Supplementary materials

For *Talaromyces marneffei*, the final PubMed search used (***Talaromyces***[Title/Abstract] OR **marneffei**[Title/Abstract]) combined; for *Coccidioides* spp., the final PubMed search used (**coccidioides**[Title/Abstract]) combined; for *Paracoccidioides* spp., the final PubMed search used (**paracoccidioides**[Title/Abstract] combined, using AND term, with criteria terms including (mortality[MeSH Terms]) OR (morbidity[MeSH Terms]) OR (hospitalisation[MeSH Terms]) OR (disability[All Fields])) OR (drug resistance, fungal[MeSH Terms]) OR (prevention and control[MeSH Subheading]) OR (disease transmission, infectious[MeSH Terms]) OR (diagnostic[Title/Abstract]) OR (antifungal agents[MeSH Terms]) OR (epidemiology[MeSH Terms]) OR (surveillance [Title/Abstract]).

For *Talaromyces marneffei*, the final Web of Science search used: [TI=(**talaromyces**) OR AB=(**talaromyces**) OR TI=(**marneffei**) OR AB=(**marneffei**)] , combined, for *Coccidioides* spp. the final Web of Science search used was [TI=(**coccidioides**) OR AB=(**coccidioides**)]; and for *Paracoccidioides* spp., the final Web of Science search used was [TI=(**paracoccidioides**) OR AB=(**paracoccidioides**), combined, using AND term, with criteria terms each as topic search, including (mortality) OR (case fatality) OR (morbidity) OR (hospitali*ation) OR (disability) OR (drug resistance) OR (prevention and control) OR (disease transmission) OR (diagnostic) OR (antifungal agents) OR (epidemiology) OR (surveillance). Symbol * allows a truncation search for variations of the term (e.g. hospitalisation or hospitalization).

All searches were limited to 1 Jan 2011 to 23 Feb 2021.

Table S1. Risk of Bias Assessment by Domain.

Author	Year	Overall risk	Domains assessed					
			Selection of participants	Confounding variable	Measurement of exposure	Blinding of outcome assessments	Incomplete outcome data	Selective outcome reporting
Talaromyces marneffei								
Chayakulkeeree *et al.*[75]	2017	Unclear	Unclear	Unclear	Unclear	NA	NA	NA
Chen *et al.*[47]	2017	Low	Low	Low	Low	NA	Low	NA
Dong *et al.*[89]	2019	Unclear	Low	Unclear	Low	NA	Low	NA
Fan *et al.*[51]	2017	Unclear	Unclear	Low	Unclear	NA	Low	NA
Guo *et al.*[52]	2019	Unclear	Low	Unclear	Low	NA	Low	NA
Jiang *et al.*[48]	2019	Low	Low	Low	Low	NA	Low	NA
Jiang *et al.*[10]	2019	Low	Low	Low	Low	NA	Low	NA
Lao *et al.*[90]	2019	Low	Low	Low	Low	NA	Low	NA
Lau *et al.*[62]	2017	Unclear	Unclear	Unclear	Low	NA	NA	NA
Le *et al.*[68]	2019	Low	Low	Low	Low	NA	NA	NA
Le *et al.*[49]	2017	Low	Low	Low	Low	Low	Low	Low
Lei *et al.*[63]	2018	Unclear	Unclear	Unclear	Low	NA	NA	NA

Li *et al.*[76]	2021	Low	Low	Low	Low	NA	NA	NA
Ouyang *et al.*[64]	2017	Unclear	Low	Unclear	Low	NA	NA	NA
Pang *et al.*[91]	2018	Low	Low	Low	Low	NA	NA	NA
Qi *et al.*[92]	2016	Low	Low	Low	Low	NA	NA	NA
Qiu *et al.*[93]	2019	Low	Low	Low	Low	NA	Low	NA
Qiu *et al.*[94]	2015	Low	Low	Low	Low	NA	Low	NA
Roohani *et al.*[95]	2018	Unclear	Unclear	Unclear	Low	NA	NA	NA
Sun *et al.*[88]	2021	Low	Low	Low	Low	NA	NA	NA
Sun *et al.*[96]	2020	Low	Low	Low	Low	NA	NA	NA
Wang *et al.*[69]	2015	Low	Low	Low	Low	NA	Low	NA
Xiao *et al.*[97]	2013	Low	Low	Low	Low	NA	NA	NA
Ying *et al.*[50]	2020	Low	Low	Low	Low	NA	Low	NA
Zhang *et al.*[65]	2021	Unclear	Unclear	Unclear	Low	NA	NA	NA
***Coccidioides* species**								
Benedict *et al.*[77]	2019	Low	Low	Low	Low	NA	NA	NA
Blair *et al.*[98]	2014	Unclear	Low	Unclear	Unclear	NA	NA	NA

