NTM Epidemiology Around The World

Europe

Charles Haworth

NHS
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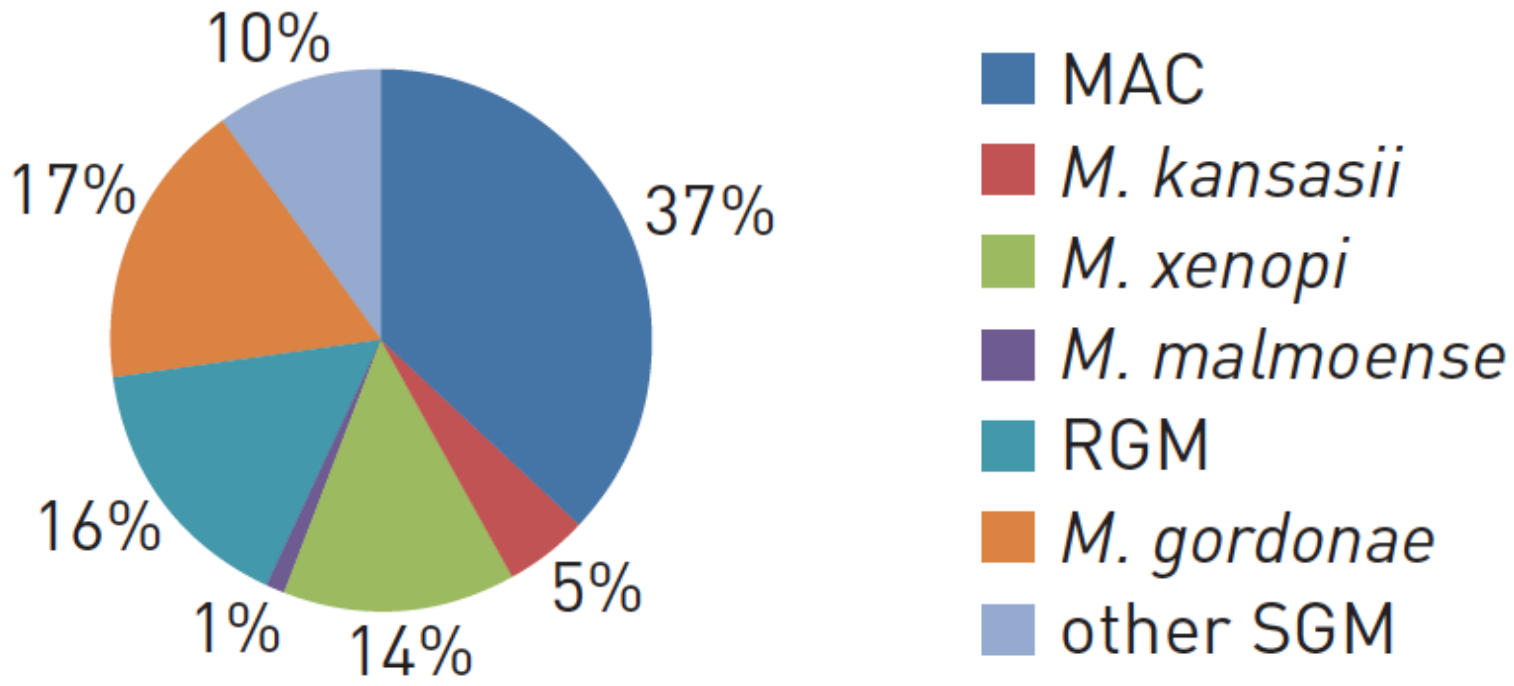
CCLI
Cambridge Centre
for Lung Infection

