

Byung Chul Chun, MD, PhD, Hyunoh Noh, MPH  
Department of Preventive Medicine, Korea University College of Medicine

## BACKGROUND

- Epidemiology of pneumococcal infection is changing rapidly after introduction of pneumococcal conjugate vaccine.
- Pneumonia with empyema and/or bacteremia, febrile bacteremia and meningitis are the commonest manifestations of invasive pneumococcal disease (IPD).
- The incidence of IPD has been unknown for decades in Korea.
- This study was done to estimate the incidence rate of IPD and to describe the change of burden after introduction of the vaccine in Korea.

## METHODS

- Materials:** We retrieved and analyzed the database of 2005 to 2014 from the Korean National Health Insurance Service (NHIS) which provides health insurance to almost all Korean population.
- Definition of IPD:** The hospitalized cases who diagnosed as pneumococcal sepsis (ICD-10 Code A40.3), pneumococcal meningitis (G00.1), pneumococcal pericarditis (I30.1), and pneumococcal arthritis and polyarthritis (M00) were defined as IPD and identified from the database.
- Pneumococcal pneumonia (J13)** was also identified in the same database.
- Statistics:** The population-based incidences of the IPD and pneumonia per 100,000 were calculated. The hospital day and medical cost also retrieved by IPD and age group.

