



# 8th ADVANCES AGAINST ASPERGILLOSIS

Lisbon, Portugal

1 - 3 February 2018

Lisbon Congress Centre



**Welcome to the  
8<sup>th</sup> Advances Against Aspergillosis  
international conference**



# Introduction and summary of global disease burden

David W. Denning  
National Aspergillosis Centre  
Wythenshawe Hospital  
The University of Manchester

Global Action Fund for Fungal Infections



# 8th ADVANCES AGAINST ASPERGILLOSIS

Lisbon, Portugal

1 - 3 February 2018

Lisbon Congress Centre



- 2004 (San Francisco)
- 2006 (Athens)
- 2008 (Miami)
- 2010 (Rome)
- 2012 (Istanbul)
- 2014 (Madrid)
- 2016 (Manchester)

With over 300 attendees at each meeting



# 8th ADVANCES AGAINST ASPERGILLOSIS

Lisbon, Portugal

1 - 3 February 2018

Lisbon Congress Centre



- 245 papers have been published in 8 Supplements,
- comprising 1,863 pages of full papers,
- 1,223 abstracts from the meetings



# 8th ADVANCES AGAINST ASPERGILLOSIS

Lisbon, Portugal

1 - 3 February 2018

Lisbon Congress Centre



**Welcome to the Mucormycosis community**



# 8th ADVANCES AGAINST ASPERGILLOSIS

Lisbon, Portugal

1 - 3 February 2018

Lisbon Congress Centre



**Tweet**  
**#8thAAA**



# Deaths from fungal infections need to fall

<b>Fungal Infection</b>	<b>TB (2015)</b>	<b>Malaria (2015)</b>
<b>&gt;1,660,000</b>	<b>1,800,000 (200,000 with HIV) ↑</b>	<b>429,000 ↓↓</b>



# 8th ADVANCES AGAINST ASPERGILLOSIS

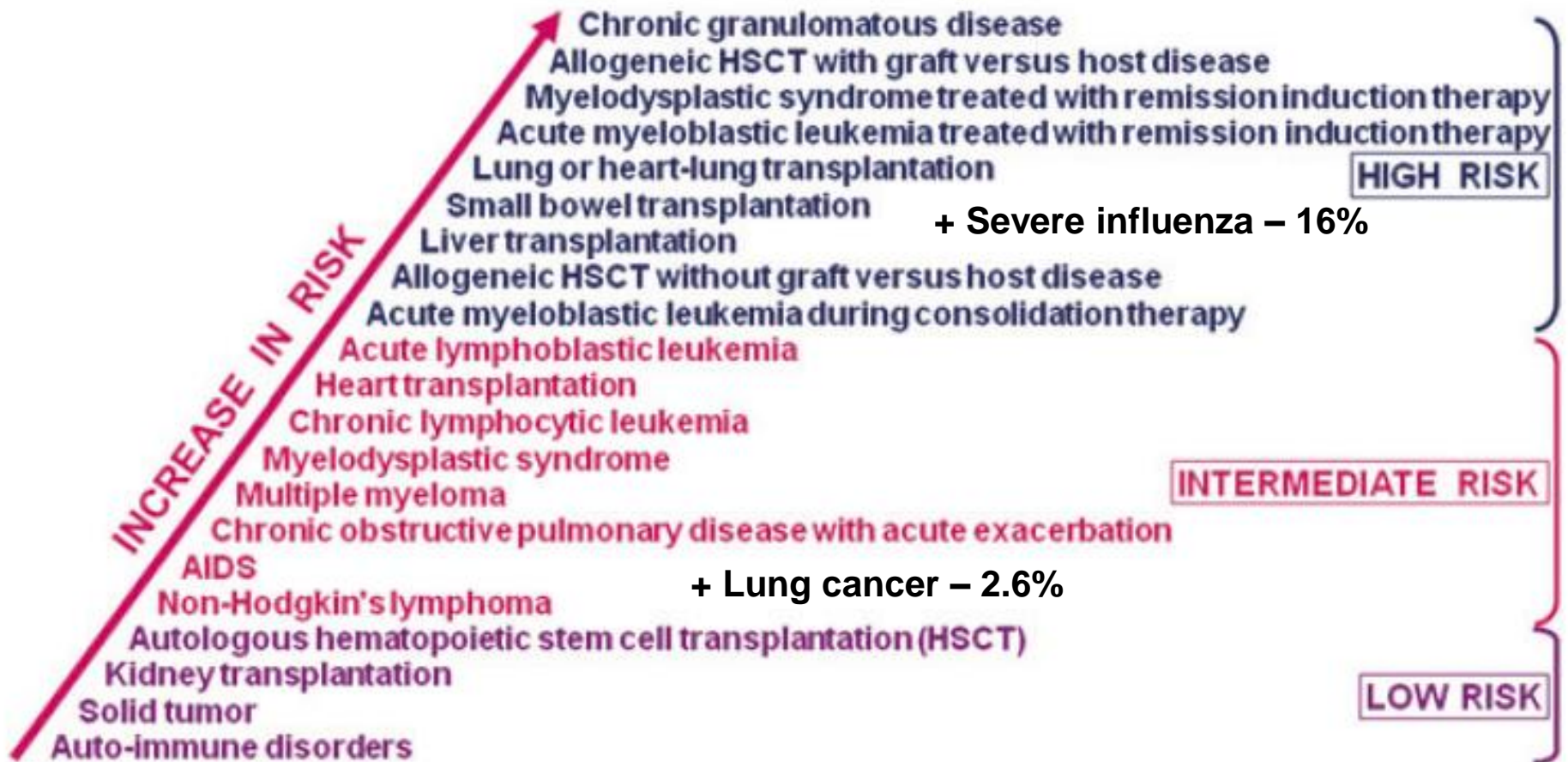
Lisbon, Portugal  
 1 - 3 February 2018  
 Lisbon Congress Centre