Charalambous *et al.*[60]	2018	Low	Low	Low	Low	NA	NA	NA
Choi *et al.*[70]	2019	Low	Low	Low	Low	NA	Low	NA
Gaona-Flores *et al.*[99]	2016	Low	Low	Low	Low	NA	NA	NA
Keckich *et al.*[84]	2011	Unclear	Low	Unclear	Unclear	NA	NA	NA
Laws *et al.*[71]	2018	Low	Low	Low	Low	NA	NA	NA
Lee *et al.*[54]	2017	Unclear	Low	Unclear	Low	NA	Low	NA
Luo *et al.*[55]	2017	Low	Low	Low	Low	NA	NA	NA
Mendoza *et al.*[57]	2015	Unclear	Low	Low	Unclear	NA	Low	NA
Naeem *et al.*[56]	2019	Low	Low	Low	Low	NA	Low	Low
Phonphok *et al.*[78]	2018	Unclear	Low	Unclear	Low	NA	Low	NA
Sondermeyer *et al.*[61]	2013	Low	Low	Low	Low	NA	NA	NA
Thompson *et al.*[66]	2017	Unclear	Unclear	Unclear	Low	NA	NA	NA
Webb *et al.*[53]	2018	Low	Low	Low	Low	NA	NA	NA
Wiederhold *et al.*[67]	2018	Unclear	Unclear	Unclear	Low	NA	NA	NA

Wilken *et al.*[59]	2015	Unclear	Low	Low	Unclear	MA	Low	NA
***Paracoccidioides* species**								
de Almeida *et al.*[58]	2017	Unclear	Unclear	Unclear	Low	NA	NA	NA
de Macedo *et al.*[37]	2017	Low	Low	Low	Low	NA	NA	NA
do Valle *et al.*[74]	2017	Unclear	Low	Unclear	Low	NA	NA	NA
Magalhães *et al.*[73]	2014	Unclear	Low	Low	Unclear	NA	NA	NA
Marques *et al.*[72]	2013	Unclear	Unclear	Low	Unclear	NA	NA	NA
Vieira *et al.*[31]	2014	High	Low	Unclear	High	NA	NA	NA

NA: not applicable

Table S2. Inpatient care associated with invasive fungal disease due to Talaromyces marneffei and Coccidioides species.

Author	Year	Study design	Study period	Country	Level of care	Population description	Number of patients (N)	Length of inpatient stay (Days)
Talaromyces marneffei								
Fan *et al.*[51]	2017	RCS SC	2011-2015	China	Tertiary	HIV negative children with *Talaromyces marneffei* infection	10	1-67
Ying *et al.*[50]	2020	RCS SC	2011-2017	China	Tertiary	Adults with HIV-associated talaromycosis	Total: 7575 With talaromycosis: 1214 With complete data: 1079	Median: 27 IQR: 17-36
***Coccidioides* species**								
Charalambous *et al.*[60]	2018	RCS MC	2000-2012	USA	NS	Patients with fungal meningitis*	Total: 1927 With CoM: 315	Baseline: Annual mean (SD): 6.8 (15.7) 1year post-diagnosis:

