

Trends in infectious disease mortality in Japan, 1946-2015

Ryo Kinoshita¹ Hiroshi Nishiura¹

¹ *Hokkaido University, Sapporo, Hokkaido, Japan, 060-8638*

ryokinoshita@med.hokudai.ac.jp

nishiurah@med.hokudai.ac.jp

Background: Japan experienced a rapid demographic transition from high to low birth rates, and low to high life expectancy. The country has become one of the worlds most aged nation, with more than 1/4 of the population over 65 years old. We aimed to clarify the long-term trends of infectious disease mortality during the period of drastic demographic and epidemiologic transitions in Japan.

Methods: Causes of death (COD) of diseases known to be caused by infectious agents from 1946 to 2015 was retrieved from the vital statistics of Japan, classified by the International Classification of Diseases. Annual percent change (APC) and average annual percent change (AAPC) of crude mortality rate was calculated using Joinpoint regression. Infectious diseases with an increasing trend were further analyzed in subgroups of age (0-19, 20-59, 60 years and over), and with age adjusted mortality rate.

Results: The crude mortality rate per 100,000 of all infectious diseases was 39.6 in 1980, which has been increased to 111.4 in 2015. Due to Japan's super-aging society, an increasing trend was identified among diseases that are associated with mortality in elderly. Cancer with known infectious cause has also increased from a crude mortality rate of 64.8 to 72.6 per 100,000. AAPC during this period was 3.3% (95% CI 2.9-3.7), and 0.47% (95% CI 0.35-0.58) respectively for all infectious diseases, and cancer with known infectious cause. Increase of AAPC was observed in COD of pneumonia, sepsis, influenza, viral hepatitis, enteric infection, and malignant neoplasms of liver and uterus. Pneumonia became the major contributor for the increase of infectious disease deaths, accounting for 85% of deaths caused by infectious diseases.

Conclusion: Although Japan experienced the epidemiological transition with rapid reduction of infectious diseases soon after the World War II, there has been an increasing trend of infectious diseases. The rapid demographic change has allowed infectious diseases to reemerge in the elderly.

*Mini-Symposium: Quantification of the epidemiological magnitude of infectious disease epidemics