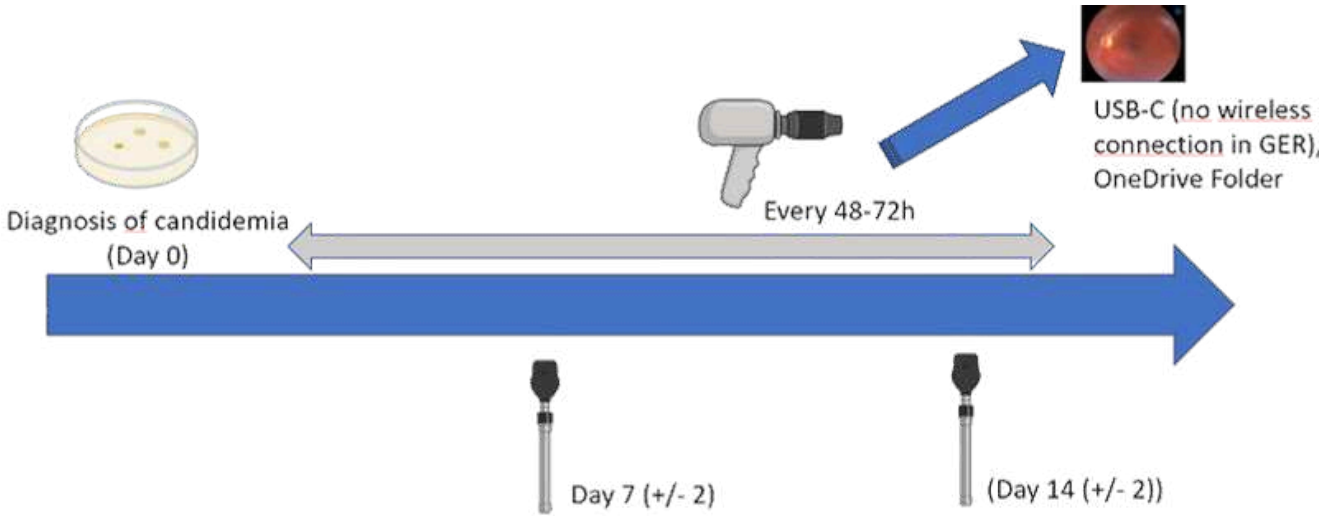
**Additional Aims:**

- Explore the utility of teleophthalmologic assessment in routine workflows
- Determine optimal timing for screening of ocular candidiasis
- Describe common ocular manifestations and associated risk factors
- Analyze the impact of ocular findings on antifungal management

# CANDEYE – NON-MYDRIATIC FUNDOSCOPY IN CANDIDEMIA

This project targets a major diagnostic gap in the management of candidemia. The use of portable, non-mydriatic fundus cameras operated by non-specialized staff may offer a scalable and cost-efficient alternative to traditional methods—particularly in settings with limited access to ophthalmologic services.

Furthermore, integrating teleophthalmology enables remote expert evaluation, facilitating early detection and tailored treatment. The results of this real-world implementation may help shape future screening protocols and enhance guideline adherence in the care of patients with invasive candidiasis.




| Age | Sex | PID | Reason for admission | Underlying diseases | Immunosuppression | Neutropenia <0.5 G/l | if yes, XX ( | Thrombocyte count | Ward |
|---|---|---|---|---|---|---|---|---|---|
| 38 | male | 6715982 | severe hypokalemia, suspected liver absce | chronic pancreatitis with obstructive chole | no | | | | |

| Candida species | 1st date of BC positivity (blood sampling) | 1st date of BC negativity (blood sampling) | Duration of BC positivity (da | Date of antifungal treatment initiation | Antifungal treatment | Time between 1st BC sampling and treatment initiation (days) |
|---|---|---|---|---|---|---|

| Date of Exam Optomed | Examiner Optomed | Comments/potential obstacles in examination with Optomed | Pupils dilated for Optomed exam | Findings Optomed exam, RETINA | Findings Optomed exam, OPTIC NERVE |
|---|---|---|---|---|---|

| Consultation by an ophtalmologist, yes /no | if yes: dat | if yes: findings | |
|---|---|---|---|
| yes | 12.03.2025 | in mydriasis no indication of ocular involvement in candidemia | |

# ANTIFUNGAL IMMUNOLOGY LAB

## DR. ROSANNE SPRUTE

The Laboratory for Antifungal Immunity at the University Hospital Cologne focuses on translational research that bridges clinical observations and samples to experimental research and back.

Driven by unmet clinical needs for improved diagnostics and therapeutic strategies in invasive fungal infections, the lab leverages existing translational pipelines to explore the adaptive immune response against fungal pathogens.

Current research centers on B cell-mediated immunity, with a particular focus on characterizing antigen-specific responses and developing monoclonal antibodies targeting fungal antigens. We also study T cell responses and exhaustion dynamics in the context of fungal infections. These efforts are supported by continuous access to high-quality clinical biospecimens through our clinical trials unit and a broad collaborative network.

The work aims to lay the foundation for novel diagnostic tools and immune-based therapies to manage fungal infections.

# CONTRIBUTIONS TO ECMM WORKING GROUPS AND MULTINATIONAL RESEARCH CONSORTIA

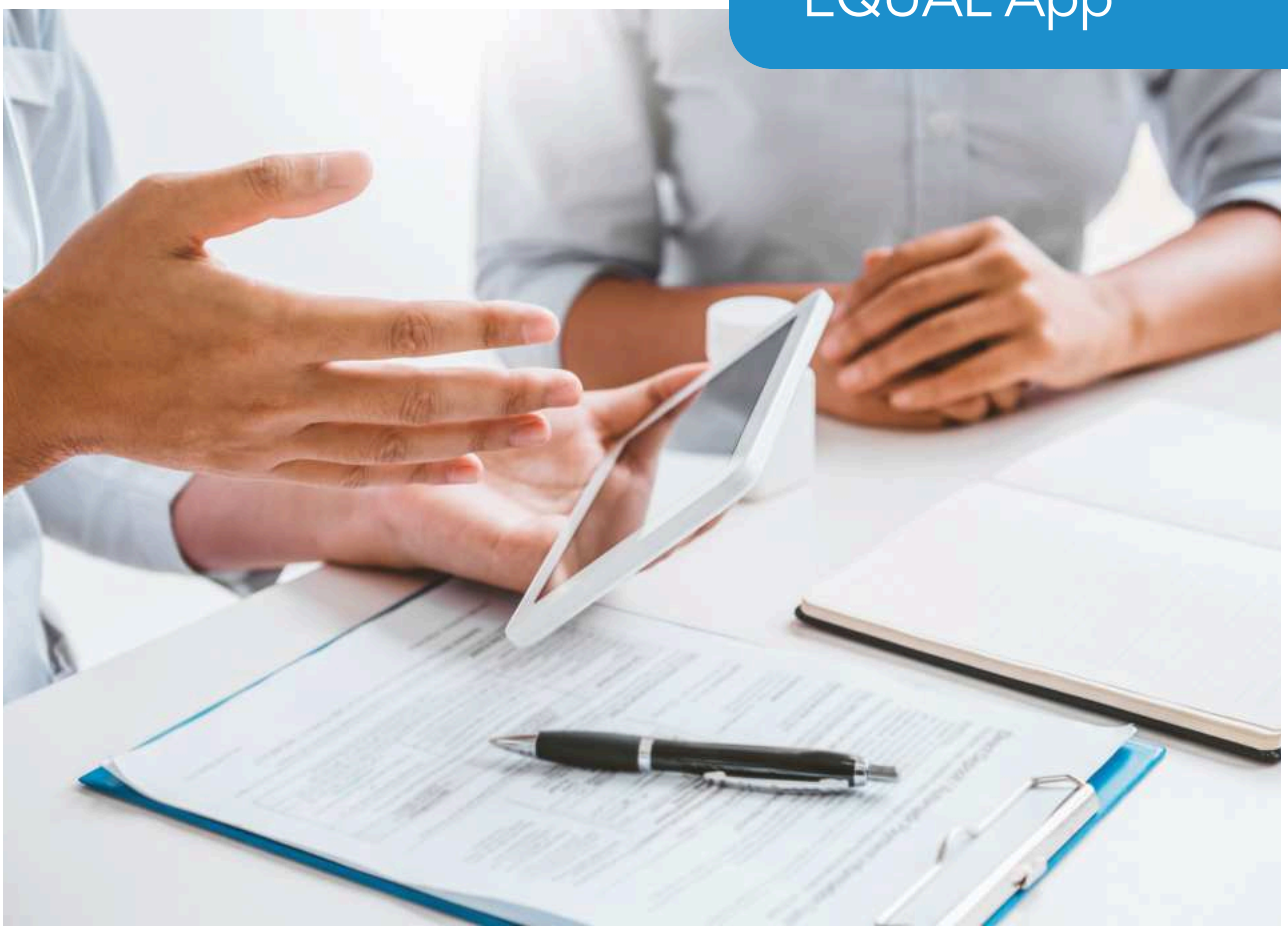
In addition to ongoing research and clinical activities, members of the ECMM Excellence Center in Cologne have actively contributed to several ECMM Working Groups during the reporting period. These include ***Candida* III** (Priv.-Doz. Dr. Philipp Koehler, Dr. Jon Salmanton-García, Prof. Dr. Oliver Cornely) and ***Candida* IV** (Dr. Rosanne Sprute, Prof. Dr. Oliver Cornely), both aiming to advance the understanding and management of invasive candidiasis through international, multicenter collaboration. ***Candida*** IV has a particular focus on non-albicans Candida species, tackling knowledge gaps on antifungal resistance and tolerance and their association with clinical outcomes. The study is expected to enroll a total of 2,000 patients from 150 institutions worldwide.

Further involvement includes the working group on **Immunologic Markers for Treatment Monitoring and Diagnosis in Invasive Mold Infections** (Priv.-Doz. Dr. Philipp Koehler, Dr. Rosanne Sprute), which explores innovative biomarkers to improve diagnostic accuracy and therapeutic monitoring.

Participation in the **CLARITY study** (Dr. Danila Seidel) supports efforts to clarify clinical aspects and optimize treatment strategies for rare fungal infections. Additionally, contributions to the joint **MSG-ERC/ECMM Response Criteria initiative** (Prof. Dr. Oliver A. Cornely, Dr. Rosanne Sprute) are aiding to revise and establish standardized definitions for assessing treatment response in invasive fungal diseases. These definitions are critical for ensuring consistency across clinical trials, thereby facilitating meaningful comparisons and enabling data pooling to advance research and clinical practice.