								Annual mean (SD): 6.2 (12.3) Cumulative: 28.9 5 years post-diagnosis: Annual mean (SD): 3.9 (9.6) Cumulative: 48.1
Luo *et al.*[55]	2017	RCS MC	2005-2012	USA	Various	Adults and children hospitalized with coccidioidomycosis[#]	Total: 30,870 Adults: 29,584 Children: 1,286	2005-2006: 6-7 2011-2012: 4-5 Cumulative LOS: 2006: 49,856 2012: 27,895 Decrease of 44%
Naeem *et al.*[56]	2019	RCS SC	2007-2016	USA	Tertiary	Patients ≤21 years old with	78	Hospitalized: 66/78 (84%)

						extrapulmonary coccidioidomycosis		Median (IQR): 30 (51-129)
Sondermeyer *et al.*[61]	2013	RCS MC	2000-2011	USA	Tertiary	Coccidioidomycosis-associated hospitalizations[$]	Total over time: 25,217 2000: 1,074 2011: 3,197	Median: 6 Total per person LOS: >7 (52%)
Webb *et al.*[53]	2018	RCS MC	2006-2015	USA	Various	Patients with possible, probable or proven IFD^	Total: 3154 patients (3374 episodes) Coccidioidomycosis: 790 (93% of 849 dimorphic fungi)	Admitted to hospital: 47.6% Median (IQR): 7 (4-13)
Wilken *et al.*[59]	2015	Outbreak analysis	2012-2014	USA	CDPH	Construction workers from 2 solar farms in California	Total: 3572 Coccidioidomycosis: 44	Hospitalized: 9 (20%) Median (range): 3 (2-17)

N: number, RCS: retrospective cohort study, SC: single center, HIV: human immunodeficiency, IQR: interquartile ratio, MC: multicenter, USA: United States of America, NS: not stated, CoM: *Coccidioides* meningitis, SD: standard deviation, LOS: length of stay, IFD: invasive fungal disease, CDPH: California Department of Public Health

*Identified from the Truven Health Analytics MarketScan inpatient and outpatient research database

[#]Identified from a national database

[$]Identified from the California Patient Discharge Data Set

^Classified according to the European Organization for the Treatment and Research of Cancer/Mycoses Study Group criteria for the diagnosis of invasive fungal disease[100]

Table S3. Studies reporting on antifungal susceptibilities for *Talaromyces marneffei* and *Coccidioides* species.

Author	Year	Study design	Study period	Country	Level of care	Population description	Fungal pathogen (N)	Specimens (N)
Talaromyces marneffei								
Lau *et al.*[62]	2017	LBS SC	NS	China	NS	Patients with talaromycosis	*Talaromyces marneffei:* (*n* = 56) Yeast form	Blood: (*n* = 48), Lymph node: (*n* = 1), BM: (*n* = 2), Skin biopsy: (*n* = 1), Sputum: (*n* = 1), Pleural: (*n* = 1), BAL: (*n* =2)
Le *et al.*[68]	2019	pK/pD sub-study of a MC RCT	2012-2015	Vietnam	Tertiary	Adults with HIV infection and *Talaromyces marneffei* infection (70% with positive blood cultures)	*Talaromyces marneffei:* (*n* = 54)	Blood: (*n* = 54)
Lei *et al.*[63]	2018	LBS MC	2013-2016	China	Tertiary		*Talaromyces marneffei:* (*n* = 189)	Blood, BM, BAL

							Yeast form	
Ouyang *et al.*[64]	2017	RCS SC	2010-2015	China	Tertiary	Adults and children with disseminated *Talaromyces marneffei* infection and received IV voriconazole as initial antifungal therapy: (n=17)	*Talaromyces marneffei:* (*n* = 17)	Blood: (*n* = 12), BM: (*n* = 2), Skin lesions: (*n* = 2), BAL: (*n* =1)
Zhang *et al.*[65]	2021	LBS MC	NS	China	Tertiary*	NS	*Talaromyces marneffei:* (*n* = 17)	Human samples: Blood: (*n* = 7), Skin lesion: (*n* = 6), Sputum: (*n* = 2), BM: (*n* = 1), Stool: (*n* = 1)
Coccidioides species								
Thompson *et al.*[66]	2017	LBS MC	2001-2015	USA[#]	NS	Clinical *Coccidioides* isolates	Total: 581	NS

Wiederhold *et al.*[67]	2018	Other[$]	NS	USA	NS	Patients with CNS coccidioidomycosis	All Coccidioides isolates: (59) *Coccidioides immitis*: (21) *Coccidioides posadasii* (24)	NS

N: number, LBS: laboratory-based study, SC: single center, NS: not stated, BM: bone marrow, BAL: bronchoalveolar lavage fluid, pK: pharmacokinetic, pD: pharmacodynamic, MC: multicenter, RCT: randomized controlled trial, HIV: human immunodeficiency virus, RCS: retrospective cohort study, USA: United States of America, CNS: central nervous system

*Human samples were from patients attending tertiary referral centers. Also had environmental and animal isolates

[#]Mostly California, Arizona and Texas

[$]*In-vitro* susceptibility testing and *in-vivo* efficacy analysis (experimental mouse model of CNS coccidioidomycosis)

Table S4. Preventative measures for *Talaromyces marneffei*, and *Coccidioides* species.