Europe

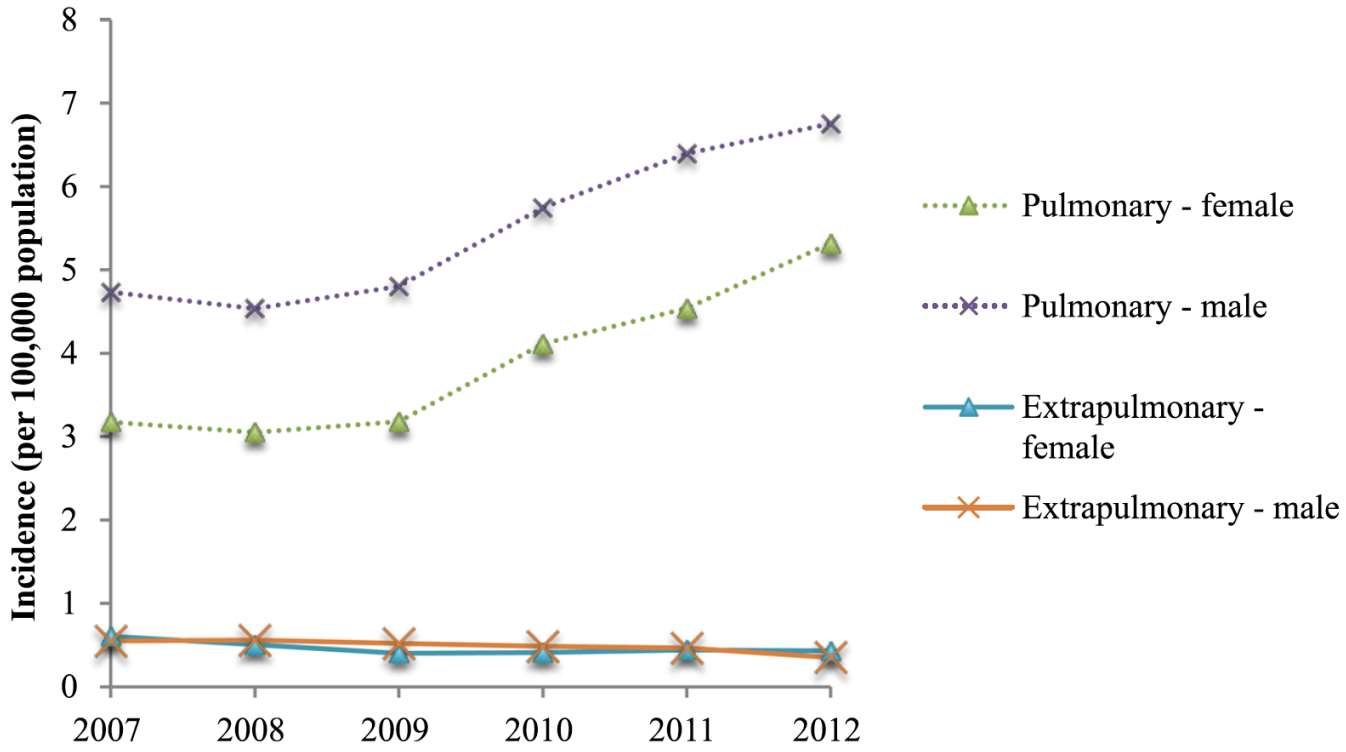
- **NTM isolated from pulmonary samples in 2008**
  - 43 laboratories, 6803 patients



Hoefsloot W Eur Respir J 2013

Europe

- **Incidence of NTM isolation in England, Wales and Northern Ireland 2007 - 2012**