# INTERNATIONAL GUIDELINES & SCORING TOOLS

- Global Guideline Programme
- MedicalGuideline.org
- EQUAL Scores and EQUAL App



# GLOBAL GUIDELINE PROGRAM

## VISION AND MISSION

In response to the rising global burden of invasive fungal infections - driven by growing numbers of immunocompromised and critically ill patients - the ECMM Excellence Center Cologne, under the leadership of Prof. Dr. Oliver Cornely, has played a central role in shaping the ECMM's global strategy. In 2017, Cologne served as a key driving force behind the launch of the "One World – One Guideline" initiative.

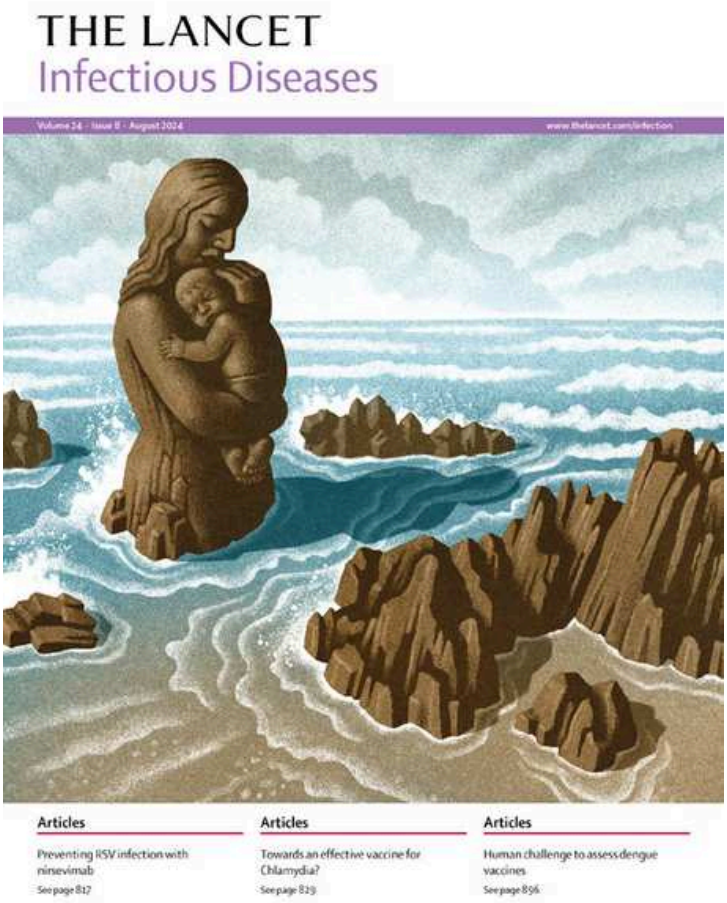
This global effort, coordinated in large part through the Cologne Center, aims to provide harmonized, evidence-based recommendations for the diagnosis and treatment of fungal diseases across diverse healthcare settings, regardless of regional resource availability.

To date, seven international guidelines have been published - including recent updates on cryptococcosis and candidiasis - demonstrating the Center's and ECMM's shared commitment to improving care for patients affected by rare fungal infections. Additional guidelines are currently in development, with Cologne continuing to serve as a hub for international collaboration and clinical excellence.

# *CRYPTOCOCCUS* GUIDELINE 2024

The **Global Guideline for the Diagnosis and Management of Cryptococcosis** was published in early 2024. Developed with the involvement of over 60 authors, including contributors from the ECMM EC in Cologne, and endorsed by more than 70 international societies.

The guideline provides stratified recommendations adapted to varying healthcare infrastructures. In light of limited global access to essential antifungals, the guidance includes both high-resource and resource-constrained strategies, addressing treatment, follow-up, and diagnostics of cryptococcal disease.




DOI
10.1016/S1473-3099(23)00731-4

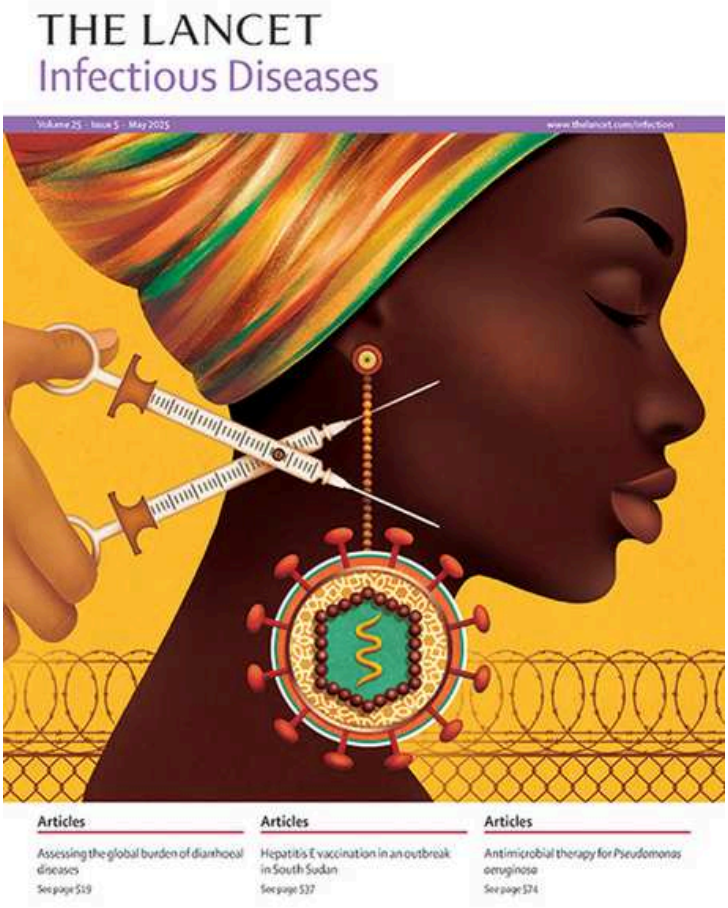
PMID
38346436

# *CANDIDA* GUIDELINE 2025

The **Global Guideline on the Diagnosis and Management of Candidiasis** was published in February 2025 after a four-year collaborative process involving over 100 experts from 35 countries. This endeavour was led by the ECMM EC in Cologne.

It delivers detailed recommendations across the spectrum of candidiasis, from mucocutaneous to life-threatening invasive disease, including strategies to address antifungal resistance and emerging pathogens like *Candida auris*. Significantly, it addresses recent challenges such as fungal nomenclature changes and offers recommendations for newly licensed antifungals including current knowledge gaps in their use.

Backed by more than 70 international societies, this guideline aims to deliver a robust, practical resource for clinicians globally.





DOI

10.1016/S1473-3099(24)00749-7

PMID

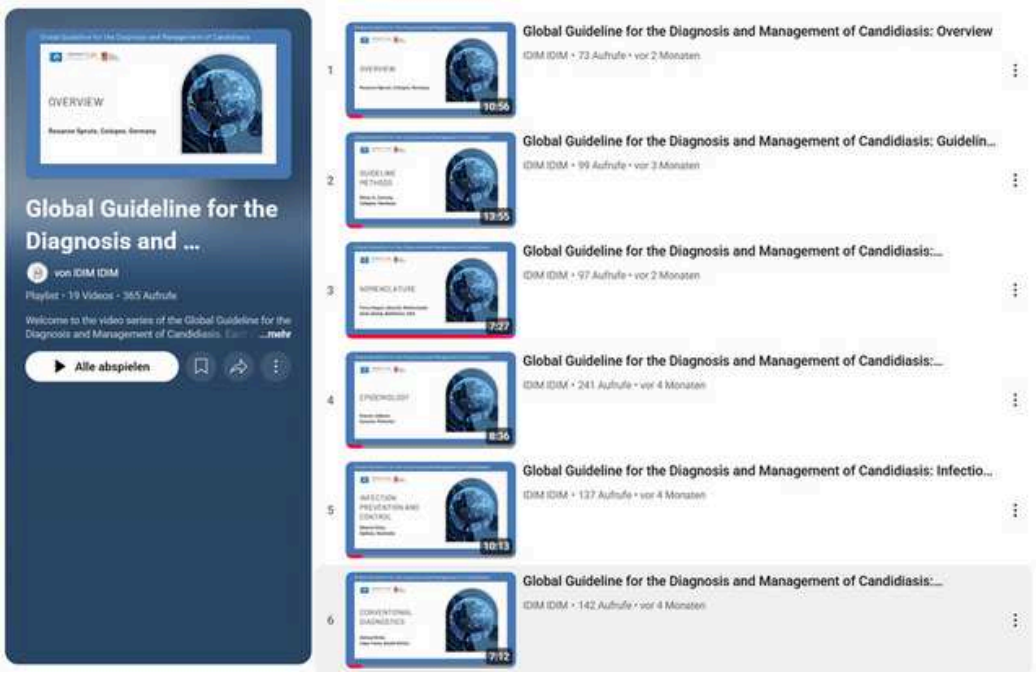
39956121

# VIDEO SERIES LAUNCH: CANDIDA GLOBAL GUIDELINE

A comprehensive video series has been developed to accompany the Global Guideline for the Diagnosis and Management of Candidiasis, with the goal of enhancing accessibility and promoting the dissemination of key recommendations and insights from the guideline. The series is designed to support clinicians, researchers, and students by presenting complex content in a clear and engaging audiovisual format.

In total, 19 videos were produced, each corresponding to a specific chapter of the guideline. The videos feature presentations by the respective chapter authors, who offer expert explanations and contextual background to the guideline's content. A total of twelve countries are represented among the contributors, underscoring the global and collaborative nature of the project.