Author	Year	Study design	Study period	Country	Level of care	Population description	Number of patients (N)	Preventative measures
Talaromyces marneffei								
Guo *et al.*[52]	2019	RCS SC	2013-2018	China	Tertiary	HIV negative children with disseminated talaromycosis	11	Recommended: Increasing awareness and the development of guidelines Misdiagnosed due to non-specific clinical features: 9/11 (82%)
Jiang *et al.*[10]	2019	RCS SC	2012-2105	China	Tertiary	Adults and children with HIV/AIDS and *Talaromyces marneffei* infection	1093	Co-trimoxazole prophylaxis: aHR 0.50 (95% CI 0.35-0.73; P < 0.001) c/w no prophylaxis
Pang *et al.*[91]	2018	RCS SC	2014-2015	China	Tertiary	Adults with HIV and opportunistic infections	Total: 954 With talaromycosis: 5 (0.3%)	Monitoring for talaromycocis in HIV infected patients should occur regardless of whether on ART or not*.
Coccidioides species								
Choi *et al.*[70]	2019	RCS SC	2010-2016	USA	Tertiary	Adults and children taking a TNF-α inhibitor	Total; 1951 Screened: 925/1951 (47.4%)	Screening of patients taking TNF-α inhibitors for asymptomatic CM in endemic areas

							Not screened: 1025/1951 (52.5%)	
Keckich *et al.*[84]	2011	RCS SC	1999-2009	USA	Tertiary	SOT recipients with pre-transplant CM	Total: 100 Reactivation post-transplant: 5	Antifungal prophylaxis for SOT recipients in endemic areas: BT rate of 5%
Laws *et al.*[71]	2018	PCS SC	2016-2017	USA	Community	Workers at a solar power farm, Monterey County, California	Total: 2410 Workers With CM: 9	CDPH issues prevention recommendations: • Dust control • Respiratory protection • Education • Processes for tracking and reporting infections
Mendoza *et al.*[57]	2015	RCS SC	2003-2013	USA	Tertiary	Allogeneic HSCT recipients with active coccidioidomycosis	Total: 426 With CM: 11 (2.6%)	Antifungal prophylaxis: 9/11 (82%) who developed CM were not on antifungal prophylaxis Important for those with a history of CM prior to HSCT
Phonphok *et al.*[78]	2018	SPS SC	2007-2016	USA	Tertiary	Adult kidney transplant recipients who had	Total: 2109	Screening of all candidates for kidney transplantation who are from established and highly endemic areas:

						Coccidioides screening	Positive serology: 86	IgG sero-positivity 3.7% vs. 1.3%; p<0.01 in those from suspected endemic areas
Wilken *et al.*[59]	2015	OA	2012-2014	USA	CDPH	Construction workers from 2 solar farms in California	Total: 3572 CM: 44	CDPH issues prevention recommendations: • Work-place dust control • Criteria for stopping work under certain weather conditions • Respiratory protection • HEPA filters in trucks and earth moving equipment • Clothes coverings • Improve processes for reporting infections

N: number, RCS: retrospective cohort study, SC: single center, HIV: human immunodeficiency virus, AIDS: acquired immunodeficiency virus, aHR: adjusted hazard ratio, CI: confidence interval, c/w: compared with, ART: antiretroviral therapy, TNF-α: tumor necrosis factor-alpha, CM: coccidioidomycosis, USA: United States of America, SOT: solid organ transplant, BT: break-through, PCS: prospective cohort study, CDPH: California Department of Public Health, HSCT: hematopoietic stem cell transplantation, SPS: sero-prevalence survey, OA: outbreak analysis, HEPA: high-efficiency particulate absorbing

*****This study found more cases of talaromycosis in those on antiretroviral therapy than in those not on antiretroviral therapy

Table S5. Annual incidence of *Talaromyces marneffei*, *Coccidioides* species and *Paracoccidioides* species.