## RESULTS

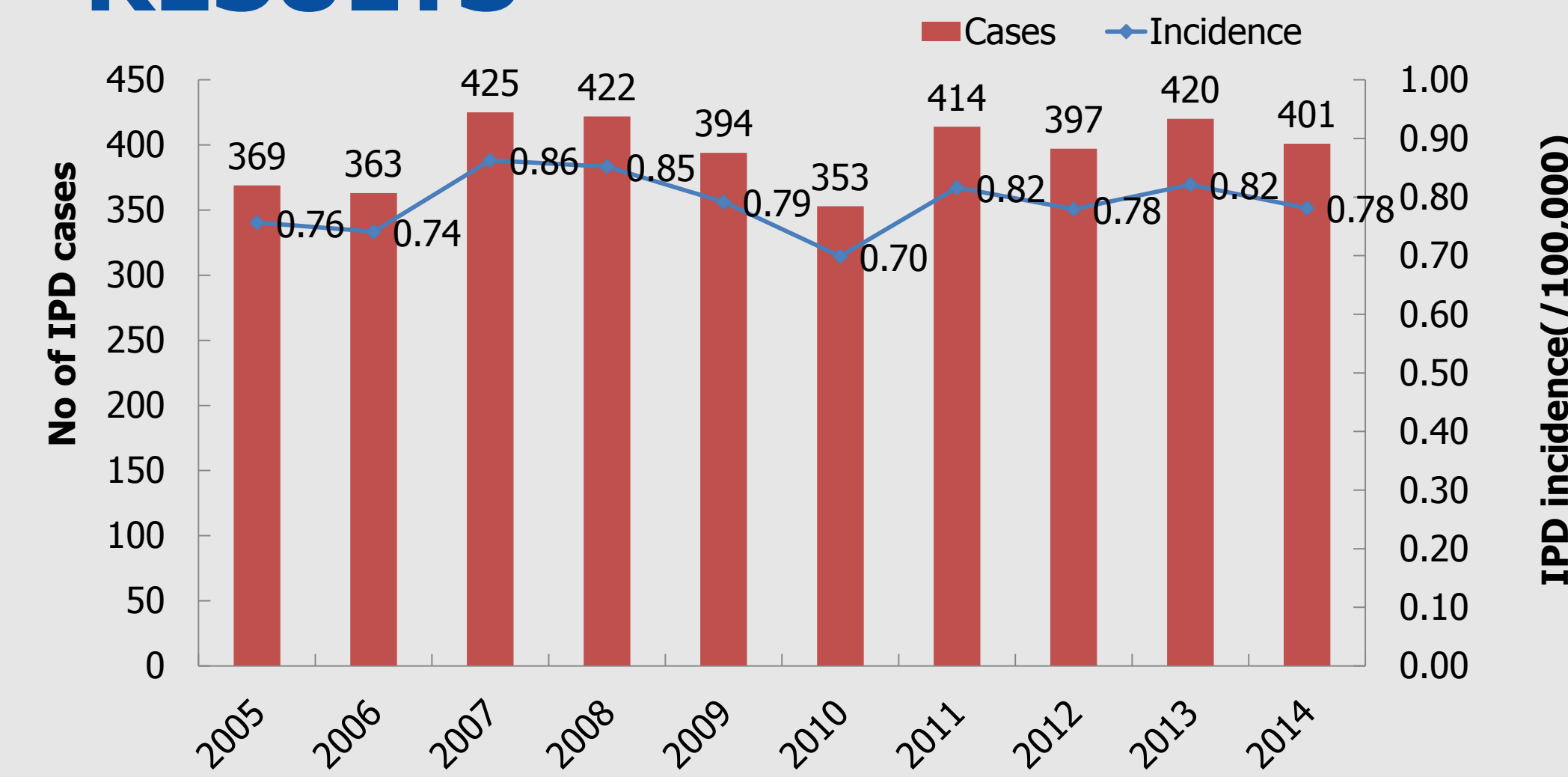


Fig 1. IPD incidences from 2005 to 2014

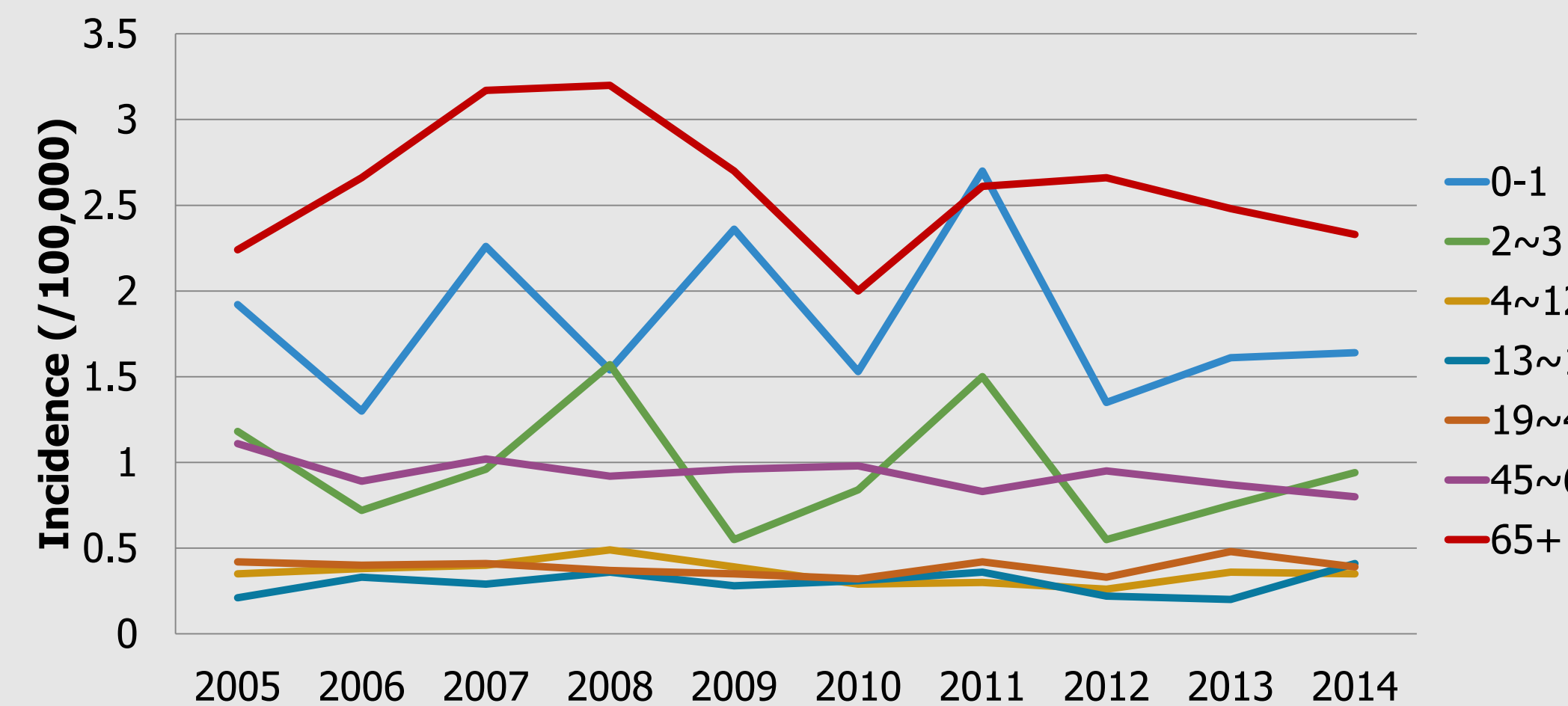


Fig 2. IPD incidences from 2005 to 2014 by age-groups

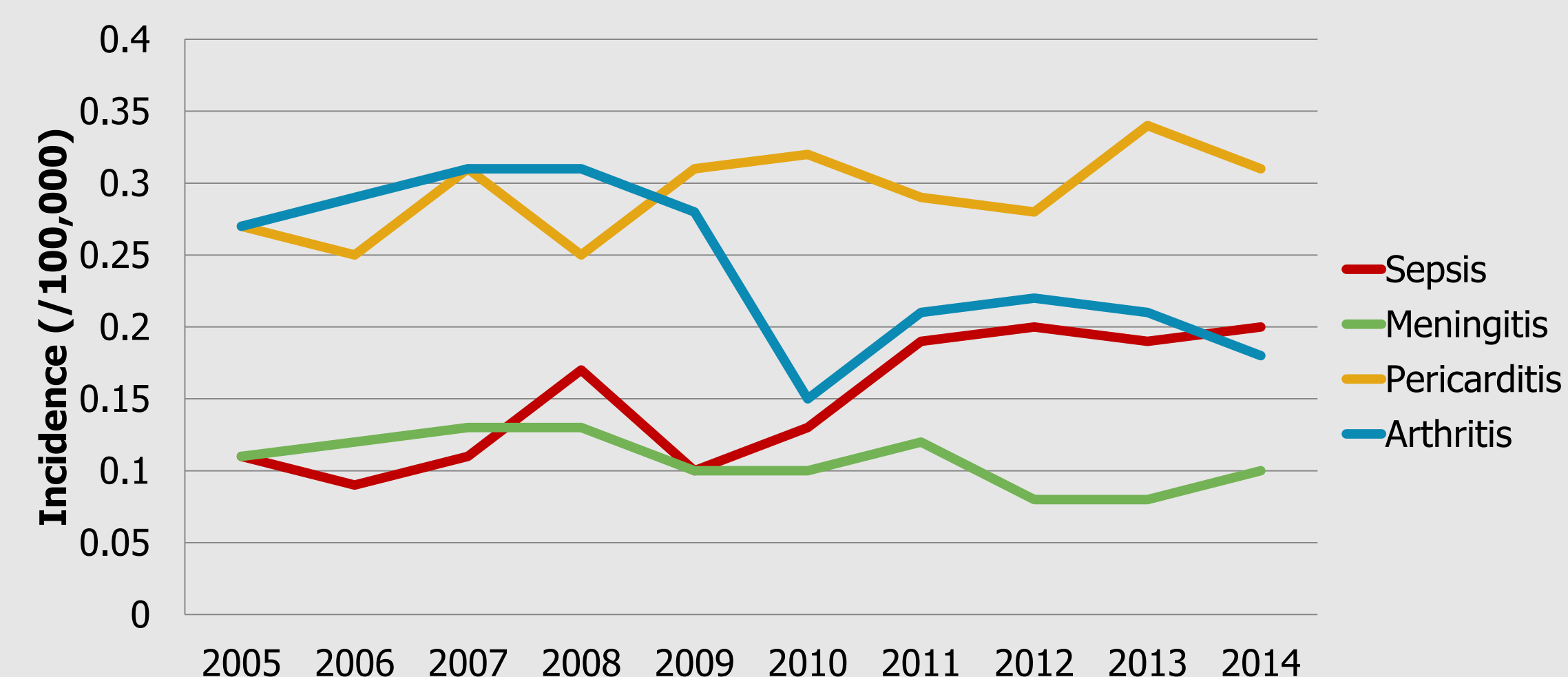


Fig 3. Change of IPD incidences from 2005 to 2014 by Dz