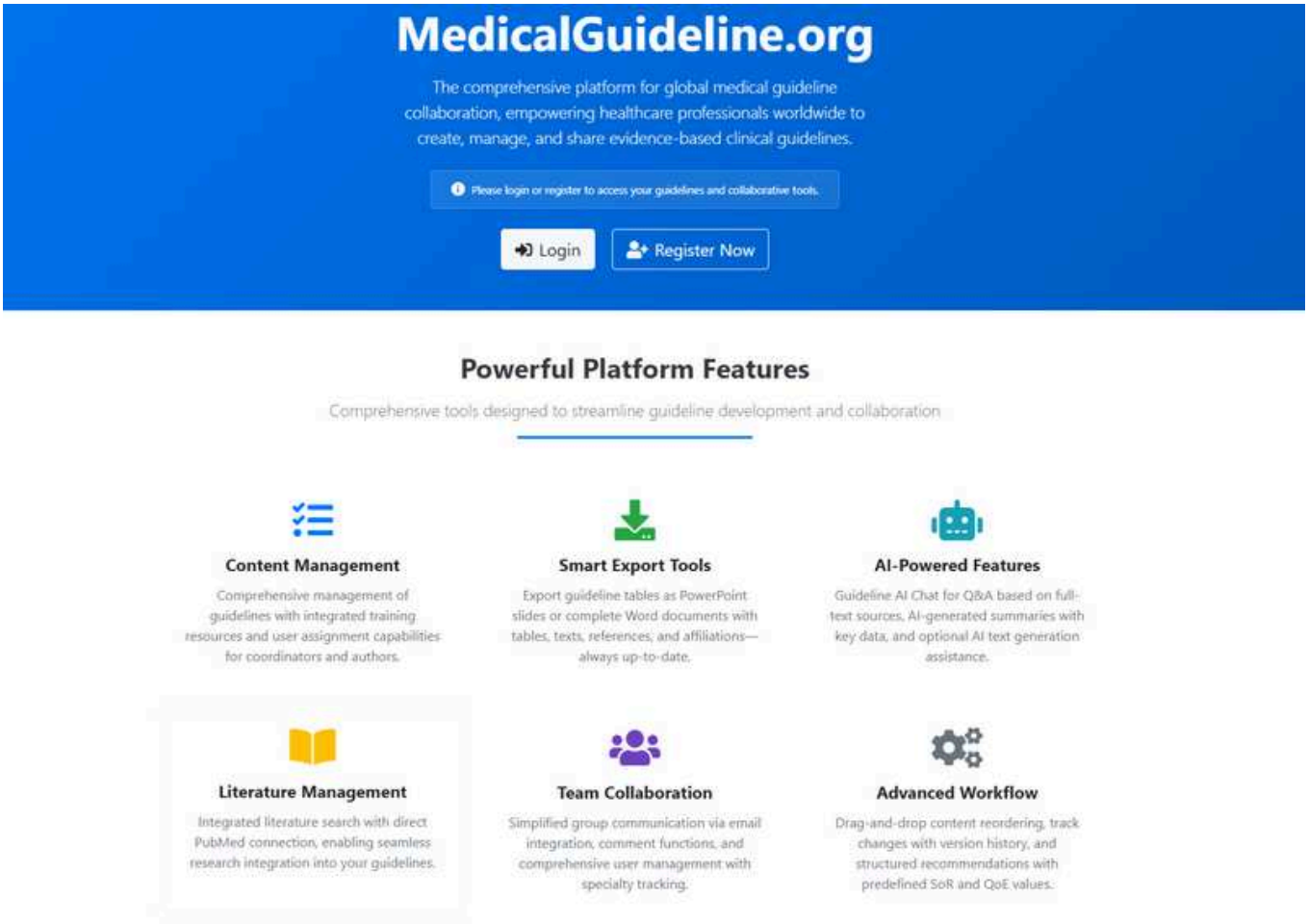
To ensure scientific traceability and long-term accessibility, each video has been assigned a Digital Object Identifier (DOI). The entire series is available as a curated playlist, providing a structured and user-friendly resource for those seeking to deepen their understanding of the diagnosis and management of candidiasis from an international perspective.



# MEDICALGUIDELINE.ORG – ADVANCING GLOBAL MEDICAL GUIDELINE COLLABORATION

The website MedicalGuideline.org was founded in 2024 to address a growing need for an efficient, and collaborative platform for developing and managing clinical guidelines on a global scale. Traditional guideline creation often involves fragmented processes, multiple tools, and limited collaboration between international experts.
This platform streamlines these workflows by offering a centralized, AI-enhanced environment that empowers healthcare professionals to create, manage, and share high-quality, evidence-based clinical recommendations. The goal was to accelerate guideline development with the highest standards of quality and transparency.

By integrating literature management, content structuring, AI-powered assistance, and collaborative communication tools into a single platform, the team aimed to remove barriers that often delay or complicate the guideline process. The platform connects multidisciplinary teams across countries, enabling real-time collaboration and harmonized standards for the development of new recommendations.

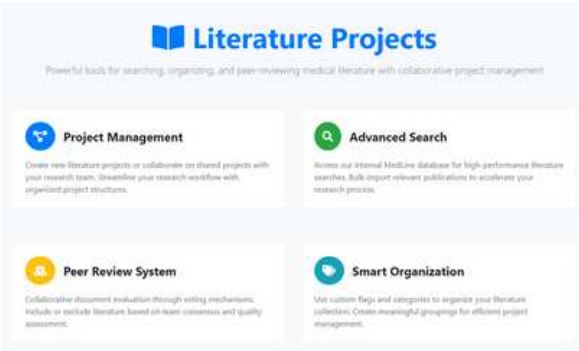


# MEDICALGUIDELINE.ORG

Key advantages and added value

- Comprehensive workflow: From literature review to final guideline publication, all steps are supported by integrated project and content management tools.
- AI-powered features: AI-driven Q&A for literature sources, text drafting, and summaries allow teams to work more efficiently and focus on critical clinical decisions rather than repetitive tasks.
- Seamless exports: Automatically generated fully formatted Word and PowerPoint documents with up-to-date tables, references, and affiliations.
- Integrated literature projects: Access to PubMed, advanced searches, imports, and collaborative peer review ensure evidence is rigorously evaluated.
- Enhanced team collaboration: Email integration, commenting, user management, and specialty tracking improve coordination among authors, reviewers, and coordinators.
- Structured recommendations: Built-in support for standardized Strength of Recommendation (SoR) and Quality of Evidence (QoE) values provides clarity and consistency.

By combining advanced technology with a truly collaborative framework, MedicalGuideline.org helps the ECMM Excellence Center Cologne and global networks create transparent, evidence-based guidelines faster and with greater consistency. This platform is not only a tool but a driver of innovation in global medical knowledge development and sharing.


MedicalGuideline.org

# EQUAL SCORE CARDS

The diagnosis and treatment of invasive fungal infections (IFIs) remain a complex task, particularly in vulnerable populations. To support clinicians and promote standardized care, the European Confederation of Medical Mycology (ECMM) has introduced the EQUAL Scores - evidence-based tools designed to evaluate the quality of IFI management and current guideline adherence. This scoring system transform guideline recommendations into practical checklists, assigning weighted values to key diagnostic and therapeutic measures.

Currently available for eight major fungal infections (including aspergillosis, candidemia, mucormycosis, cryptococcosis, scedosporiosis/lomentosporiosis, trichosporonosis and chronic pulmonary aspergillosis) the EQUAL Scores are available in 28 languages and have been adapted to suit diverse healthcare settings.

By providing a concise and accessible reference for frontline clinicians, the EQUAL Scores facilitate more consistent application of best practices. At the same time, they function as quality indicators, offering a means to benchmark performance and identify gaps in care. Importantly, studies suggest that higher adherence as measured by EQUAL Scores is associated with improved survival outcomes, highlighting their potential role in reducing IFI-related mortality. These tools demonstrate ECMM's commitment to advancing quality and consistency in the management of fungal diseases globally.

The EQUAL Score cards can be downloaded from the ECMM website:

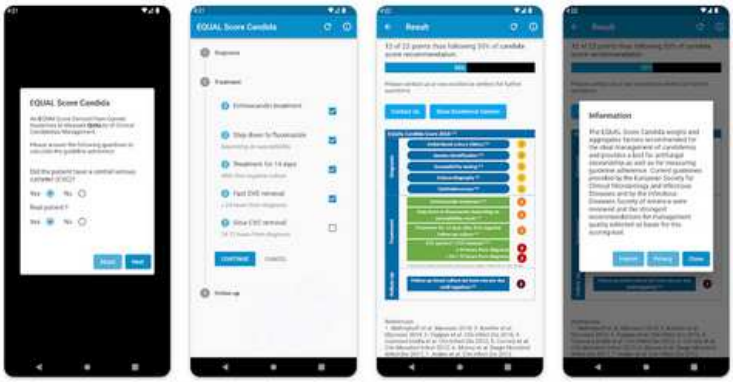
| Language |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|
| | Aspergillosis | Candida | Cryptococcosis | Mucormycosis | Scedosporiosis/ Lomentosporiosis | Trichosporon | CPA |
| Albanian | x | x | x | x | | | |
| Azerbaijani | x | x | x | x | x | x | |
| Bulgarian | x | x | x | x | | | |
| Chinese | x | x | x | x | x | | |
| Croatian | | | | | x | | |
| Czech | x | x | x | x | x | x | |
| Danish | x | | | x | | | x |
| Dutch | | x | x | | x | | |
| English | x | x | x | x | x | x | x |
| French | x | x | x | x | x | x | x |
| German | x | x | x | x | x | x | x |
| Greek | x | x | x | x | x | x | x |
| Hungarian | x | x | x | x | x | | |
| Italian | x | x | x | x | x | | |
| Japanese | x | x | x | x | x | x | x |
| Korean | x | x | x | x | x | | |
| Kurdish | x | x | x | x | x | x | x |
| Persian | x | x | x | x | x | x | x |
| Polish | x | x | x | x | x | x | x |
| Portuguese | x | x | x | x | x | x | x |
| Romanian | x | x | x | x | x | | |
| Russian | x | x | x | x | x | x | x |
| Serbo-Croatian | x | x | x | x | x | | |
| Spanish | x | x | x | x | x | x | x |
| Swahili | | | | x | x | | |
| Swedish | x | x | x | x | x | | |
| Thai | x | | x | x | | | x |
| Turkish | x | x | x | x | x | x | x |

# EQUAL APP FOR *CANDIDA* AND ASPERGILLOSIS

As part of the efforts to support guideline-based care, the EQUAL Score App was developed and released in 2024. The app aims to facilitate the practical use of EQUAL Scores in clinical settings and thereby support the implementation of current guideline recommendations.

EQUAL Scores quantify adherence to guidelines in the management of invasive fungal infections and prioritize clinical actions according to the strength of each recommendation. Several studies have demonstrated that higher EQUAL Scores are associated with improved patient survival.

The app enables fast, clear, and accessible calculation of the EQUAL *Candida* and Aspergillosis Score at the point of care. Additional scores are planned and will be integrated in future versions. The development of the app was carried out in close collaboration with relevant expert groups and based on the latest scientific evidence.