Author	Year	Study design	Study period	Country	Level of care	Population description	Number of patients (N)	Incidence
Talaromyces marneffei								
Chayakulkeeree *et al.*[75]	2017	PBS MC	2013	Thailand	Various	Adults and children at risk of serious fungal infection	Total: 1,254,562	0.3/100,000 per year*
Jiang *et al.*[48]	2019	RCS SC	2005-2016	China	Tertiary	Adults and children with HIV/AIDS and *Talaromyces marneffei* infection	Total: 3359 With *Talaromyces marneffei* infection: 159 (4.73%)	Overall: 15.14/1,000 person-year (95% CI 12.84-17.43) On co-trimoxazole: 12.63/1,000 person-year (95% CI 10.36-14.89) Not on co-trimoxazole; 29.59/1,000 person-year (95% CI 21.26-37.93) $P < 0.001$
Li *et al.*[76]	2021	RCS SC	2013-2019	China	Tertiary	Adults and children with pulmonary fungal infections	Total Inpatients: 40504 Outpatients: 219414 Confirmed PFI: Inpatient: 1368	*Talaromyces marneffei*: Range: 0.17/1000 patients to 1.97/1000 (2013-2019)

							Outpatient: 1313 *Talaromyces marneffei*: 42 (2.55%)	
***Coccidioides* species**								
Benedict *et al.*[77]	2019	PBS MC	2011-2017	USA	Various	Adults and children with CM reported to the NNDSS	Total: 93, 371	Annual incidence rate: Between: 2011 and 2017: Range: Arizona: 85.8 to 260.5/100,000 population California: 6.0 to 18.2/100,000 population Nevada, New Mexico, and Utah: 1.9 to 3.5/100,000 population Other states: 0.2 to 0.4/100,000 population
Laws *et al.*[71]	2018	PCS SC	2016-2017	USA	Community	Workers at a solar power farm,	Total: 2410	Annual incidence in 2016:

						Monterey County, California	Workers With CM: 9	Range for 6 counties in California: 5.2-251.7/100,000 persons For nearby worksite (2 solar farms): 1095/100,000 persons
Webb *et al.*[53]	2018	RCS MC	2006-2015	USA	Various	Patients with possible, probable or proven IFI[#]	Total: 3154 patients (3374 episodes) CM: 790 (93% of 849 dimorphic fungi)	Mean annual incidence for dimorphic fungi (93% *Coccidioides* species): 6.9/100,000
Paracoccidioides species								
do Valle *et al.*[74]	2017	OA SC	2008-2014 (Pre) vs. 2015-2016 (Post)	Brazil	Tertiary	Patients with PCM	NS	Pre-highway construction (2008-2014): 1.29 acute PCM cases/1 million persons/year (95% CI 0.74-4.03) Post construction (2015-2016): 8.25 acute PCM cases/1 million persons/year (95% CI 4.18–16.3)

Vieira *et al.*[31]	2014	RCS SC	1997-2012	Brazil	Tertiary	Patients with PCM	2163	Average annual incidence: 94/1,000,000 people municipalities in the State of Rondônia: Pimenteiras do Oeste: 391/1,000,000 people Espigão do Oeste: 374/1,000,000 people Pimenta Bueno: 208/1,000,000 people Primavera de Rondônia: 202/1,000,000 people Porto Velho (Capital): 16/1,000,000 people

N: number, PBS: population based study, MC: multicenter, RCS: retrospective cohort study, SC: single center, HIV: human immunodeficiency virus; AIDS: acquired immunodeficiency virus, CI: confidence interval, USA; United States of America, CM: coccidioidomycosis, NNDSS: National Notifiable Diseases Surveillance System, PCS: prospective cohort study, IFI: invasive fungal disease, OA: outbreak analysis, PCM: paracoccidioidomycosis, NS: not stated

*Estimate

[#]Classified according to the European Organization for the Treatment and Research of Cancer/Mycoses Study Group criteria for the diagnosis of invasive fungal disease[100]

Table S6. Distribution and prevalence of *Talaromyces marneffei*, *Coccidioides* species and *Paracoccidioides* species.