Shah NM BMC Infect Dis 2016

Europe

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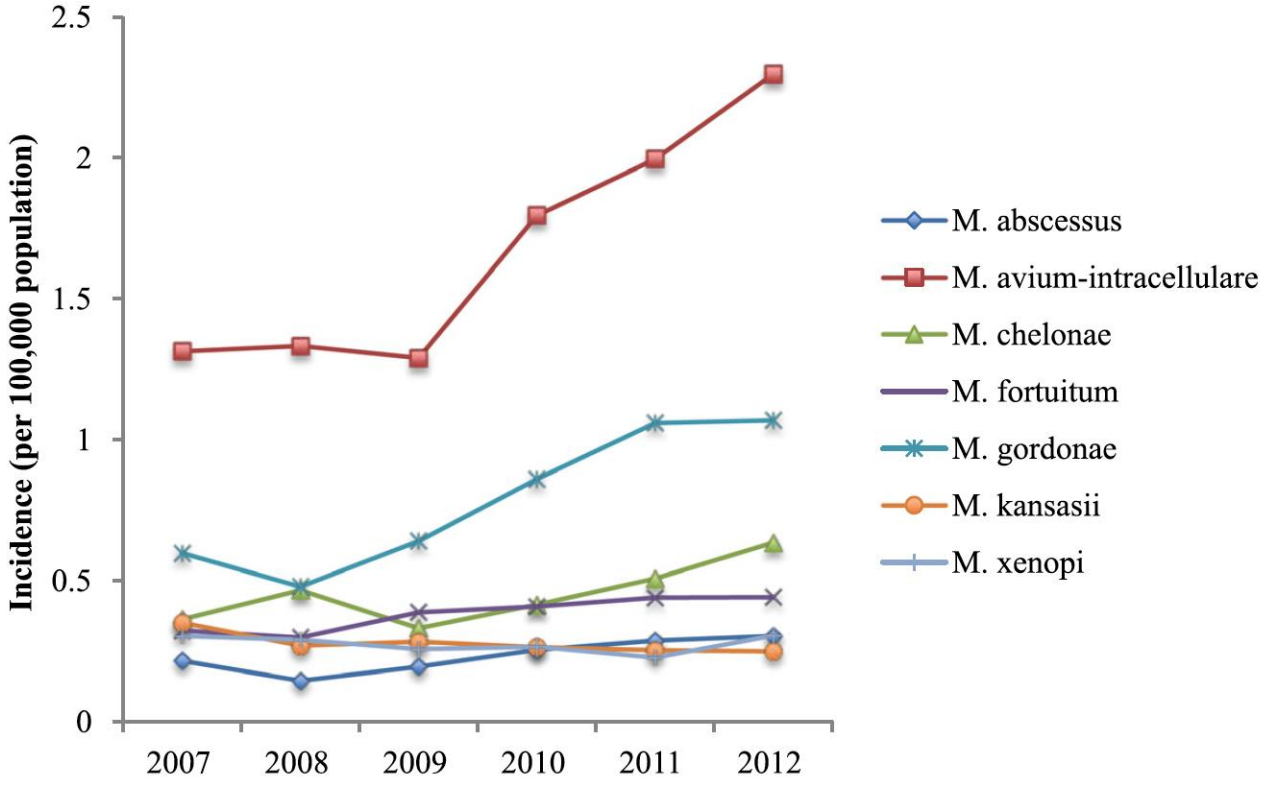


Shah NM BMC Infect Dis 2016

Europe

- **NTM incidence & prognostic factors in Denmark**
  - **Population based study of all adults in Denmark with at least 1 NTM positive pulmonary specimen between 1997 and 2008**
    - Mean annual rate of NTM-PD per 100,000 person years: 1.08 (stable over 12 years)
    - Five year mortality after NTM-PD: 40.1%
    - *M. xenopi* associated with a worse prognosis than MAC
    - Greater comorbidity, increased age and male sex were predictors of death

Andrejak C Am J Respir Crit Care Med 2010

Europe

- **Risk of NTM-PD in Denmark**
  - **Population based case-control study of all adults in Denmark with NTM-PD between 1997 and 2008**
  - Chronic respiratory disease associated with 16.5 x increased risk of NTM-PD
    - Asthma (8 x), COPD (16 x), Bronchiectasis (188 x) and previous TB (178 x)
    - Among people with COPD, the risk of NTM-PD was associated with the use, dose and type of inhaled corticosteroid