*Candida* App

Aspergillosis App

# EDUCATION & NEXT GENERATION DEVELOPMENT

- YoungECMM
- Science in Motion: IDIM Channel

# YOUNG ECMM



Image source: ECMM, Young ECMM Board.
Available at: https://www.ecmm.info/yecmm/yecmm-board/
(Accessed: July 14, 2025)

Under the guidance of ECMM EC members in Cologne, the **Young ECMM (YECMM)** initiative continues to evolve as a vibrant and international platform for early-career scientists working in medical mycology. With currently over 50 members worldwide, YECMM fosters a collaborative community of clinicians and laboratory-based researchers, aiming to provide meaningful career support, global visibility, and networking opportunities.

Over the past years, YECMM has actively contributed to shaping the scientific, educational, and social programs of the TIMM congresses, while also organizing successful networking events at major international meetings, including ESCMID Global. Current initiatives include the development of a structured mentoring program and the launch of a webinar-based educational series tailored to the needs of young mycologists.

YECMM maintains close collaboration with other international early-career networks, such as MSG-ERC Early Career and Young ISHAM, to foster knowledge exchange and cross-border collaboration. The accomplishments and research contributions of YECMM members are increasingly highlighted across ECMM channels and platforms.

The YECMM board is currently led by Dr. Rosanne Sprute (ECMM EC, Cologne), together with Dr. Sarah Dellière (France) and Dr. Matthias Egger (Austria). In June 2025, Ilana Reinhold (Cologne, Germany/Switzerland) and Yuri Vanbiervliet (Belgium) were elected to the board of the Young European Confederation of Medical Mycology (YECMM), with a leadership transition planned following TIMM 2025. This development marks an important milestone in the ongoing growth of the program and its mission to empower the next generation of leaders in medical mycology.

# SCIENCE IN MOTION: IDIM VIDEO CHANNEL

To strengthen global knowledge transfer in infectious diseases, the ECMM Excellence Centre supports the video initiative “IDIM – Infectious Diseases in Motion”, available on YouTube and YouKu. This educational platform delivers concise and engaging scientific content aimed at clinicians, researchers, and students worldwide.

Since its launch, IDIM has published over 60 expert videos on fungal topics, generating more than 30,000 views across over 70 countries. Topics include antifungal resistance, diagnostic strategies, rare infections, and clinical trial methodology. The videos are produced in collaboration with international experts to ensure clarity, quality, and scientific rigor.

The expansion to YouKu broadens access for Chinese-speaking audiences, supporting multilingual science communication and knowledge equity. The format is optimized for mobile viewing and asynchronous learning, particularly valuable for professionals in resource-limited settings.

# CONSULTING, NETWORKING & PUBLIC ENGAGEMENT

- ECMM Consulting Service
- TV and Media
- Outreach to Scientific Societies
- VACCELERATE Infrastructure
- Public Outreach

# ECMM CONSULTATION SERVICE / MYCO BOARD

**DR. ILANA REINHOLD & DR. JANNIK STEMLER**

The ECMM Expert Consult Service is an initiative of ECMM Excellence Center to provide evidence- and experience-based medical advice to other physicians treating patients with fungal infections.

Infectious Diseases Consultation improves outcome of complex and difficult-to-treat infections. Therefore, it should be an integral component of care for patients with invasive fungal infections.

**543 requests**

Between 2021 and 2025

**88 % from Germany**

**Aspergillus, Candida, Mucorales**

Primary causes of infection

At the Cologne ECMM EC, 543 requests were received globally between August 2021 and July 2025; predominantly from Germany (88%), and mainly involving infections caused by Aspergillus spp., Candida spp. and Mucorales. Requests were either made by email or phone calls.

Due to the increasing number of consultations, an interdisciplinary, weekly, online case conference was established in 2024 to discuss incoming consults from the local university tertiary care center, the Western German Cancer Centers, and other national and international consulting physicians.

European Confederation of Medical Mycology Expert Consult - An ECMM Excellence Center Initiative (*Mycoses 2020*)

The Cologne ECMM Excellence Center: A Two-Year Analysis of External Consultation Service for Invasive Fungal Infections (*Mycopathologia 2024*)

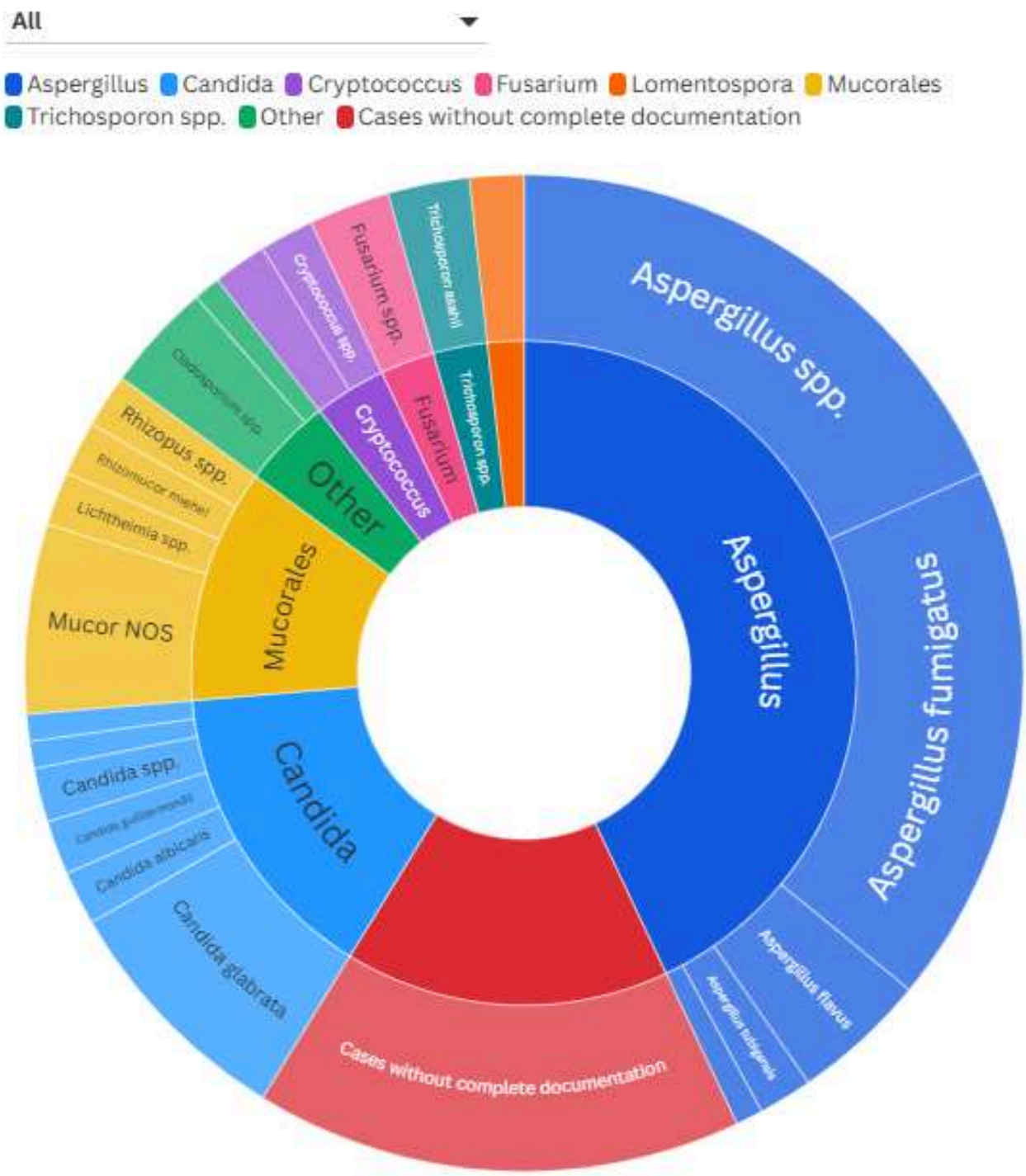
# ECMM CONSULTATION SERVICE / MYCO BOARD

The case conference, also called **Myco Board**, involves at least two mycology attending physicians of the Cologne ECMM EC (OC, IR, RS, JS), an ID resident (JN, NB), a radiologist, a microbiologist and – if required – a surgeon and a pathologist.

It follows a structured approach:
1) Patients are registered via the hospital information system
2) The consulting physicians are invited to the online Meeting via email
3) The consulting physicians present their patients medical history, current radiological/microbiological findings, treatment and question to the expert consult
4) In a case-by-case scenario, a radiologist presents imaging findings, a microbiologist discusses performed diagnostics and/or a pathologist demonstrates histopathology slides; further diagnostics are proposed
5) The board discusses the case and consents the recommendation
6) Written reports are sent out via the hospital information system and as an email to the consulting physicians
7) Data documentation can be done voluntarily via the FungiScope® registry

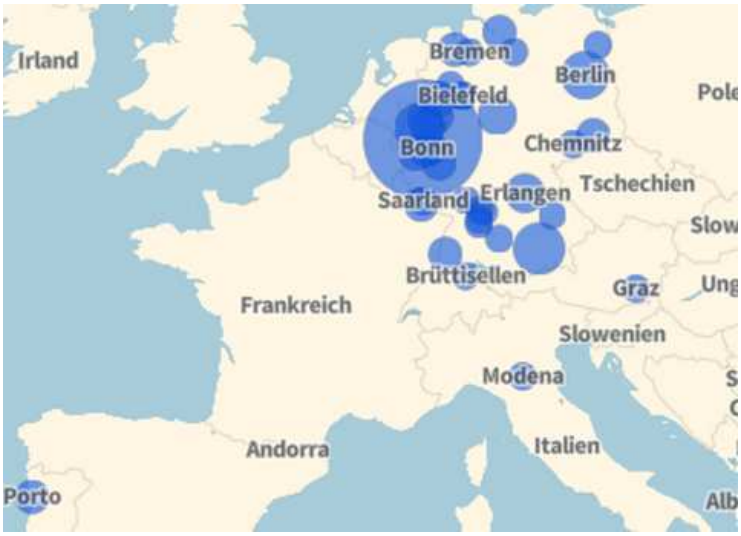
If urgent consultation is required for critically ill patients or same day treatment decisions, a consultation via phone is always possible and performed daily from Monday to Friday by one of the attending mycologists. The Myco Board includes four to six patients weekly, phone consultations comprise three to six consults per week.