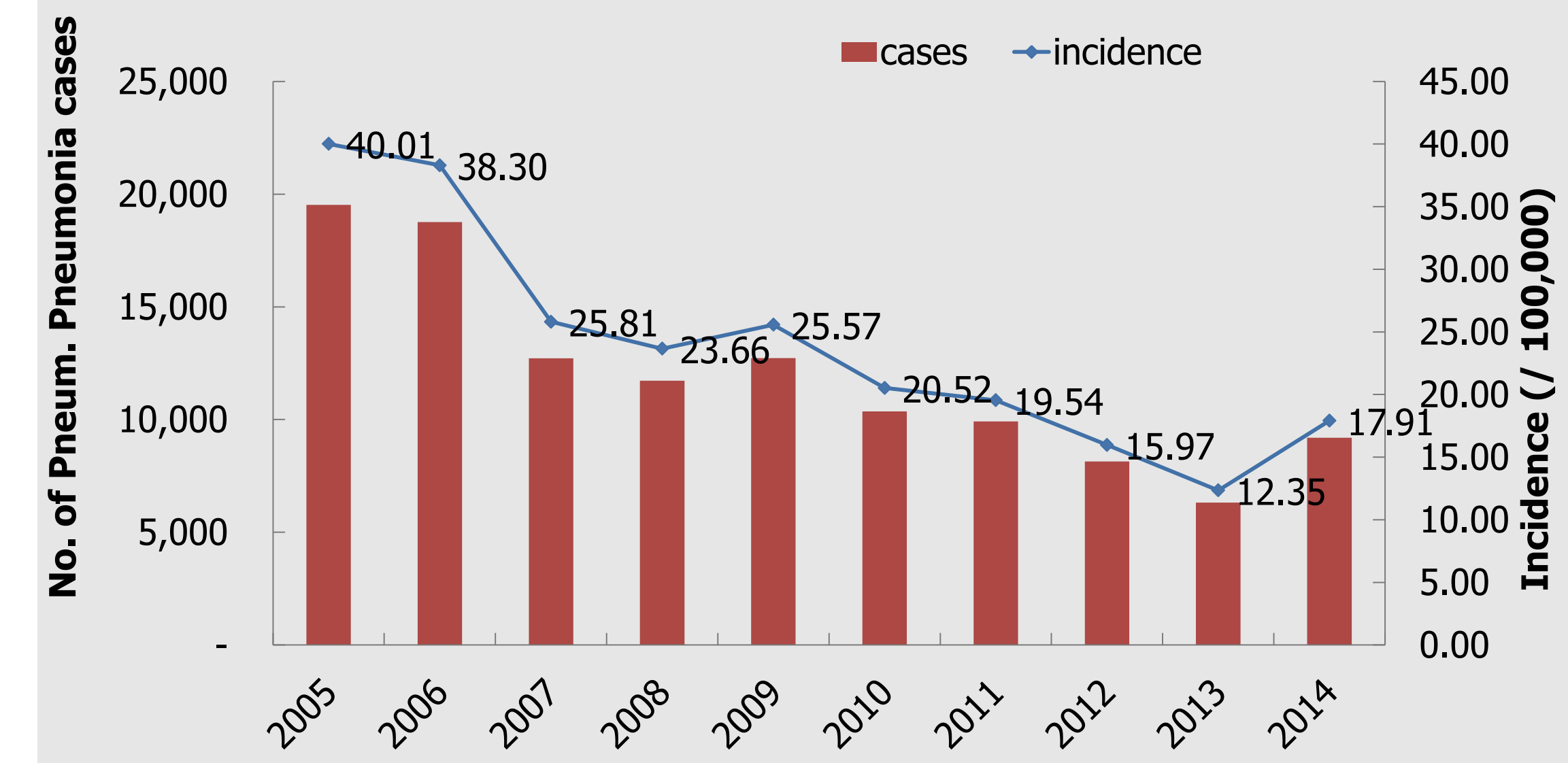


Fig 4. Pneumo. pneumonia incidences from 2005 to 2014

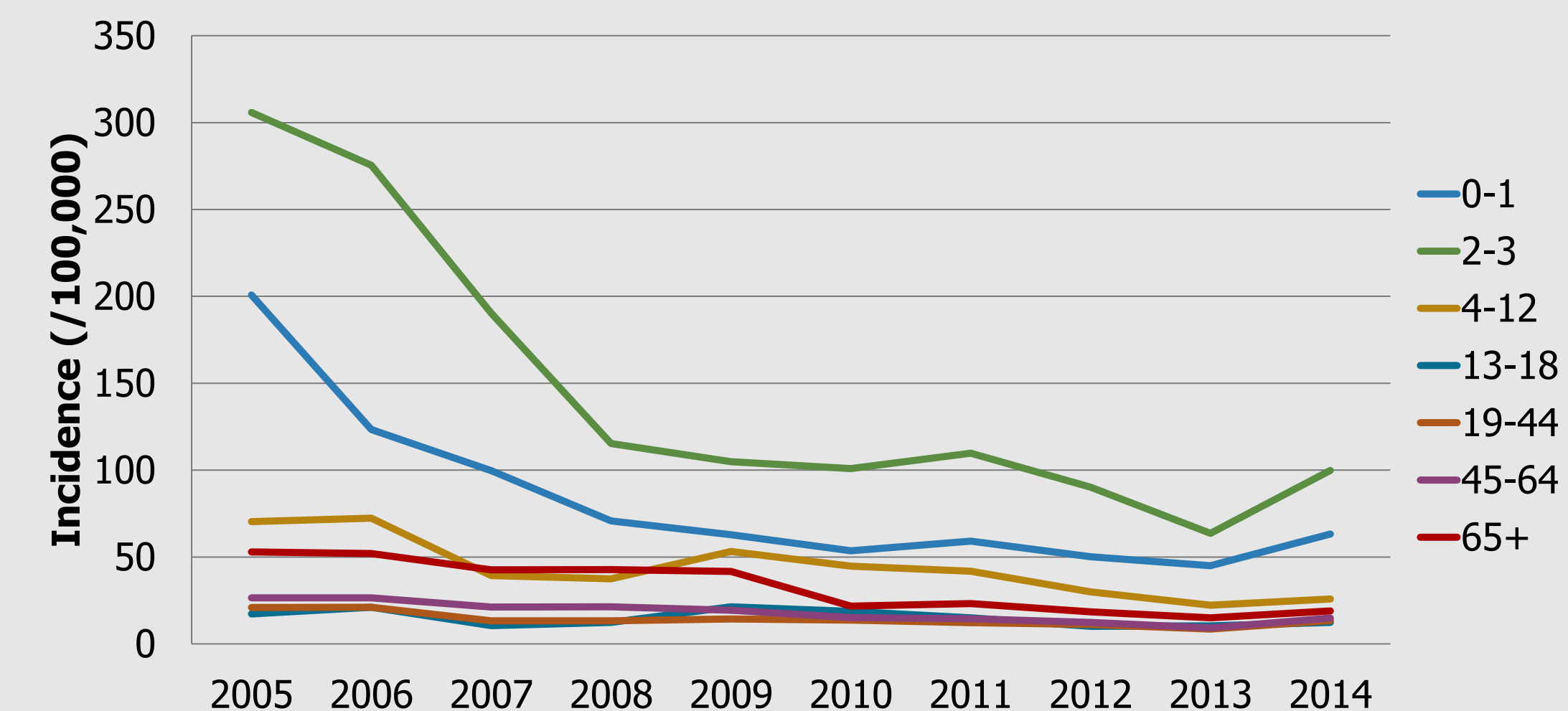


Fig 5. Pneumo. pneumonia incidences from 2005 to 2014 by age-groups

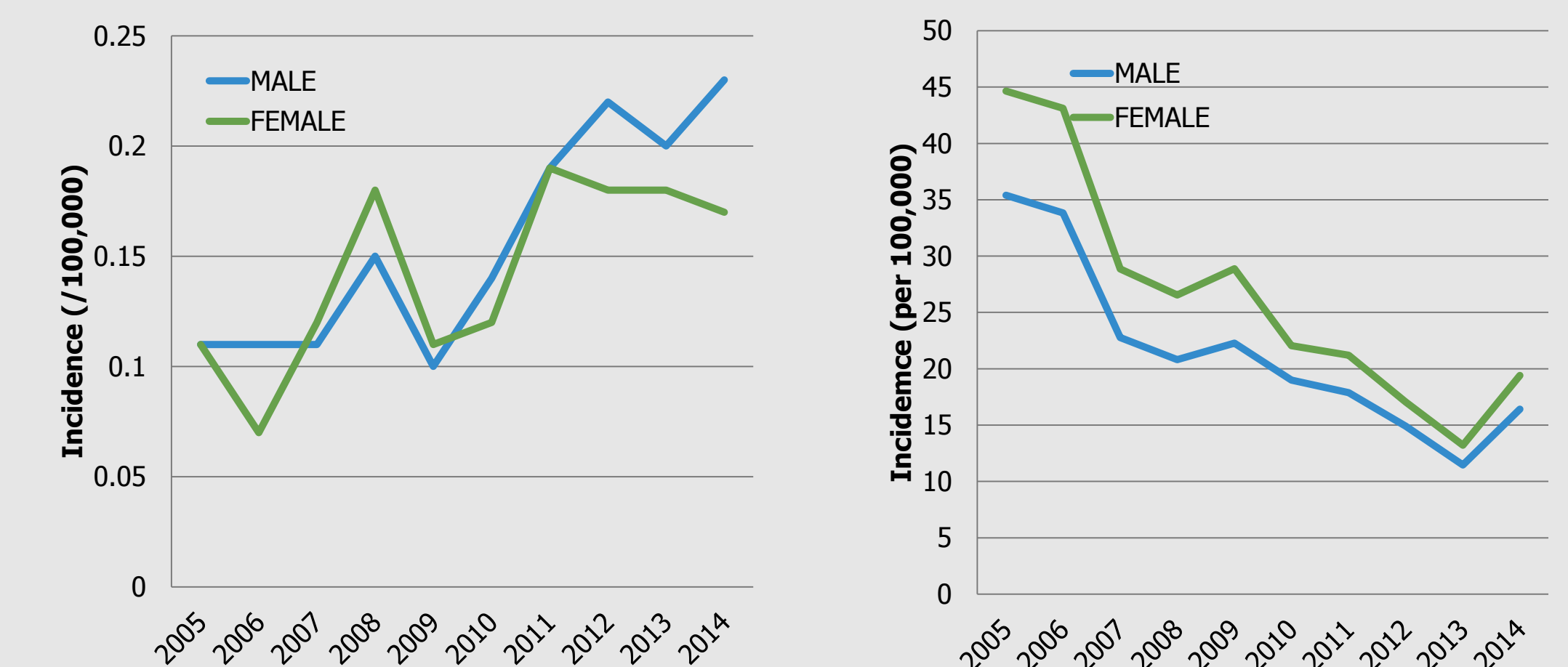


Fig 6. Sepsis(Lt) & pneumonia(Rt) from 2005 to 2014 by sex

## SUMMARY

- The over-all incidence of IPD was 0.79 per 100,000 .
- The incidence of pneumococcal sepsis and pericarditis increased for recent 10 years in elderly and adult .
- During this period, 119,370 pneumococcal pneumonia cases were identified from the database (23.8 per 100,000).
- The incidence of pneumococcal pneumonia has been decreasing for a decade, especially sharply in children.
- The cost of hospitalization for IPD is highest in sepsis and meningitis, especially in young children and elderly
- The results suggest that the incidence of pneumococcal pneumonia has been decreasing during study period (2005-2014) after introduction of pneumococcal vaccine.
- The both incidence of pneumococcal sepsis and pneumococcal pericarditis, however, have been increasing in elderly in this period in Korea.