Andrejak C Thorax 2013

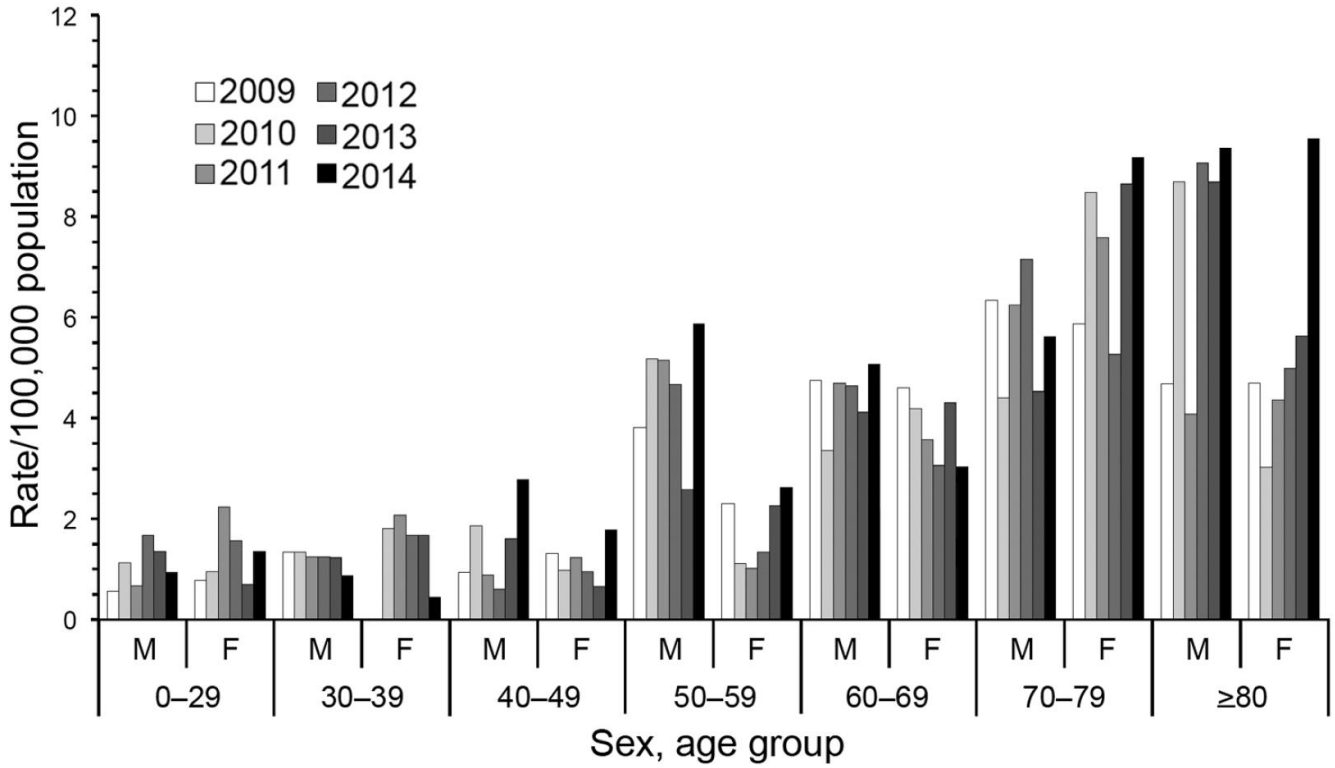
Europe

- **NTM disease managed in UK primary care 2006 – 2016**
  - **Average annual prevalence of NTM disease was 6.38 per 100,000**
  - In those with respiratory disease, 27.7 per 100,000
  - **Major risk factors:**
    - Previous TB
    - Bronchiectasis
    - Lung cancer
    - Immunosuppressive medication
    - Oral corticosteroids

Axon EL Eur J Clin Microbiol Infect Dis 2018 & 2019

Europe

- **Prevalence of NTM-PD in Germany 2009 – 2014**
  - **Increased from 2.3 to 3.3 per 100,000**



Ringhausen FC Emerg Infect Dis 2016

Europe

- **Burden of NTM-PD in Germany**
  - 125 patients with newly diagnosed NTM-PD in 2010/11 were matched with 1250 controls and followed for 39 months
    - Mortality 22% in people with NTM-PD vs 6% in controls
    - Hospitalisation 3 x higher in cases than controls
    - **Mean healthcare expenditure €39,559 (4 x higher than controls)**

Diel R Eur Respir J 2017

Europe

EMBARC
The European Bronchiectasis Registry

The European NTM Registry

ERS EUROPEAN RESPIRATORY SOCIETY every breath counts

iABC inhaled Antibiotics in Bronchiectasis and Cystic Fibrosis

imi Innovative Medicines Initiative

Registry study design

- Prospective observational study
- Patient consent and enrolment as baseline
- Follow-up at treatment initiation, 1 year, treatment stop
- Enrolment in
  - UK
  - France
  - Spain
  - Portugal
  - Serbia
  - Greece
  - Netherlands
  - Belgium