Aspergillosis	Invasive	Chronic	Allergic
Global Burden	200,000 – 400,000	1.5 M – 3M	6M – 20M
Untreated Mortality	~100%	~75% / 5 yrs	< 1%
Treated Mortality	30-85%	~45% / 5 yrs	< 1%
Orphan Drug Designation?	Yes	Yes	No (possible for Cystic Fibrosis)
Placebo-Controlled RCT Possible?	No	No	Yes
Surrogate Endpoint	Yes/No	No	No



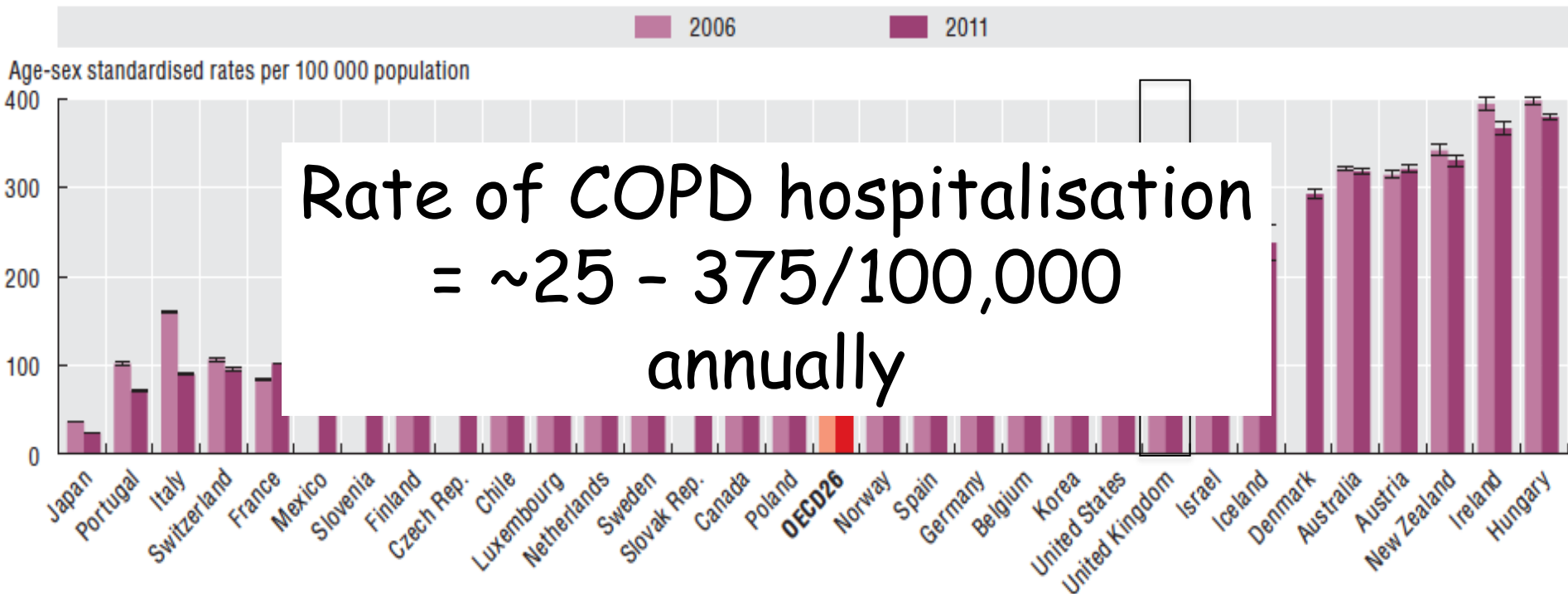
# Risk groups and frequencies of invasive aspergillosis - different test performances





# COPD admissions (rate per 40+ years old)

## 5.1.2. COPD hospital admission in adults, 2006 and 2011 (or nearest year)



OECD Health Statistics 2013, <http://dx.doi.org/10.1787/health-data-en>.



# IA in COPD

ORIGINAL ARTICLE

MYCOLOGY

## Invasive pulmonary aspergillosis in patients with chronic obstructive pulmonary disease: a case control study from China

H. Xu<sup>1</sup>, L. Li<sup>1</sup>, W.-J. Huang<sup>1</sup>, L.-X. Wang<sup>2</sup>, W.-F. Li<sup>1</sup> and W.-F. Yuan<sup>1</sup>

1) Respiratory Medicine and 2) Clinical Laboratory, Guangzhou General Hospital of Guangzhou Military Command, Guangzhou, China

58 of the 298 COPD admissions with a lower respiratory tract sample processed grew *Aspergillus* spp.

**39 (3.9%) had probable IA.**

Only 13% had oral corticosteroids

43% died

Xu H et al. *Clin Microbiol Infect* 2012;18:403.



# COPD in China

32,800,000 patients with COPD  
11,858,100 admissions to hospital

154,155 IA cases in COPD at a 1.3% rate (Spain)  
462,466 IA cases in COPD at a 3.9% rate (China)

199,000 deaths predicted annually in China

Zhu et al. ECCMID 2013; Abstr 3393.  
Guinea et al Clin Microbiol Infect 2010;16:870  
Xu et al, Clin Microbiol Infect 2012;18:403



# Lung cancer

1,824,700 patients with lung cancer each year

If 2.6% develop IA, then:

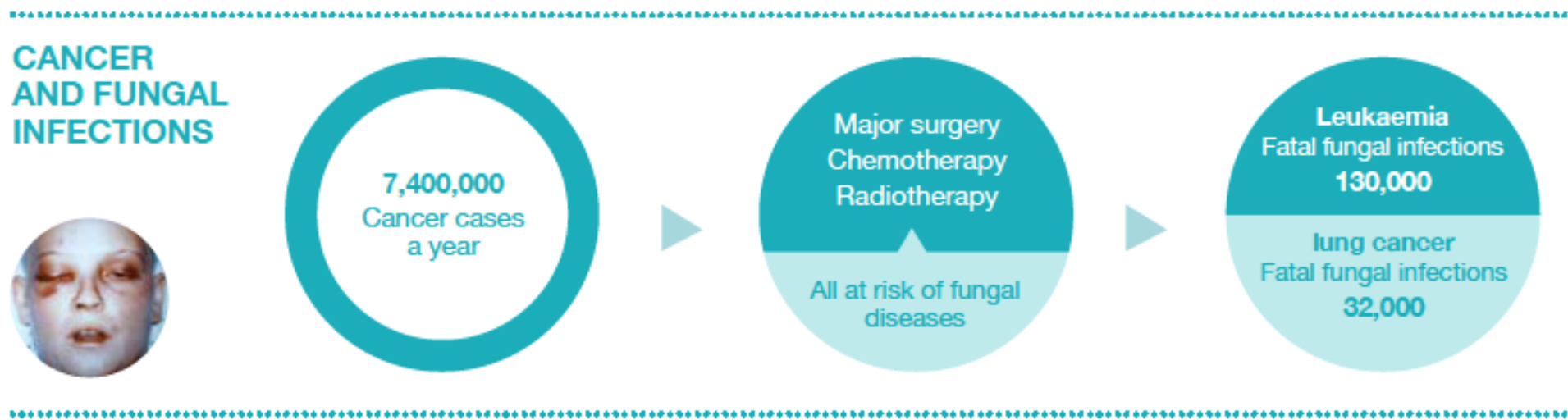
47,500 cases predicted annually

[www.Globocan.org](http://www.Globocan.org)