Author	Year	Study design	Study period	Country	Level of care	Population description	Number of patients (N)	Distribution/prevalence
Talaromyces marneffei								
Chayakulkeeree *et al.*[75]	2017	PBS MC	2013	Thailand	Various	Adults and children at risk of serious fungal infection	Total: 1,254,562	Endemic in Thailand. Most prevalent in the north. Prevalence: 2.6% in new AIDS cases
Chen *et al.*[47]	2017	RCS SC	2014-2015	China	Tertiary	Adults with HIV and *Talaromyces marneffei* infection (81.3% disseminated)	48	Prevalence: Mean: 3.2% (95% CI 2.4-4.2%) of yearly admissions among HIV-infected patients from eastern China
Guo *et al.*[52]	2019	RCS SC	2013-2018	China	Tertiary	HIV negative adults and children with disseminated talaromycosis	Total: 147 Pediatric: 11	Prevalence: 7.4%
Jiang *et al.*[48]	2019	RCS SC	2012-2105	China	Tertiary	Adults and children with HIV/AIDS and *Talaromyces marneffei* infection	Total with HIV/AIDS: 6791 With HIV/AIDS and talaromycosis:	Prevalence: 1093/6791 (16.1%)

							1093	
Lao *et al.*[90]	2917	RCS SC	2007-2017	China	Tertiary	Adults with CTD and IFD*	Total: 6911 With IFD: 32 With talaromycosis: 2	Prevalence: 2/32 (6.3%)
Li *et al.*[76]	2021	RCS SC	2013-2019	China	Tertiary	Adults and children with pulmonary fungal infections	Total Inpatients: 40504 Outpatients: 219414 Confirmed PFI: Inpatient: 1368 Outpatient: 1313 *Talaromyces marneffei*: 42	Distribution: Most from Southern China Prevalence: 2.55%
Pang *et al.*[91]	2018	RCS SC	2014-2015	China	Tertiary	Adults with HIV and opportunistic infections	Total: 954 With talaromycosis:	Prevalence: 0.3%

							5	
Qi *et al*.[92]	2016	RSC SC	2009-2014	China	Tertiary	HIV/AIDS patients with BSI	Total with HIV/AIDS: 2242 With BSI: 229 With *Talaromyces marneffei*: 43	Prevalence: 18.8%
Roohani *et al*.[95]	2018	PCS SC	2015-2016	India	Tertiary	Immunocompromised and immunocompetent adults with respiratory fungal pathogens	Total: 150 ICH: 80 Respiratory fungal pathogens: 65 Mold pathogens: 32 *Talaromyces marneffei*: 1	Prevalence: 1/32 (3.1%)
Sun *et al*.[88]	2021	RCS SC	2015-2020	China	Tertiary	Adults with HIV and *Talaromyces marneffei* BSI	87	Prevalence: 0.99% to 2.09% (2015-2019)

								Distribution: SPHCC is a tertiary referral hospital in east China. Cases were scattered throughout the other provinces but, Zhejiang Province with 24 cases and Jiangxi Province with 13 cases had the largest numbers.
Sun *et a*l.[96]	2020	PCS SC	2009-2019	China	Tertiary	Adults and children with cervical lymphadenopathy	Total: 589 With HIV: 453 Without HIV: 136	Talaromyces marneffei: 1.5% In HIV infected patients only Other OI: NTM: 4.5% Cryptococcosis: 1.5%
Wang *et al.*[69]	2015	RLS MC	2004-2011	China	Various	HIV patients with archived serum samples[#]	Total: 8131 samples from 7734 patients Positive for disseminated talaromycosis^: 761 samples	Prevalence^: Overall: 761/813 (9.36%) Peak: 2010 (158/1256 [12.58%])