Germany now in set-up

SGRQ and QOL-B questionnaire performed

Completed at baseline and follow-up

Countries must have a validated translation in local language to participate

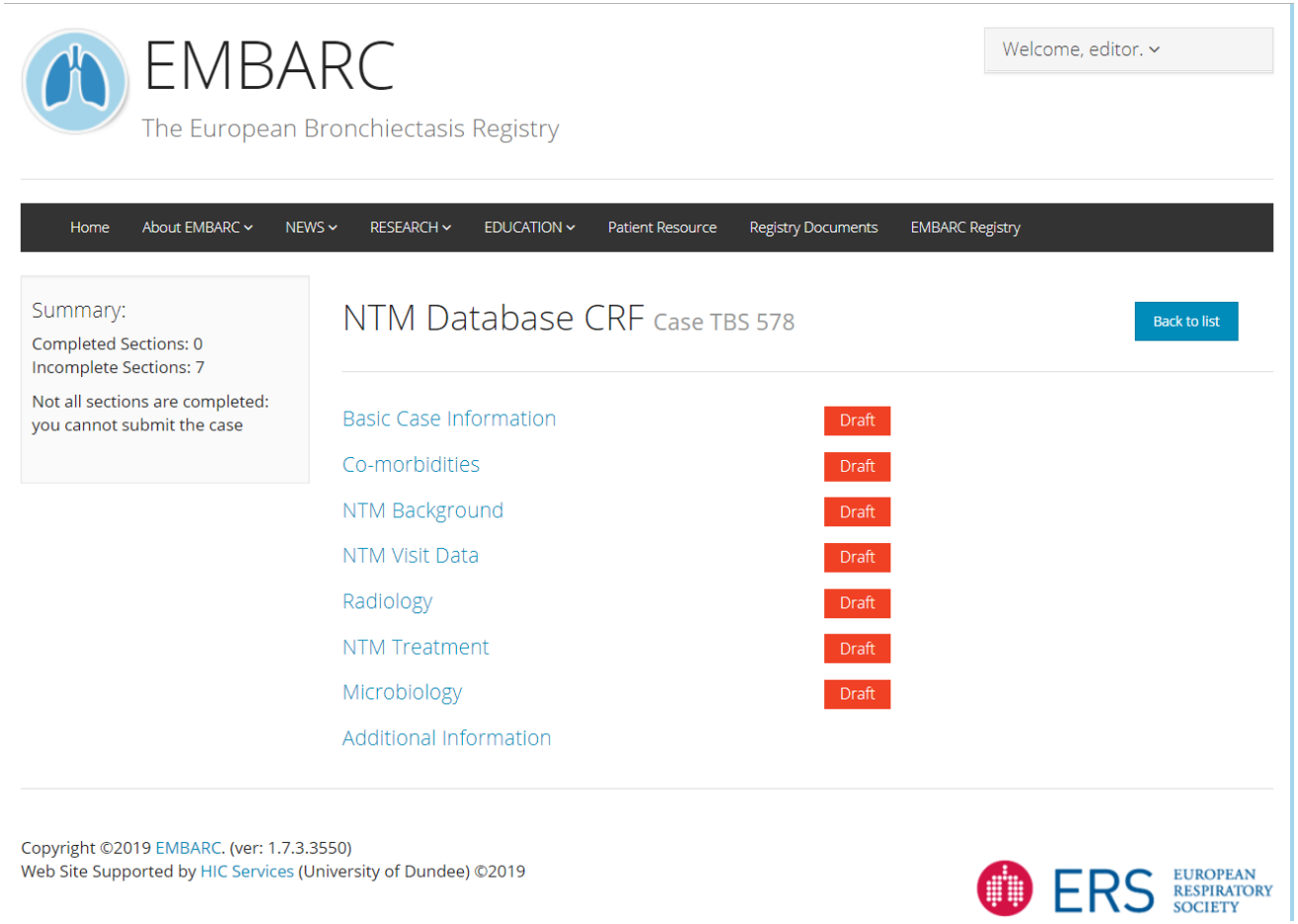
Baseline data collection → Start of treatment* → 1 year follow-up → End of treatment