Yan X et al, Cancer 2009; 115: 5018

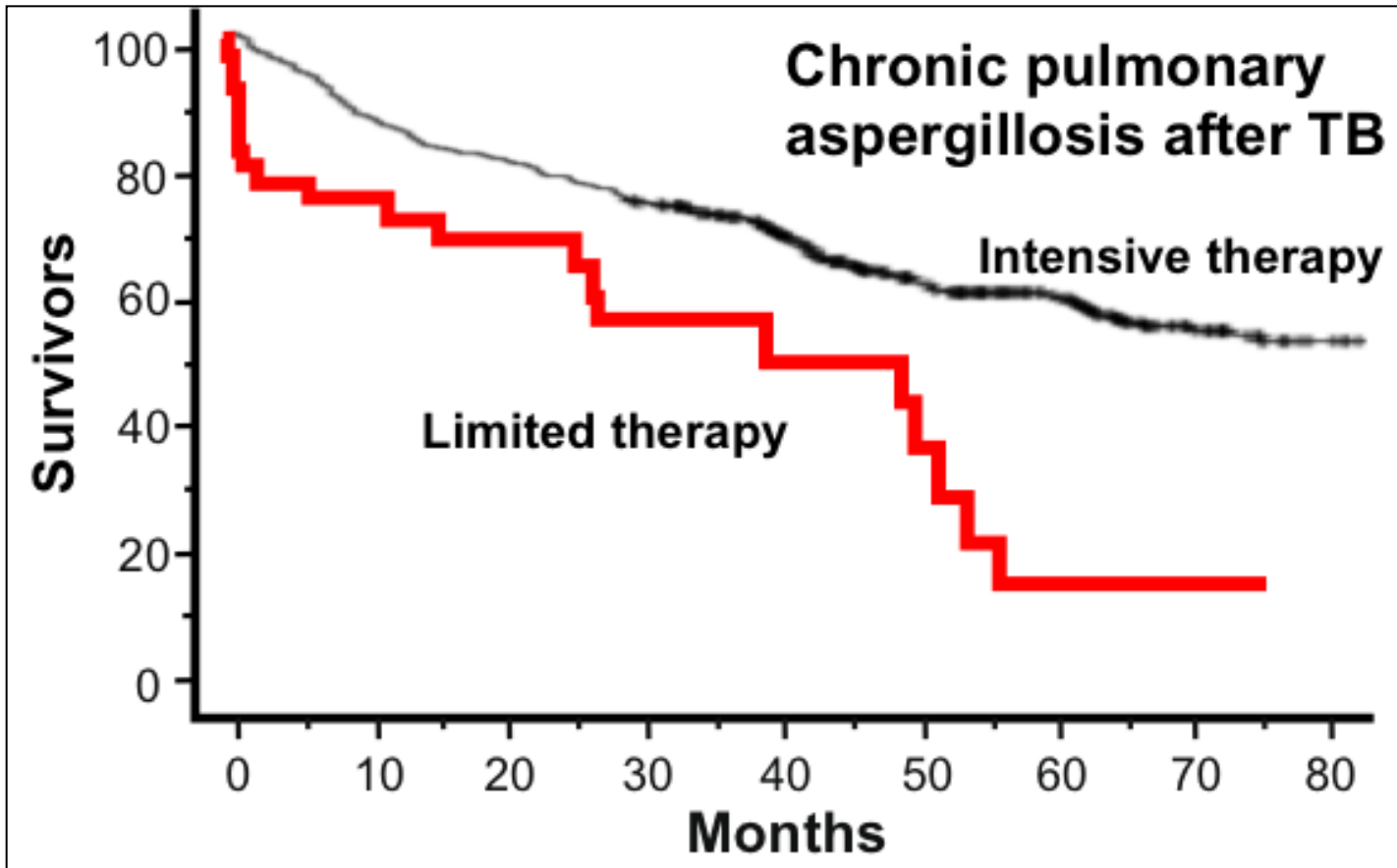


# Invasive aspergillosis complicating cancer and leukaemia





# Prognosis of chronic pulmonary aspergillosis



387 cases  
Mean age 59  
years

42 cases  
Mean age 72  
years

Lowes et al, Eur Resp J 2017 49: 1601062 Ohba et al. *Resp Med* 2012;106:724.



# Fungal disease of the lungs in outside the hospital

~200 million adult asthmatics

Fungal infection	Annual burden	Annual case fatality rate	Estimated deaths
Chronic pulmonary aspergillosis	>3,000,000	~15% mortality in developed world	>450,000
SAFS	>6,500,000	<1% but no good figures	350,000 - 489,000 asthma deaths - ~50% SAFS related
ABPA (asthma)	>4,837,000	<1%	<10,000
ABPA & <i>Aspergillus</i> bronchitis (cystic fibrosis)	>19,000	<1%	<100