								Start of surveillance period: 14/271 (5.17%) End of surveillance period: 148/1794 (8.25%)
Xiao *et al.*[97]	2013	RCS SC	2009-2012	China	Tertiary	Adults with HIV and OI and/or malignancy	Total: 834 With Talaromyces marneffei: 12	Prevalence: 1.4% Distribution[&]: Southern and Southwestern China. No cases found in northwestern China
Ying *et al.*[50]	2020	RCS SC	2011-2017	China	Tertiary	HIV-associated talaromycosis	Total: 7575 With talaromycosis: 1214 With complete data: 1079	Prevalence[$]: Mean: 15.7% ±2.4% Distribution: Guangdong Province: 819/1079 (75.9%), Hunan Province: 85/1079 (7.9%), Guangxi Province: 63/1079 (5.9%), Jiangxi Province: 35/1079 (3.2%), Sichuan Province: 33/1079 (3.1%),

								Hubei Province: 19 (.18%)
***Coccidioides* species**								
Benedict *et al.*[77]	2019	PBS MC	2011-2017	USA	Various	Adults and children with CM reported to the NNDSS	Total: 93, 371	Prevalence: Total: 93, 371 (2011-2017) Arizona: 61,480 (64.5%) California: 30,979 (32.5%) Distribution: 26 US States[†] and District of Colombia
Charalambous *et al.*[60]	2018	RCS MC	2000-2012	USA	NS	Patients with fungal meningitis*	Total: 1927 With CoM: 315	Prevalence: 16.4% Distribution in USA: Western region: 64.4 % Southern region: 15.2 % North Central region: 10.2 % Northeast region:

								1.9 %
Phonphok *et al.*[78]	2018	SPS SC	2007-2016	USA	Tertiary	Adult kidney transplant recipients who had Coccidioides screening	Total: 2109 Positive serology: 86	Overall prevalence: *Coccidioides* IgG: 1.4% *Coccidioides* IgM: 2.8% Distribution: No sero-positivity in patients from non-endemic areas Highly endemic counties in California: Kern Areas with established endemicity in California: Fresno, Tulare, Kings, San Luis Obispo
Webb *et al.*[53]	2018	RCS MC	2006-2015	United States	Various	Patients with possible, probable or proven IFI*	Total: 3154 patients (3374 episodes) CM: 790 (93% of 849 dimorphic fungi)	Data extracted from Intermountain Healthcare EDW: >1million cases/year; 2006-2015 Distribution:

								Intermountain Healthcare: 22 hospitals and 180 clinics in Utah and southern Idaho
***Paracoccidioides* species**								
Magalhães *et al.*[73]	2014	CSS	2009	Brazil	Rural area of Alfenas-MG	People who lived in Alfenas-MG	Total: 542	Positive skin test: 46.67% (95% CI 42-52%) Prevalence increased with increasing age: 11-29 years of age: 35.37% vs. 30-49 years of age: 49.56%; $P < 0.01$ Highest for those >50 years of age: 52.66%; p<0.01
Marques *et al.*[72]	2013	SPS	NS	Brazil	Rural areas of Jaraguari County	People who lived in Jaraguari County	Total: 727	Positive skin test 45.8 % (95 % CI 42.1–49.5) Prevalence in the 8 rural settlements of Jaraguari county: Jaraguari Velho:

								23.4%, Primavera: 56.4%, Bonfim: 63.5%, BoaVista: 29.2%, Sete: 32.6%, Vale Verde: 70.3%, Estrela: 61.3%, Furnas do Dionı´sio: 37.6%
Vieria *et al.*[31]	2014	RCS MC	1997-2012	Brazil	Tertiary	Patients with PCM	2163	Rondônia state: 12/14 municipalities (85.7%) with the highest rates were in the southeastern region of the state Urban vs. rural areas: 53.6% (n=1,161) vs. 46.4% (n=1002)

N: number, PBS: population based study, MC: multi-center, AIDS: acquired immunodeficiency syndrome, RCS: retrospective cohort study, SC: single center, HIV: human immunodeficiency virus, CI: confidence interval, CTD: connective tissue disease, IFD: invasive fungal disease, PFI:

pulmonary fungal infection, BSI: bloodstream infection, PCS: prospective cohort study, ICH: immunocompromised host, SPHCC: Shanghai Public Health Clinical Center, OI: opportunistic infection, NTM: non-tuberculous mycobacterium, RLS: retrospective laboratory study, USA: United States of America, CM: coccidioidomycosis, NNDSS: National Notifiable Diseases Surveillance System, US: United States, CoM: *Coccidioides* meningitis, SPS: sero-prevalence study, Ig: immunoglobulin, EDW: electronic data warehouse, CSS: Cross sectional study, NS; not stated, PCM: paracoccidioidomycosis