www.bronchiectasis.eu

Started July 2018

Courtesy of James Chalmers

Europe

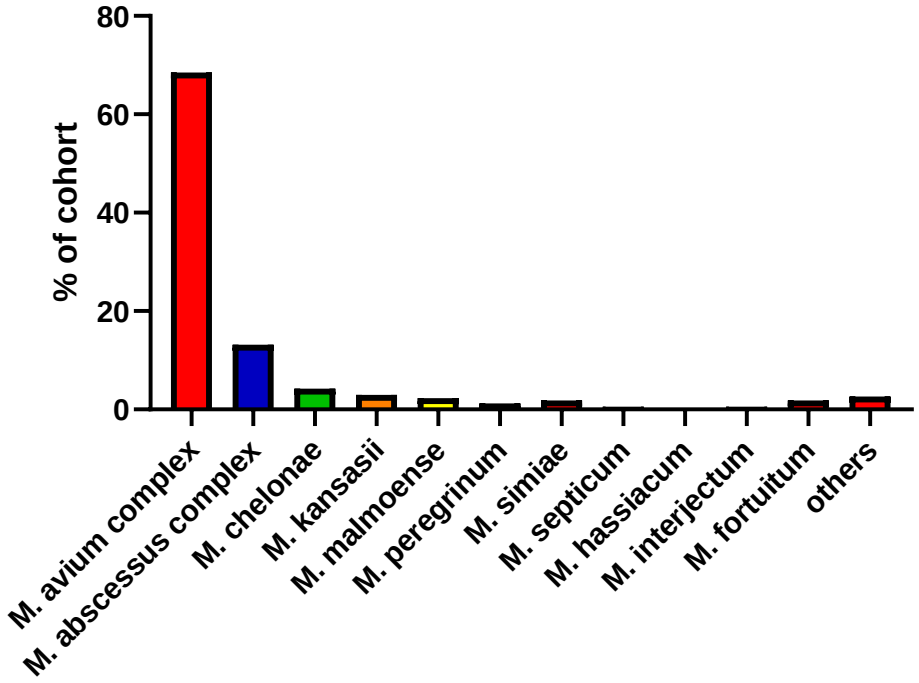


The European NTM Registry

Europe

Data from EMBARC Bronchiectasis and NTM Registry

- **880 people meeting ATS/IDSA criteria for NTM-PD**
  - 69% *M. avium* complex
  - 13% *M. abscessus* complex
  - Others with >5 cases are shown



Demographics

71% female

Average age= 65 years

66% never smoked

The European NTM Registry

Europe

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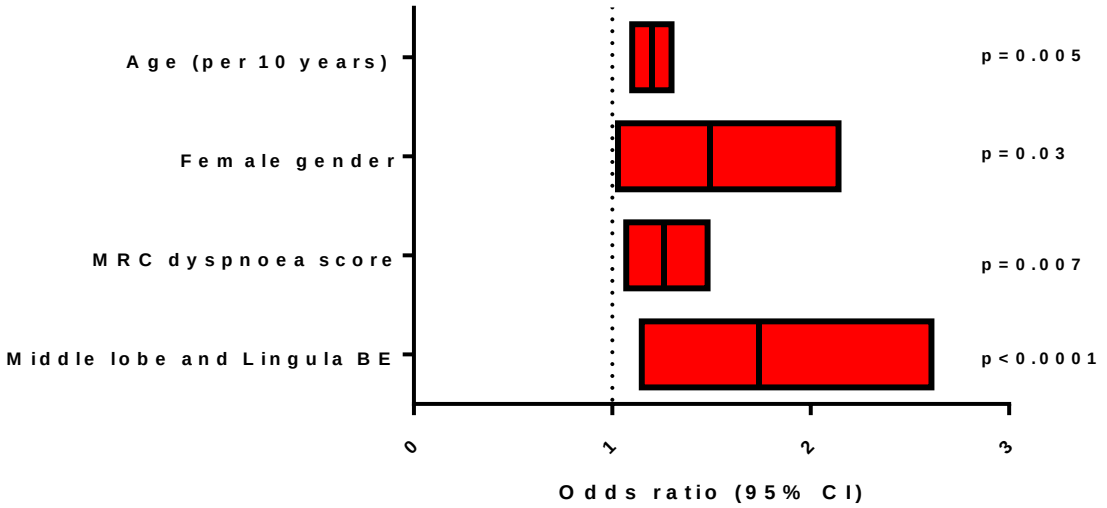
- **People with Bronchiectasis & NTM-PD**
  - Older (mean 67 vs 63 years, p<0.0001)
  - More likely to be female (71% vs 58%, p<0.0001)
  - Lower median BMI (22.7 vs 25.1, p<0.001)
  - More middle lobe & lingula bx (54% vs 40%, p<0.0001)



