BSAC RESPIRATORY RESISTANCE SURVEILLANCE: A REVIEW OF NON-SUSCEPTIBILITY OVER FIVE SEASONS (2012-2017)
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INTRODUCTION
The British Society for Antimicrobial Chemotherapy (BSAC) Respiratory Resistance Surveillance Programme has monitored the antimicrobial susceptibility of isolates from community-onset (CO-) and hospital-onset (HO-) lower respiratory tract infections (LRTI) since 1999/2000 and 2008/2009, respectively (www.bsacsurv.org)
The latest 5 seasons of data (Oct 2012 - Sept 2017) are presented.

METHODS
Consecutive, non-duplicate isolates (n=11,363, Fig. 1) causing CO-LRTI (community or hospitalised ≤48 hours), or HO-LRTI (hospitalised >48 hours) were collected at 24-40 sites across the UK and Ireland. Each site was asked to collect a set quota (7-20) isolates/species/season.
Duplicates and isolates from patients with cystic fibrosis were excluded.
MICs were determined centrally by BSAC agar dilution. 

RESULTS
• Results are presented for agents/organisms when EUCAST breakpoints are available.
• Rates of non-susceptibility among S. pneumoniae are shown in Fig. 2. The most prevalent pneumococcal serotype was 15A (9%). Serotype 7C, previously uncommon, was prominent (n=85) in 2016/17, largely from one area of England. Three S. pneumoniae isolates, all multi-drug resistant from seasons 2012/13 and 2016/17, were resistant to penicillin, with MICs 4-8mg/L.
• Almost all H. influenzae (92%) and M. catarrhalis (99%) were susceptible to amoxicillin-clavulanate, tetracycline and ciprofloxacin.
• The proportion of MRSA causing HO-LRTI decreased steadily (24%, 2012/13 to 10%, 2016/17).
• Non-susceptibility among Gram-negative isolates is shown in Fig. 3.
• ESBLs were identified in 11% E. coli; 10% Klebsiella and 4% Enterobacter. Two P. aeruginosa isolates had ESBLs (VEB, PER). AmpC β-lactamases were present in 3% E. coli; 0.3% Klebsiella spp., and 19% Enterobacter.
• Colistin resistance was more prevalent (7%) in Acinetobacter spp. (other than A. baumannii) than Pseudomonas spp. (0.8%); rates were 0-1% in E. coli and Klebsiella spp. but 7% in E. cloacae complex (Fig. 3). Resistance does not appear to be caused by the presence of mcr-1.
• Carbapenemases were common in Acinetobacter (OXA-23 (11%), OXA-58 (2%)) but rare in Pseudomonas (VIM (4), NDM (1)) and Enterobacteriaceae [E. coli (OXA-48 (1)), E. cloacae (OXA-48 (2)) and K. pneumoniae (KPC (4), NDM (2), OXA-48 (2)).

CONCLUSIONS
• Rates of non-susceptibility in S. pneumoniae were similar to previous years, though the predominant serotypes have changed.
• H. influenzae and M. catarrhalis remain largely susceptible to existing antimicrobials.
• MRSA continues to decrease in HO-LRTI.
• Carbapenemase-producing Enterobacteriaceae are rare; most are K. pneumoniae.
• Colistin resistance is common in Acinetobacter spp. (other than A. baumannii) and isolates of the E. cloacae complex.

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REFERENCES
2) http://www.eucast.org/clinical_breakpoints/