# MYCO BOARD
## FUNGAL SPECIES COVERED IN MYCO BOARD CASES

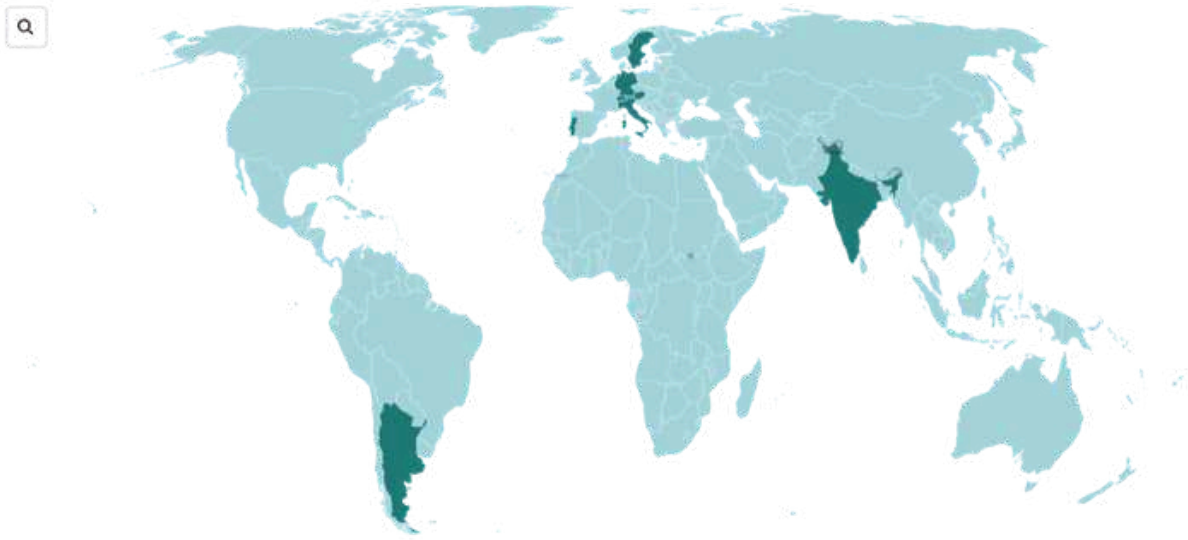


# MYCO BOARD
## CASE DISTRIBUTION

ECMM Consultation Services in 2025


Participating center (consultation)



Consultation Services Offered in 2025 in Germany

# MAJOR TELEVISION AND MEDIA CONTRIBUTIONS

## DR. JANINA LECKLER

Over the past years, fungal infections and their growing significance in public health have been prominently covered by major German and international media outlets. The ECMM Excellence Center Cologne and its experts have played a vital role in shaping these discussions, reinforcing the center's relevance and visibility across healthcare, science, and public discourse.

In FAZ.net (November 2022), Prof. Oliver Cornely highlighted health risks of mold exposure, particularly for vulnerable groups – increasing public understanding of fungal threats.

Pharmazeutische Zeitung (January 2023, online & print) addressed the rising concern of drug-resistant fungal pathogens, with ECMM expertise helping contextualize this as an urgent healthcare issue.

The connection between climate change and fungal disease spread was covered extensively: ZDF (February 2023) posed the provocative question of whether scenarios from "The Last of Us" could become reality.

NDR Visite (June 2023) and a SWR/ARD documentary (July/November 2024) delved into the rise of invasive fungal infections, supported by expert insights.

In Medscape (October 2024), low vaccination uptake among risk groups in Europe was discussed in a broader infectious disease context, demonstrating ECMM's role within global health networks.

Contagion Live (February 2025) underscored international collaboration in tackling Candida infections, showcasing ECMM's involvement in resistance management.

Multiple outlets, including Deutsches Ärzteblatt, zm online, and Pharmabarometer (February 2025), reported on the publication of new clinical guidelines for managing invasive Candida infections. These were shaped by ECMM-supported research and reinforce the center's leadership in clinical standard-setting.

Stern (November 2024) and Ärztewoche (December 2024) contributed to raising public concern and awareness around the global emergence of deadly fungal pathogens, further emphasizing the urgency of ECMM's mission.

# HIGHLIGHT: INVASIVE FUNGI, A GROWING MEDICAL CHALLENGE

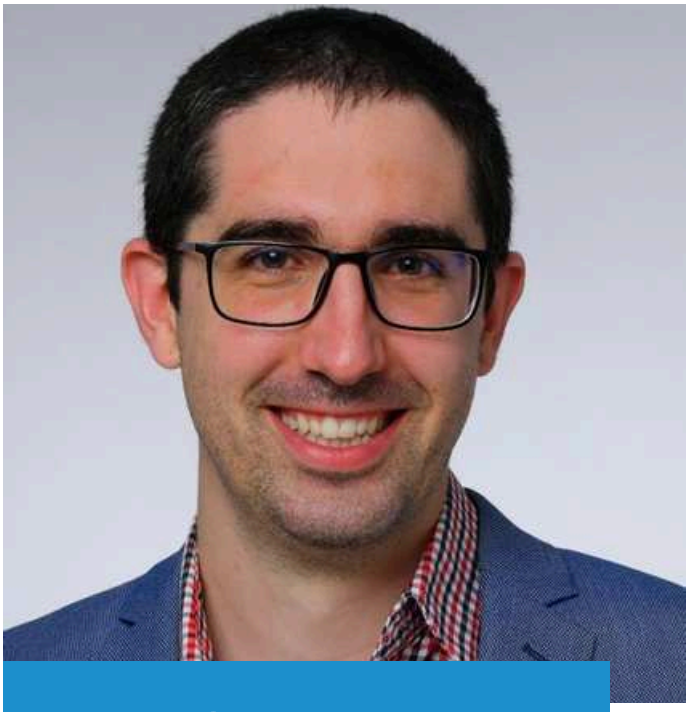
Featured Experts from the ECMM Excellence Center Cologne on National Television.

In a widely broadcast ARD documentary, Prof. Dr. Oliver Cornely and Dr. Anna Dudakova from the ECMM Excellence Center Cologne offer expert insight into the growing medical threat posed by invasive fungal infections such as *Candida auris*.

Broadcast by ARD, Germany's leading public broadcaster with millions of weekly viewers, the documentary reached a broad audience and raised national awareness for this urgent healthcare issue.

Prof. Cornely and Dr. Dudakova highlight the critical importance of early diagnosis, resistance testing, and interdisciplinary collaboration in managing these complex infections.


# OUTREACH TO SCIENTIFIC SOCIETIES



## DR. JON SALMANTON-GARCÍA

As part of the ongoing commitment to advancing research, education, and clinical management of fungal infections, the ECMM Excellence Center Cologne continues to actively engage in multiple international professional societies. These collaborations aim to foster interdisciplinary exchange, harmonize research efforts, and develop comprehensive strategies to address invasive fungal infections (IFI), particularly in hematologic patient populations. This is an overview of the key roles and activities within relevant organizations:

**European Hematology Association (EHA):**
With Prof. Oliver A. Cornely serving as Chair of the Infections in Hematology Specialized Working Group (SWG) and Dr. Jon Salmanton-García as a board member, joint educational initiatives and collaborative research projects are promoted. Notably, the team continues to support large-scale studies such as EPIRESEHA (previously known as EPICOVIDEHA, epidemiology of viral infection in patients with hematological malignancies: A European Haematology Association Survey), EPIAMLINF (Epidemiology of infections in AML: A European Hematology Association Survey), or HemaShiled (infections in hematological patients receiving bispecific antibodies), which investigate epidemiology and outcomes of fungal infections in hematology patients. Through these efforts, the Center aims to strengthen interdisciplinary cooperation between hematologists, infectious disease specialists, and microbiologists.

**German Society for Hematology and Medical Oncology (DGHO) / AGIHO:**
Prof. Dr. Oliver A. Cornely chairs AGIHO, the working group focusing on infections in hematology and oncology, while Dr. Jannik Stemler leads the Young AGIHO, supporting the development of early-career professionals in this field. The current initiatives include harmonizing fungal infection research protocols to improve data comparability and exploring the development of joint position papers to guide clinical practice and research priorities nationally and internationally.

# OUTREACH TO SCIENTIFIC SOCIETIES

**International Society for Human and Animal Mycology (ISHAM):**

In his role as President-Elect of ISHAM, Prof. Dr. Oliver A. Cornely, together with Dr. Jon Salmanton-García's representation of Germany in Young ISHAM, the team is actively driving shared educational programs and strategic planning. A particular focus lies on addressing invasive fungal infections in hematologic patients through targeted initiatives that promote knowledge dissemination and international cooperation.

**Mycoses Study Group Education and Research Consortium (MSGERC):**

Prof. Dr. Oliver Cornely serves as a board member of the MSGERC, a leading international organization dedicated to advancing clinical research, education, and guideline development for invasive fungal diseases. His involvement contributes to global efforts in standardizing diagnostic and therapeutic approaches and fostering international collaboration in the management of fungal infections.

**European Society of Clinical Microbiology and Infectious Diseases (ESCMID) / European Fungal Infection Study Group (EFISG):**

As Chair of EFISG, Dr. Jon Salmanton-García is dedicated to fostering alignment between societies on key IFI-related topics. This includes spearheading guideline development, conducting diagnostic surveys to assess current practices, and organizing educational webinars and joint sessions at upcoming international conferences. These collaborative activities aim to enhance the quality of care and research for fungal infections across Europe and beyond.

Together, these multifaceted engagements reflect the strong dedication to advancing the field of fungal infections in hematology and related disciplines through active participation in international networks and collaborative projects.

# LEVERAGING THE VACCELERATE INFRASTRUCTURE FOR MEDICAL MYCOLOGY RESEARCH

The VACCELERATE Site Network and Volunteer Registry, originally established to accelerate clinical trial readiness across Europe in response to emerging infectious diseases, have proven to be valuable assets for research beyond vaccinology - including in the field of medical mycology.

With 525 clinical trial sites across 57 countries, the VACCELERATE Site Network offers a unique platform to rapidly identify and engage study centers with relevant expertise. This infrastructure can be strategically used to support epidemiological surveys, observational studies, and interventional trials focused on fungal infections, antifungal stewardship, or guideline implementation.
In parallel, the VACCELERATE Volunteer Registry, which includes a large (>107,000 volunteers) and demographically diverse pool of individuals across Europe willing to participate in clinical research, can facilitate efficient recruitment for public health surveys and population-based studies on fungal diseases. This includes, for example, assessing awareness and knowledge about fungal infections or vaccine attitudes related to fungal pathogens in high-risk populations.