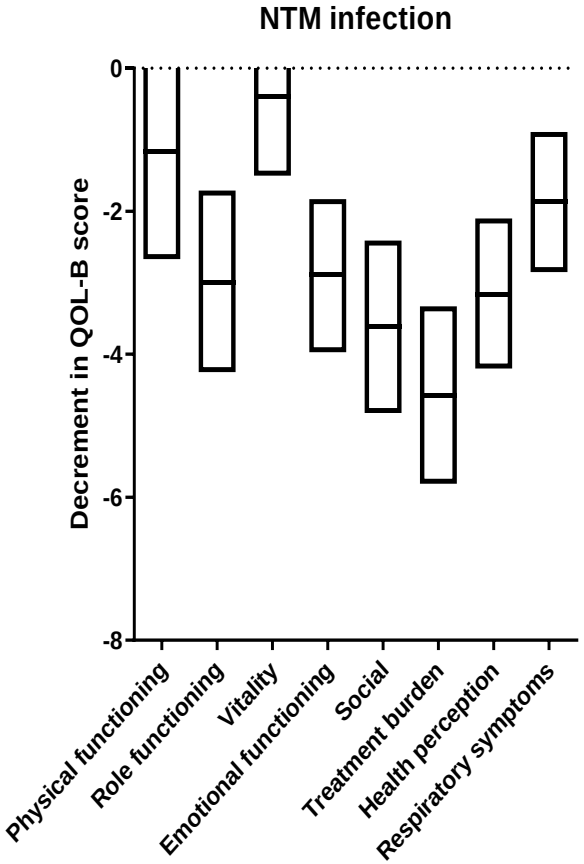
Independent predictors of NTM

The European NTM Registry

Europe

Data from EMBARC Bronchiectasis and NTM Registry

- **NTM-PD is an independent risk factor for worse QoL**



Mean difference with 95% CI

*Analysis performed with N=512 patients

The European NTM Registry

Europe

Data from EMBARC Bronchiectasis and NTM Registry

- **Risk factors for developing NTM-PD in bronchiectasis**
  - 4085 patients with bronchiectasis without NTM-PD at baseline (based on 2 or more negative cultures)
  - Followed for a total of 8327 years (approx 2 years per patient)

The European NTM Registry

Europe

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The European NTM Registry

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  - **58 new ATS/IDSA defined cases of NTM-PD during follow up associated with:**
    - Older age (OR 1.04 95% CI 1.02-1.07, p+0.002)
    - Female sex (OR 1.87 95% CI 1.07-3.29, p=0.03)
    - Inhaled corticosteroids (OR 2.0 95% CI 1.22-3.30, p=0.006)
    - Low BMI (OR 0.93 95% CI 0.89-0.98, p= 0.003)
    - History of ABPA (OR 3.06 95% CI 1.01-9.24, p=0.04)