*Classified according to the European Organization for the Treatment and Research of Cancer/Mycoses Study Group criteria for the diagnosis of invasive fungal disease[100]

[#]Archived at Centre for Disease Control and Prevention (GZCDC)

^Using the double-antibody sandwich ELISA for Mp1p antigen

[&]Likely due to ecological conditions and humidity

[$]HIV admissions

[†]Arizona, Arkansas, California, Delaware, Indiana, Kentucky, Louisiana, Maryland, Michigan, Minnesota, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Mexico, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Dakota, Utah, Washington, Wisconsin, and Wyoming)

Table S7. Trends in infections with *Talaromyces marneffei, Coccidioides* species and *Paracoccidioides* species.

Author	Year	Study design	Study period	Country	Level of care	Population description	Number of patients (N)	Trend*
Li *et al.*[58]	2021	RCS SC	2013-2019	China	Tertiary	Adults and children with PFI	Total Inpatients: 40504 Outpatients: 219414 Confirmed PFI: Inpatient: 1368 Outpatient: 1313 *Talaromyces marneffei*: 42	2013: 0.17/1000, 2014: 0.31/1000, 2015: 0.46/1000, 2016: 0.74/1000, 2017: 0.70/1000, 2018: 1.14/1000, 2019: 1.97/1000 16% year-on-year increase in the incidence. 2013-2019 ($P < 0.001$)
Sun *et al.*[88]	2021	RCS SC	2015-2020	China	Tertiary	Adults with HIV and *Talaromyces marneffei* BSI	Total with HIV: 8621 HIV with *Talaromyces marneffei* BSI: 87	Trends in *Talaromyces marneffei* BSI: 2015: 13 (0.99%), 2019: 18 (1.01%), 2020:

								2.09%
Ying *et al.*[50]	2020	RCS SC	2011-2017	China	Tertiary	HIV-associated talaromycosis	Total: 7575 With talaromycosis: 1214 With complete data: 1079	2011: 125 (15.7%) 2017: 253 (18.8%)
***Coccidioides* species**								
Benedict *et al.*[77]	2019	PBS MC	2011-2017	USA	Various	Adults and children with CM reported to the NNDSS	Total: 93, 371	Overall: Decreased from 2011 (22,634 cases) to 2014 (8,232 cases) Then increased to 2017 (14,364 cases) Variability between states: Arizona: Decreased from 2011 (260.5/100,000)

								to 2013 (90.8/100,000) (-41%) Then stable from 2013-2017 California: Decreased from 2011 (15.7/100,000) to 2014 6.0/100,000 (-27%) Then increased to 2017 (18.2/100,000) (+48%). In other states, relatively stable
Webb *et al.*[53]	2018	RCS MC	2006-2015	USA	Various	Patients with possible, probable or proven IFI[#]	Total: 3154 patients (3374 episodes) CM: 790	For dimorphic fungi overall: 2011: 6.3/100,000 patients, 2012: 7.4/100,000 patients, 2013: 6.6/100,000 patients, 2014: 5.9/100,000

							(93% of 849 dimorphic fungi)	patients, 2015: 8.7/100,000 patients
***Paracoccidioides* species**								
Vieira *et al.*[31]	2014	RCS SC	1997-2012	Brazil	Tertiary	Patients with PCM	2163	Decrease from 2011 to 2012: 44 cases/1,576,455 vs. 38/1,590,011 (-11%) Equivalent to 2.7/100,000 vs. 2.4/100,000 population

N: number, RCS: retrospective cohort study, SC: single center, PFI: pulmonary fungal infection, HIV: human immunodeficiency virus, BSI: bloodstream infection, PBS: population-based surveillance, MC: multi-center, USA: United States of America, NNDSS: National Notifiable Diseases Surveillance System, IFI: invasive fungal infection, CM: coccidioidomycosis, PCM: paracoccidioidomycosis

*Over the duration of the included studies

[#]Classified according to the European Organization for the Treatment and Research of Cancer/Mycoses Study Group criteria for the diagnosis of invasive fungal disease[100]