# 8th ADVANCES AGAINST ASPERGILLOSIS

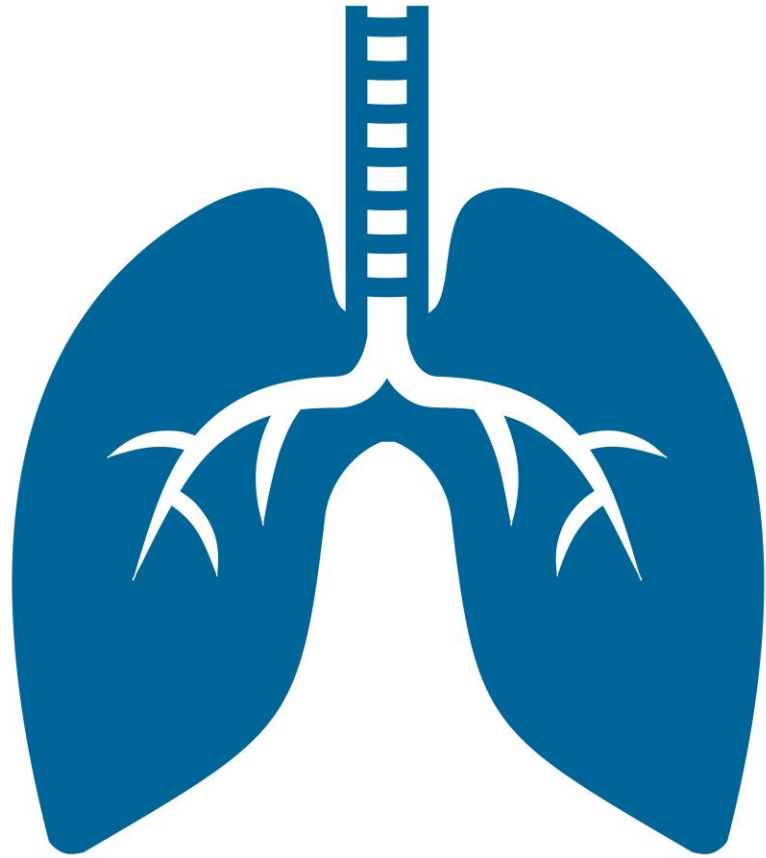
Lisbon, Portugal

1 - 3 February 2018

Lisbon Congress Centre



<b>Form of aspergillosis</b>	<b>Number</b>	<b>Deaths</b>
IA	400,000	300,000
CPA	3,000,000	450,000
ABPA	4,800,000	10,000
SAFS	6,500,000	250,000
<b>Total</b>	<b>14,700,000</b>	<b>1,010,000</b>



**World  
Aspergillosis  
Day**

Feb 1st 2018



# 8th ADVANCES AGAINST ASPERGILLOSIS

Lisbon, Portugal

1 - 3 February 2018

Lisbon Congress Centre



**5 aspirational targets for  
aspergillosis to be achieved by 2030**



# 8th ADVANCES AGAINST ASPERGILLOSIS

Lisbon, Portugal

1 - 3 February 2018

Lisbon Congress Centre



## Aspergillosis Target 1:

Survival in invasive aspergillosis  
increased to 90% (up from under 50%)



# 8th ADVANCES AGAINST ASPERGILLOSIS

Lisbon, Portugal

1 - 3 February 2018

Lisbon Congress Centre



## Aspergillosis Target 2:

Plugging the major gaps in our understanding of the biological, immunological and genetic basis of aspergillosis



# 8th ADVANCES AGAINST ASPERGILLOSIS

Lisbon, Portugal

1 - 3 February 2018

Lisbon Congress Centre



## Aspergillosis Target 3:

### Diagnostics

(most countries, including all of Africa,  
have no diagnostic capability at all)

- New widely available, standardized and clinically validated diagnostics techniques
- New simple screening tests developed



# 8th ADVANCES AGAINST ASPERGILLOSIS

Lisbon, Portugal

1 - 3 February 2018

Lisbon Congress Centre



## Aspergillosis Target 4:

### Treatment

- New antifungal agents licensed for invasive, chronic and allergic aspergillosis and for all age groups (only 3 classes currently available)



# 8th ADVANCES AGAINST ASPERGILLOSIS

Lisbon, Portugal

1 - 3 February 2018

Lisbon Congress Centre



## Aspergillosis Target 5:

**At least one vaccine against aspergillosis in clinical trials or approved (none currently)**



# Other needs:

- Improvement in the public's awareness of fungal diseases and specifically aspergillosis
- Keeping homes free from excessive *Aspergillus* and other moulds related to dampness, which increases the number and severity of asthma episodes
- Stronger evidence base of antifungal therapy allergic aspergillosis to reduce the number and severity of asthma episodes, and probably asthma deaths
- Hospital environments for vulnerable patients free of *Aspergillus*
- Reduction in azole resistance with reduced use of azole fungicides in non-essential crops
- Prevention of a new epidemic of resistance with any new classes of antifungal used for aspergillosis by not allowing such chemical class to be used as a fungicide
- Need for better surveillance and detailed epidemiology data
- Development of immunotherapies as well as vaccines



# 8th ADVANCES AGAINST ASPERGILLOSIS

Lisbon, Portugal

1 - 3 February 2018

Lisbon Congress Centre



**Many thanks to all our sponsors**

**You have made the meeting possible**



# 8th ADVANCES AGAINST ASPERGILLOSIS

Lisbon, Portugal

1 - 3 February 2018

Lisbon Congress Centre



## Enjoy the conference

Please be at your poster on your  
odd or even day, as the SAGE  
squads will be visiting