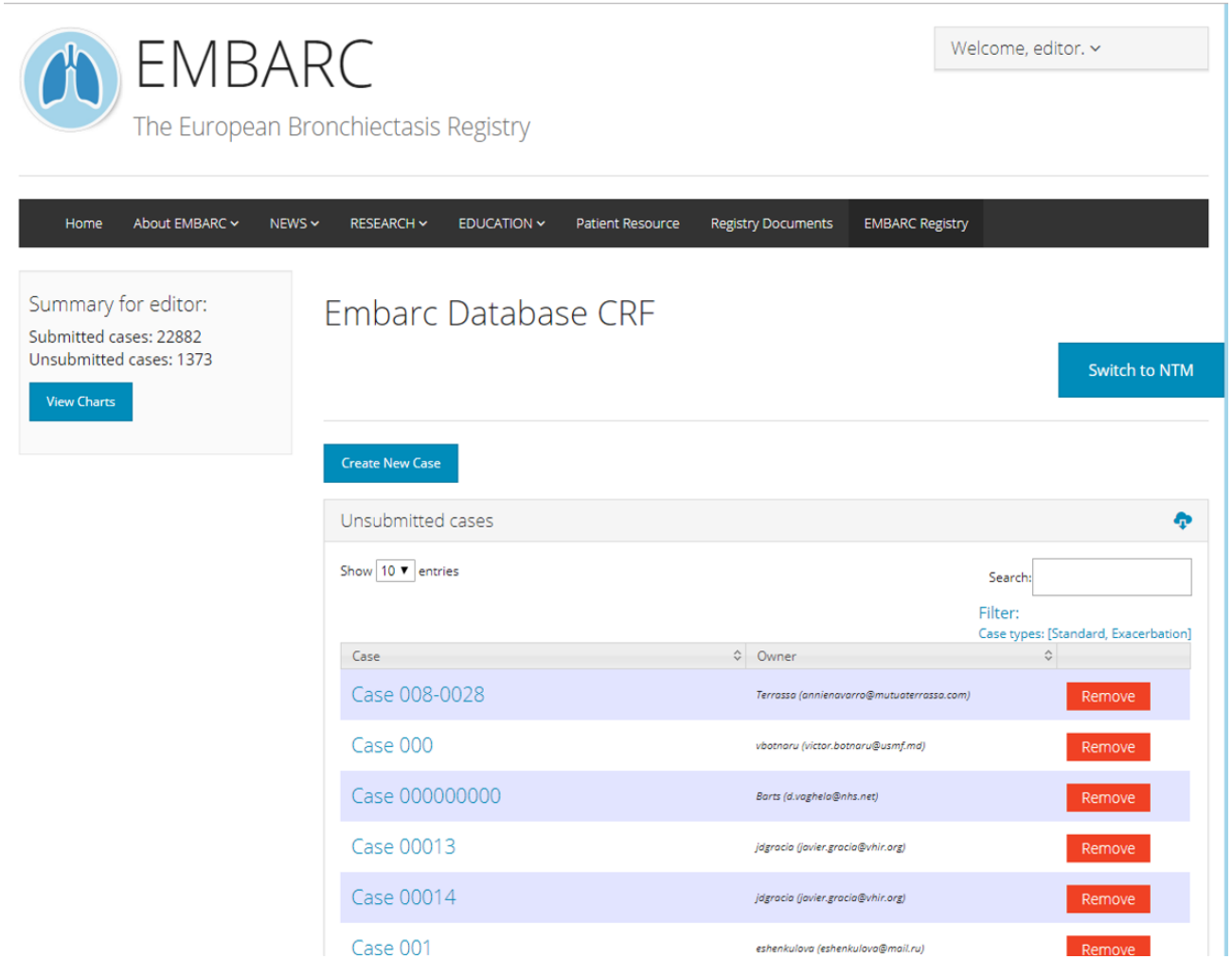
Severity of disease (radiological severity or multidimensional scoring systems) did not predict NTM-PD.

The European NTM Registry

Europe

- **Summary**
  - ***M. avium* complex is the most common cause of NTM-PD**
  - Mean annual incidence rate of NTM-PD is ~ 1.08 per 100,000 person years
  - Annual prevalence of NTM-PD is ~ 3-6/100,000 people and is likely increasing, particularly in the elderly
  - **Approximately 5% of patients with bronchiectasis in the EMBARC registry also have NTM-PD**
    - Risk factors for developing NTM-PD include female sex, older age, low BMI, history of ABPA and use of inhaled corticosteroids

Europe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The European Bronchiectasis Registry
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EDUCATION
Patient Resource
Registry Documents
EMBARC Registry
Summary for editor:
Submitted cases: 22882
Unsubmitted cases: 1373
View Charts
Embarc Database CRF
Switch to NTM
Create New Case
Unsubmitted cases
Show 10 entries
Search:
Filter:
Case types: [Standard, Exacerbation]
Case
Owner
Case 008-0028
Terrassa (annienavarro@mutuaterrassa.com)
Remove
Case 000
vbotnaru (victor.botnaru@usmf.md)
Remove
Case 000000000
Barts (d.vaghela@nhs.net)
Remove
Case 00013
jdgracia (javier.gracia@vhir.org)
Remove
Case 00014
jdgracia (javier.gracia@vhir.org)
Remove
Case 001
eshenkulova (eshenkulova@mail.ru)
Remove