The central advantage of using the VACCELERATE infrastructure lies in its established coordination mechanisms, multilingual reach, and data protection-compliant procedures, all of which allow for streamlined study initiation and participant outreach. Moreover, by integrating mycology-related questions or study modules into this existing framework, researchers can minimize duplication of effort, reduce setup time, and access pre-engaged cohorts that meet ethical and regulatory standards.
These capabilities open new opportunities for collaborative, cross-border fungal disease research and help ensure that medical mycology remains an integral part of pandemic preparedness and broader infectious disease strategies.


# PUBLIC OUTREACH

## DR. JANINA LECKLER

Between 2021 and 2025, public outreach has played an increasingly strategic role in communicating the work of the ECMM Excellence Center Cologne and related research initiatives in medical mycology. The efforts have focused on expanding visibility, fostering scientific dialogue, and providing reliable information to both the professional community and the general public.

Social media has served as a cornerstone of this strategy. Prof. Oliver A. Cornely has been actively engaged on LinkedIn throughout the entire period, complemented by a presence on X (formerly Twitter) until early 2025. Since then, activity has transitioned to BlueSky, where updates on clinical research, guidelines, and public health developments continue seamlessly. The FungiScope® registry has maintained independent accounts across the same platforms, providing regular updates on international case data, publications, and project milestones.

The YouTube channel Infectious Diseases in Motion (IDIM) has developed into a key educational outlet, featuring regular video publications on mycology-related topics. Formats such as MedFacts with Prof. Schmitt, guideline explainers, and expert interviews have helped broaden the digital reach. Since 2021, the channel has attracted tens of thousands of views, reflecting sustained interest in clear, accessible scientific communication.

Beyond digital platforms, the ECMM Excellence Center continues to collaborate closely with institutional partners such as CECAD, the University of Cologne, and the University Hospital Cologne, as well as with national and international scientific societies in terms of public outreach.

# PUBLIC OUTREACH

For major scientific releases - such as the *Candida* Global Guideline - the team coordinates the preparation and distribution of official press releases, in cooperation with institutional communication departments and trusted media outlets.

They maintain strong relationships with science and health journalists and regularly respond to media inquiries. The team provides interviews, background commentaries, and expert insights for print, radio, and television coverage, helping to ensure accurate representation of fungal diseases and infectious disease management in the public sphere.

These public outreach efforts contribute to the broader goal of promoting awareness, encouraging guideline-based practice, and strengthening public trust in medical science.

**>150 Presentations**

**78 new videos**

**22 Interviews**

**11 Press Articles**

**7 Press Releases**

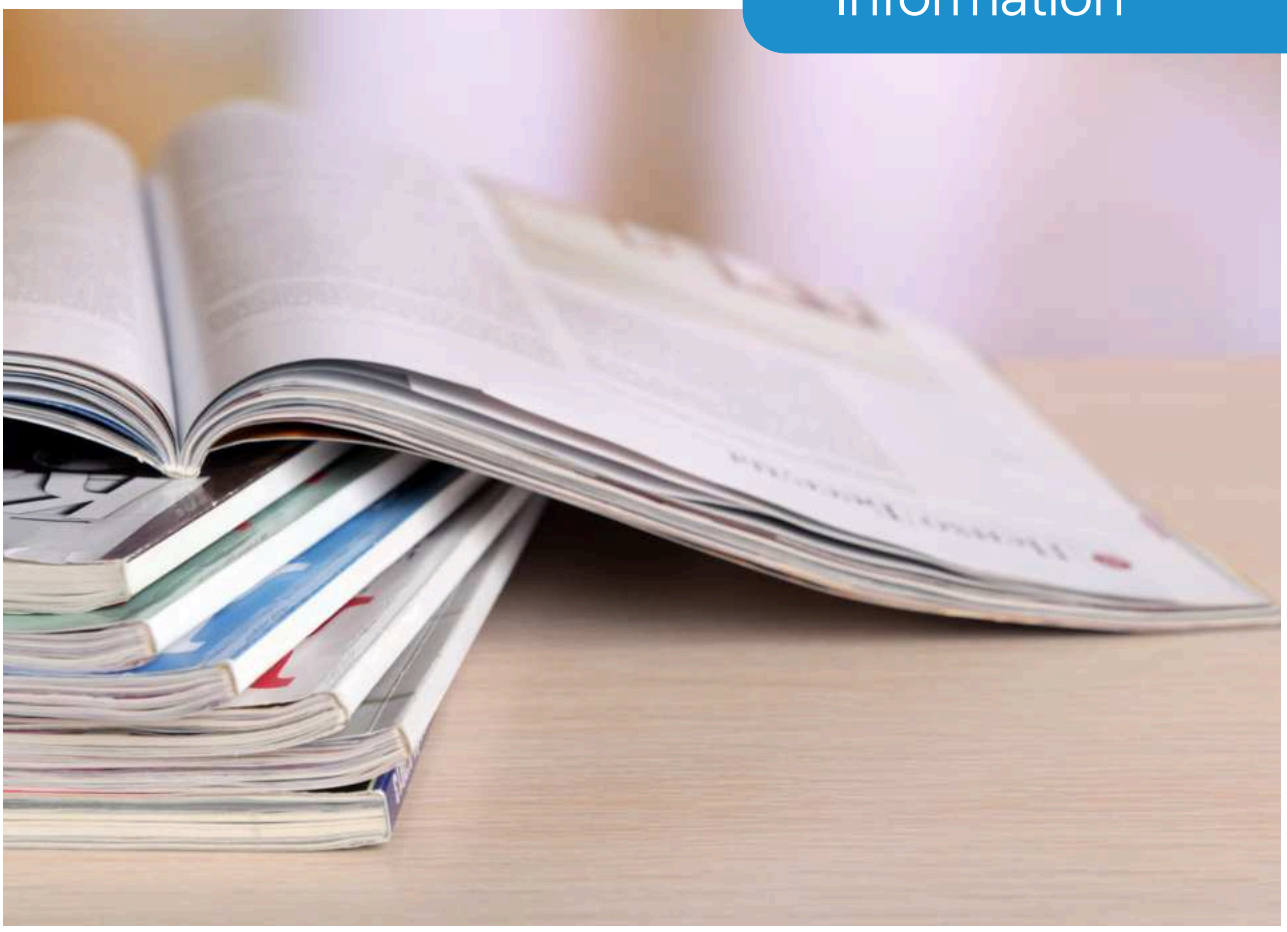
**5 Social Media Channels**

**1 New Website**

Regarding mycological topics in the reporting period.

# SCIENTIFIC OUTPUT, APPENDIX & SUPPORTING MATERIALS

- Curricula Vitae
- Publications
- Contact Information



# CURRICULUM VITAE

## PROF. DR. MED. OLIVER A. CORNELY, MD, FECMM, FAAM, FIDSA, FACP

**PROF. DR. OLIVER A. CORNELY**


CECAD Cluster of Excellence,
University of Cologne
University Hospital of Cologne,
Department I for Internal Medicine

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50937 Cologne
Germany

Phone: +49 221 478-85523

E-mail: oliver.cornely@uk-koeln.de

https://innere1.uk-koeln.de/forschung/arbeitsgruppen-labore/ag-klinische-antiinfektiva-entwicklung-und-epidemiologie-seltener-infektionen/

@olivercornely.bsky.social
@Oliver A. Cornely


**Education, Career History & Professional Experience**

Since 2014 University Professor (W3), Director & Chair Institute of Translational Research, CECAD (Cluster of Excellence in Cellular Stress Responses in Aging-associated Diseases), University of Cologne

Since 2014 Scientific Director, Clinical Trials Center Cologne (CTCC)

2008-2014 Associate Professor

2007-2014 Medical Director, Clinical Trials Center Cologne (CTCC), University of Cologne

2006 Board Certification Infectious Diseases

2005 Board Certification Hematology and Oncology

2001 Board Certification Internal Medicine

1999 Board Certification Emergency Medicine

# CURRICULUM VITAE

## PROF. DR. MED. OLIVER A. CORNELY, MD, FECMM, FAAM, FIDSA, FACP

**Main Research, Scientific Honors and Awards**

2025 Gerald P. Bodey, Sr., Distinguished Professorship Award, Bodey Professorship Committee. MD Anderson Cancer Center

2024 Highly Cited Researcher, Top 1% in Web of Science

2023 Highly Cited Researcher, Top 1% in Web of Science

2022 Highly Cited Researcher, Top 1% in Web of Science

2022 Award of the Johann-Lucas-Schönlein Medal

2021 Highly Cited Researcher, Top 1% in Web of Science

2020 Highly Cited Researcher, Top 1% in Web of Science

2019 Academic Advisor, National Fungal Diseases Surveillance Net (NFD-Net), China

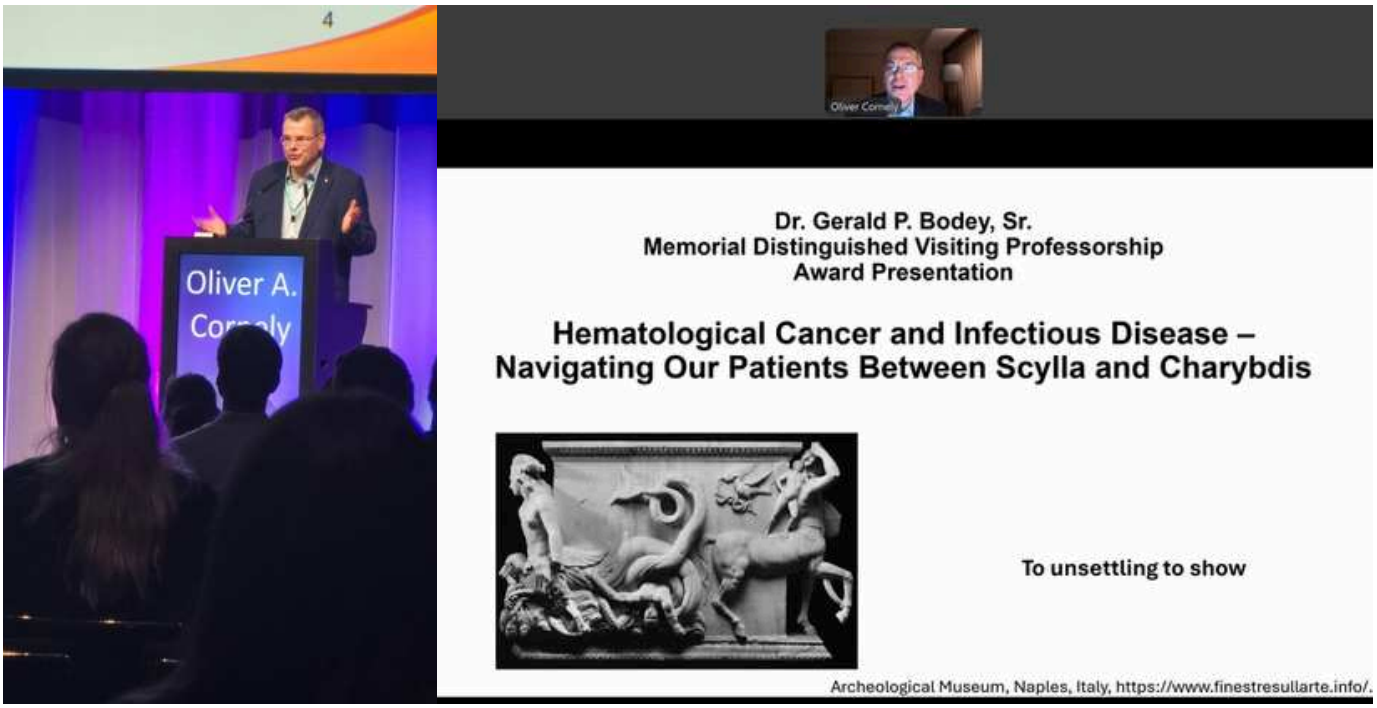
2018 Consultant, WHO Global Antimicrobial Resistance Surveillance System (GLASS) Program for Global Resistance Development

