



# The Burden of Serious Fungal Infection in Israel

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## Background

- Estimates of fungal infection caseloads are required to plan and implement healthcare policies.
- **Healthcare in Israel:**
- Universal healthcare system
- Five tertiary-level medical centers provide specialised medical care .
- **Epidemiological trends:**
- A growing medical tourism industry
- Immigration from Africa
- Increase in the population of patients cared at tertiary hospitals
- Increasing rates of newly diagnosed TB and HIV/AIDS.

## Objectives

- Estimate national fungal infection caseloads in Israel from epidemiological datasets.

## Methods

- We searched national data available from the Israeli ministry of health, WHO and OECD reports, as well as surveillance studies published by us and other authors for relevant disease terms.

## Methods (ctd.)

- Locally collected incidence data were available for candidaemia, HIV/AIDS, solid organ and stem cell transplantation, TB, asthma, COPD and cystic fibrosis.
- When no specific data were available, fungal disease rates were estimated from incidence rates in susceptible populations<sup>1</sup>.
- Generally, disease estimates were conservative as they assumed the lowest incidence rates reported in the literature and focused only on well-defined risk populations.

## Results

- **Israel's population (2011):**
- 7.8 Million
- median age 29 yrs
- 34% ≤18 yrs, 10% ≥65 yrs
- **Population prevalence of chronic respiratory disease:**
- COPD, 312,000, asthma, 375,000, cystic fibrosis, 468.
- Pulmonary tuberculosis: 345/yr.

- **Immunosuppressed population:**
- 6,579 persons with HIV/AIDS, 70% receiving ART
- Acute myelocytic leukemia, 235/yr
- Allogeneic stem cell transplantation, 391/yr
- Renal transplantation 234/yr
- Known or extrapolated burden of serious fungal infections shown in Table 1.

**Table 1: Fungal infection burden estimates for Israel**

Infection	Number of infections per underlying disorder per year					Total burden	Cases /100K
	None	HIV/AIDS	Respiratory	Cancer	ICU		
Oesophageal candidiasis [AI]	--	625	--	--	--	625	8.0
Candidaemia [AI]	--	--	--	--	429	429	5.5
Recurrent vaginal candidiasis (≥4/year) [AI]	130,262	--	--	--	--	130,262	1670
ABPA [P]	--	--	7,945	--	--	7,945	102
SAFS [P]	--	--	12,375	--	--	12,375	159
Chronic pulmonary aspergillosis [P]	--	--	30	--	--	30	0.3
Invasive aspergillosis [AI]	--	--	--	130	--	130	1.6
Mucormycosis [AI]	--	--	--	20	--	20	0.2
Pneumocystis pneumonia [AI]	--	17	--	--	--	17	0.2
						<b>Total burden</b>	<b>151,833</b>
							<b>1946</b>

AI, annual incidence; P, prevalence

## Conclusions

- Vaginal candidiasis and ABPA dominate the burden the fungal infection in Israel, whereas candidaemia and invasive aspergillosis are the most frequent causes of fatal infection.
- These data should help guide empirical treatment choices and preventive actions at the national level.

## References

1. The Fungal Infection Trust. How common are fungal diseases? Fungal Research Trust 20th Anniversary meeting. London June 18th 2011, updated December 2012.

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