Indonesia has a high burden of morbidity and mortality from lower respiratory tract infections. Despite this, only a few studies have been conducted in Indonesia to determine the etiologies & the extent of antibiotic resistance.

We conducted a 1-year prospective study of children and adults admitted to Tangerang Hospital with SARI as defined by the WHO in 2012. Data collection included demographic, symptom, episode, and co-morbidity details. Bacterial pathogens were classified into groups of children and adults. Pathogens identified included Staphylococcus aureus, Streptococcus pneumoniae, Pseudomonas aeruginosa, Acinetobacter baumannii, and Klebsiella pneumoniae. 

Results: In children, age 1–14 years, organisms were identified in 20% of 83 cases: 14 bacterial, 6 influenza, and 2 mixed influenza and bacterial infections. The fatality rate in children was 11.8%, all were 1–5 years in age range. Pathogens isolated from 6 fatal cases were: Influenza A/H1N1 pdm (3), S. hemolyticus (2), S. viridans (1) and influenza A/H3N2 (2). The fatality rate was 15.4%, with pathogens identified in 8 cases: 1 influenza A/H3N2, 5 Staphylococcus aureus, 1 Micrococcus spp, and 1 Pseudormonas aeruginosa (1). Antibiotic resistance was identified in 66% of 22 cases. More than half of cases initially received antibiotics for bacterial infections that were later shown to be resistant. Mortality among cases with antibiotic resistance was significantly higher than those with antibiotic sensitivity (36.4% vs 3.2%). Bacterial isolates from pediatric cases had predominantly resistance to Cefixime, Ofloxacin, and Erythromycin, while from the adult cases, resistance to Cefoxitin and Metronidazole were the most common.

Conclusions
1. The most common bacterial pathogens in adults were Pseudomonas aeruginosa, Staphylococcus aureus and Streptococcus pneumoniae and in pediatric were Acinetobacter baumannii, Staphylococcus aureus and Streptococcus pneumoniae
2. Pathogens isolated were significantly different in adult and children. All were associated with antibiotic resistance and the presence of underlying diseases.
3. Influenza contributes 13.8% of SARI cases, including 3 H1N1 fatal cases. The administration of oseltamivir in seasonal influenza is associated with survival.
4. For clinical use, the most sensitive antibiotics in adults were Carbapenem (65%) and Quinolon (31%), while the most sensitive antibiotics in pediatric group were Carbapenem (65%), Amoxicillin (30%) and Cefadroxil (31%)

Acknowledgement
We would like to thank the volunteers for participating in the study: Tria Martin, Setia Eri Kharisma, Pakuan, Artsy Arina, Evie Hendrawan (Tangerang Hospital), Philippe Chovnick, Karen Yuen, and the RHOI (WHO Indonesia) for financial support and INARRSPOND for assisting in data analysis and paper preparation.