2018 British Medical Association Book Award for the Oxford Textbook of Medical Mycology

2018 Highly Cited Researcher, Top 1% in Web of Science

2014 Prof. Pushpa Talwar Memorial Oration, Postgraduate Institute, Chandigarh, India

2009 Faculty Prize for Outstanding Publication of the Year 2007 – Faculty of Medicine, University of Cologne, Germany



# CURRICULUM VITAE
## DR. MED. ROSANNE SPRUTE, MD

**DR. MED. ROSANNE SPRUTE**

CECAD Cluster of Excellence,
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**Education, Career History & Professional Experience**

2021 Doctoral thesis (MD), University of Cologne, Germany

Since 2019 Resident physician and clinician-scientist, Department I for Internal Medicine, University Hospital Cologne

2019 Medical license (Approbation)

2013-2019 Medical School, University of Cologne, Germany

2010-2013 Bachelor of Science Neurosciences, University of Cologne, Germany

**Main Research, Scientific Honors and Awards**

Since 2025 Co Lead ECMM Excellence Center Cologne

Since 2024 Clinical Leave Stipend by the German Center for Infection Research (DZIF)

2024 Research grant by the Ministry of Culture and Science of the German state NRW

Since 2021 Chair of the Young ECMM

# CURRICULUM VITAE
## DR. MED. JANNIK STEMLER, MD, FECMM


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@jannikstemler.bsky.social


**DR. JANNIK STEMLER**

**Education, Career History & Professional Experience**

2024 Board Certification Emergency Medicine

2023 named Fellow of the European Confederation of Medical Mycology (FECMM)

Since 2019 Resident Internal Medicine, currently undergoing specialty training for Hematology/Oncology and Infectious Diseases

2021 Doctoral thesis

2018 Medical license / approbation

2012-2018 Medical School (University of Cologne, Germany), internships: Medellín, Colombia; Pittsburgh, Pennsylvania, USA; Moshi, Tanzania

**Main Research, Scientific Honors and Awards**

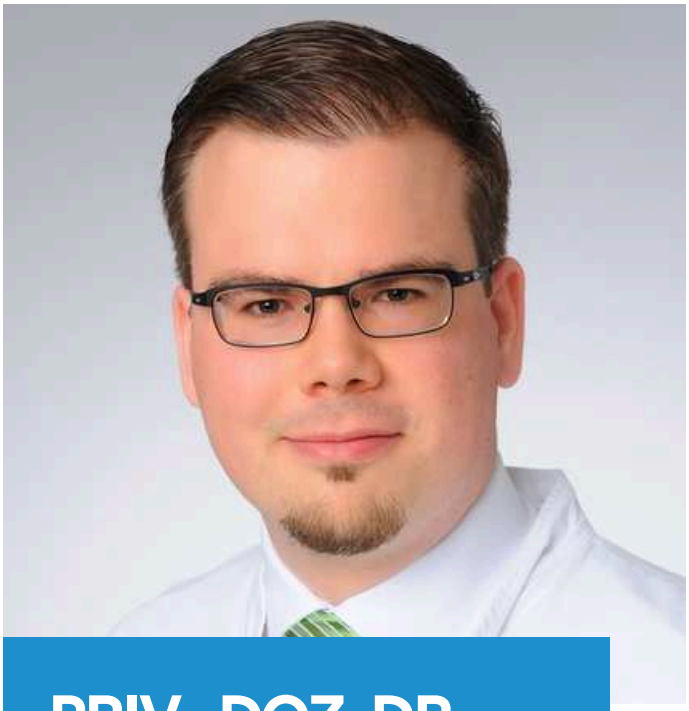
Since 2025 Co Lead Clinical Study Centre II Infectious Diseases

Since 2024 Chair of the Young Infectious Disease Working Party of the German Society for Hematology, Oncology and Infectious Diseases

2019 Medical Mycology Internship, Institut Pasteur Paris

# CURRICULUM VITAE

## PRIV.-DOZ. DR. PHILIPP KÖHLER, MD, FIDSA, FECMM



**PRIV.-DOZ. DR. PHILIPP KÖHLER**

University Hospital of Cologne,
Department I of Internal Medicine

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50937 Cologne
Germany

Phone: +49 221 478 85523

Email: philipp.koehler@uk-koeln.de

**Education, Career History & Professional Experience**

2024 Fellow of the Infectious Diseases Society of America
2024 Head of Clinical Immunology and Study Center for Clinical Immunology
2024 Board Certification Internal Medicine and Rheumatology
2023 Board Certification for specialised genetic counselling
2022 Appointment as senior physician / consultant
2021 Habilitation
2021 Board Certification Infectious Diseases
2020 Board Certification Intensive Care Medicine
2019 Deputy Head of the Cologne Excellence Center of the European Confederation of Medical Mycology
2019 Fellow of the European Confederation of Medical Mycology (FECMM)
2019 Board Certification Internal Medicine and Haematology and Oncology
2018 Board Certification Emergency Medicine
2016 EPALS provider (paediatric advanced life support)
2012 Medical License

**Main Research, Scientific Honors and Awards**

2019 Young Investigator Award 2019 for Clinical Mycology of the German-speaking Mycological Society e. V.
2018 British Medical Association Book Award for the Oxford Textbook of Medical Mycology

# CURRICULUM VITAE
## NICO BEKAAN, MD

NICO BEKAAN

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nico.bekaan.info

**Education, Career History & Professional Experience**

2024 CRM certification in Travel and Tropical Medicine

Since 2023 Resident Internal Medicine, currently undergoing specialty training for Hematology/Oncology and Infectious Diseases

2021 Medical license / approbation

2015-2021 Medical School (University of Cologne, Germany), internships abroad: Santos, São Paulo, Brazil

**Main Research, Scientific Honors and Awards**

2024 Development of an evidence-based platform for creating, collaborating on, and publishing clinical guidelines: MedicalGuideline.org

2023 Conceptualized educational apps for clinical management of Candidemia and Aspergillosis

Since 2023 Member of Clinical Study Centre II Infectious Diseases

# CURRICULUM VITAE

## PROF. DR. JACQUES F. MEIS, MD, PHD, FRCPATH, FIDSA, FAAM, FECMM


Institute of Translational Research, CECAD Excellence Center for Medical Mycology (ECMM), University of Cologne

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Germany

Centre of Expertise in Mycology
Radboudumc/CWZ Nijmegen

The Netherlands

E-mail: jacques.meis@gmail.com


**PROF. DR. JACQUES F. MEIS**

**Education, Career History & Professional Experience**

2022- Visiting professor University Cologne, CECAD, Germany
2021-2026 Visiting professor, University of Parana, Curitiba, Brazil
2000-2023 Clinical Microbiologist, Canisius Wilhelmina Hospital, Nijmegen
1992-2000 Associate professor, Radboudumc, Nijmegen
1992 Board Certification Clinical microbiology (NL)
1988 Medical license / approbation
1980-1986 Medical School (University of Nijmegen, NL)
1980-1984 PhD program parasitology, University of Nijmegen, NL
1973-1980 MSc Biology, Faculty of Science, University of Nijmegen, NL

**Main Research, Scientific Honors and Awards**

Since 1980, >700 publications on clinical microbiology and mycology with 68.000 citations and H-index of 124
2024 Highly Cited Researcher, Top 1% in Web of Science
2023 Highly Cited Researcher, Top 1% in Web of Science
2021 Highly Cited Researcher, Top 1% in Web of Science
2020 Highly Cited Researcher, Top 1% in Web of Science
2019 Highly Cited Researcher, Top 1% in Web of Science

# CURRICULUM VITAE
## DR. ILANA REINHOLD, MD

DR. ILANA REINHOLD

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University Hospital of Cologne,
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E-mail: ilana.reinhold@uk-koeln.de

**Education, Career History & Professional Experience**

Since 2024 Postdoctoral Research Fellow, University Hospital of Cologne, Germany, Prof. Dr. O. Cornely
2023 Senior Physician, Infectious Diseases, Kantonsspital Baden, Switzerland
2023 Swiss Board Certification (FMH) in Infectious Diseases
2021 Medical Thesis (MD) in the Department of Gastroenterology, University Hospital of Zurich
2020-2023 Resident, Department of Infectious Diseases and Hospital Epidemiology, University Hospital of Zurich, Switzerland
2020 Swiss Board Certification (FMH) in Internal Medicine
From April 2018 Residency in: Internal Medicine, Emergency Department, Medical Intensive Care Unit (ICU), Intermediate Care Unit (IMC), Division of Gastroenterology, Nephrology, Senior Physician in: Internal Medicine, IMC, surgical ICU
2017-2019 Resident and Senior Physician, Department of Internal Medicine, University Hospital of Zurich, Switzerland
2014-2016 Resident, Internal Medicine, Cantonal Hospital of Fribourg, Switzerland
2008-2014 Medical Studies, University of Lausanne, Switzerland and University of Heidelberg, Germany

**Main Research, Scientific Honors and Awards**

2025 International Society for Human and Animal Mycology (ISHAM): Working Group Leader for Patient Advocacy
2024 Research Grant Gusyk, Cologne, Germany
2023 Fungal Infection Network of Switzerland (FUNGINOS): Scientific Committee and Working Group for Invasive Aspergillosis in Critically Ill Patients

# CURRICULUM VITAE

## DR. JON SALMANTON-GARCÍA, MSC, MSC, PHD, FECMM

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@salmantongarcia.bsky.social

**Education, Career History & Professional Experience**

2021- Scientific coordinator, EPICOVIDEHA/EPIRESEHA Registry
2021- Scientific coordinator, "IFI diagnostic and treatment capacity mapping in..."
2017-2020 PhD in Health Sciences
2011-2012 MSc in Public Health
2011-2012 MSc in Tropical Diseases
2008-2011 BSc in Physiotherapy

**Main Research, Scientific Honors and Awards**

2025 Prize for the best publication in 2024 from GEMICOMED (Spanish Medical Mycology Group) for the article "Attributable mortality of candidemia – Results from the ECMM *Candida* III multinational European observational cohort study"
2024- Chair, Fungal Infection Study Group (EFISG) of the European Society of Clinical Microbiology and Infectious Diseases (ESCMID)
2024- Board Member, Specialized Working Group (SWG) on Infections in Hematology of the European Hematology Association (EHA)
2024 Prize for the best publication in 2023 from the GEMICOMED "The current state of laboratory mycology and access to antifungal treatment in Europe: a European Confederation of Medical Mycology survey"
2022- Fellow of the European Confederation of Medical Mycology (FECMM)

# KEY PUBLICATIONS 2021–2025

These publications showcase the expertise, dedication, and collaborative spirit of the team at the ECMM Excellence Center in Cologne. Between 2021 and 2025, the researchers contributed to advancing knowledge, shaping best practices, and fostering innovation in their field. Each work reflects not only scientific rigor but also a strong commitment to improving outcomes and expanding mycological capabilities worldwide — ultimately benefiting patients across the globe.

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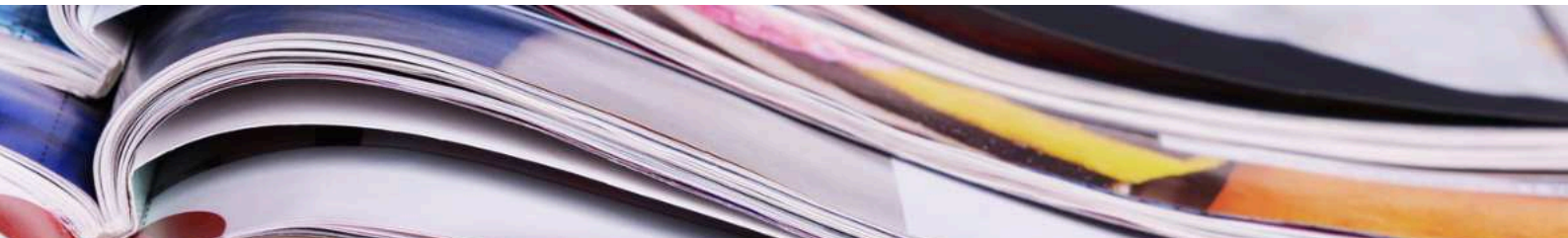

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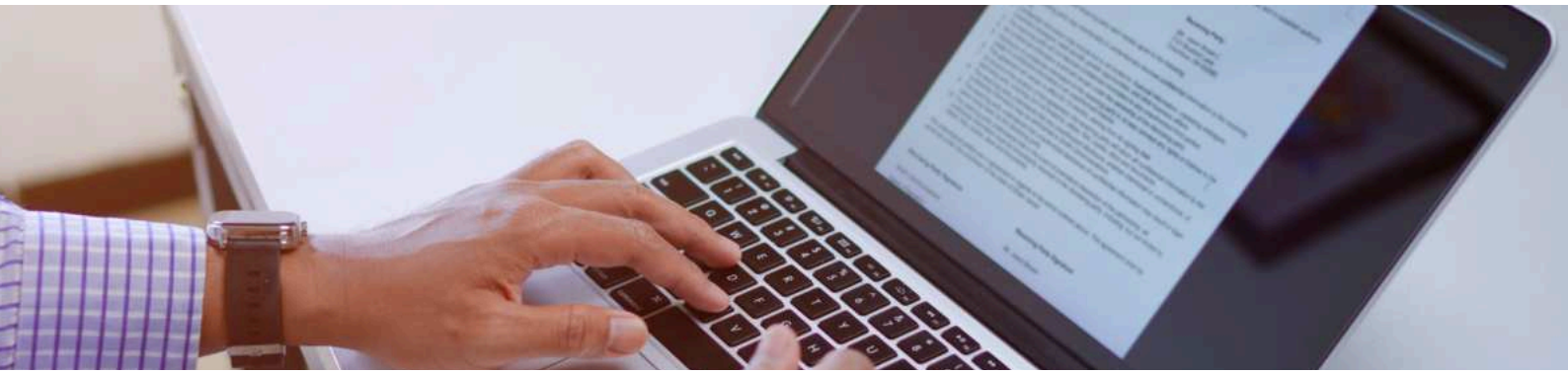

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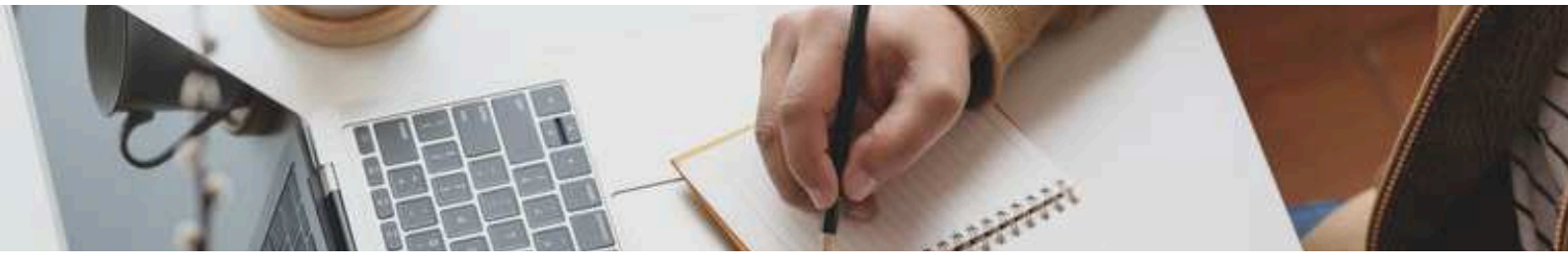

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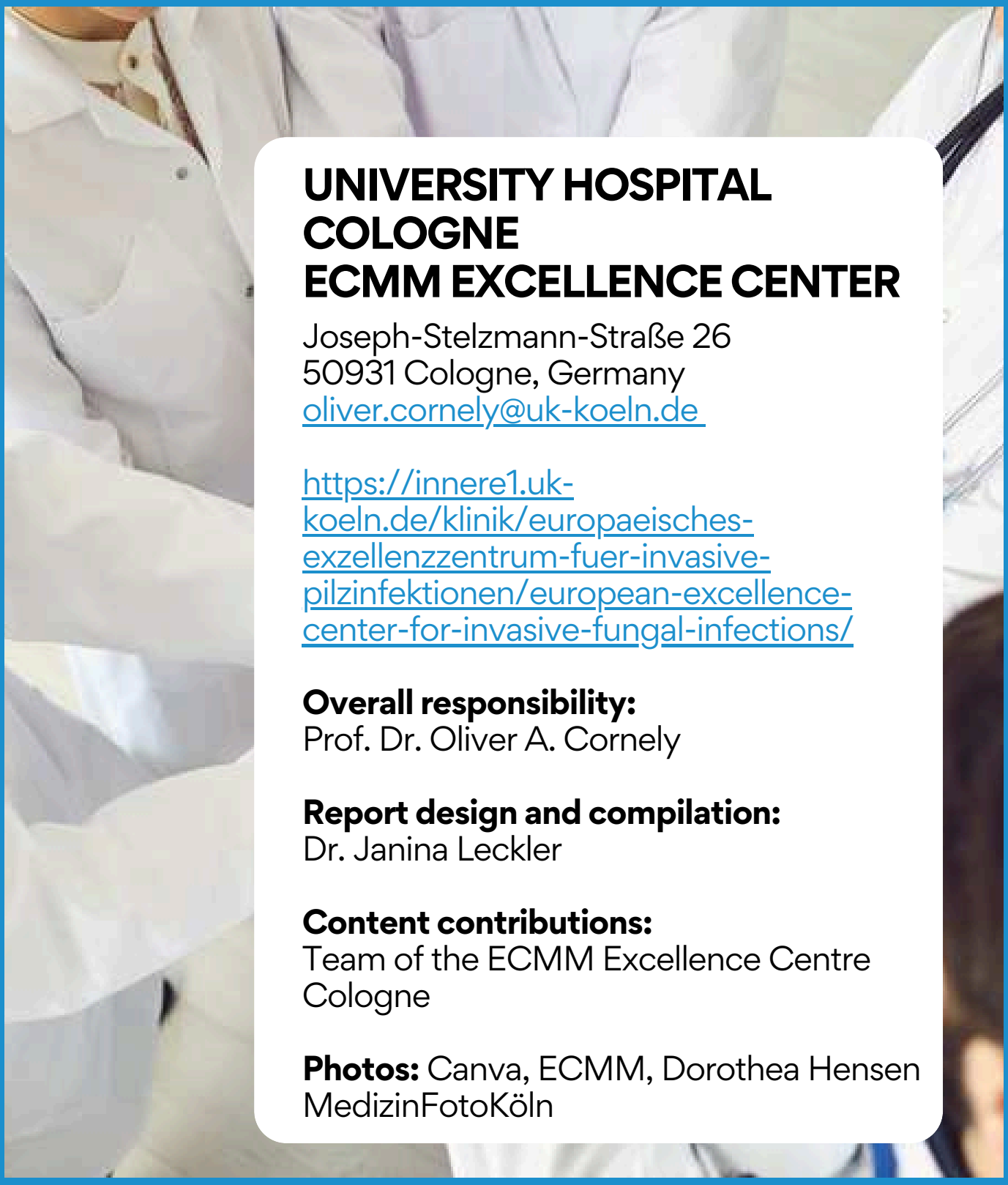


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