

Appendix 1

Types of insurance

In Korea, National Health Insurance System (NHIS) in which the governmental insurer has been covering insurance payments and claims management for the country's all population since 1989. Koreans using the medical system (private or public) in Korea must be enrolled in the NHIS. The NHIS includes a health insurance (HI) system financed by mandatory contributions and a medical aid (MA), a social assistance scheme for the very poor, which is financed by general taxation. Approximately 96.7% of all residents in the country are covered by the HI, and the rest of the population who do not earn an income above the poverty level and cannot afford to contribute to HI system, are covered by the MA (the data from the census 2009 in Korea)

Definition

Working definition of asthma: 1) age > 18 years and; 2) two or more claims in 1 year with ICD codes (J45.x–J46.x) for the principal or four additional diagnoses of asthma, and prescription of at least one asthma-related medication 6 months before and 6 months after the first claim of the year. Asthma-related medications included inhaled corticosteroids (ICSs), long-acting β -2 agonists (LABAs), ICSs and LABAs combined in a single inhaler (ICSs/LABAs), oral leukotriene antagonists (LTRAs), short-acting β -2 agonists (SABAs), long-acting muscarinic antagonists (LAMAs), short-acting muscarinic antagonists (SAMAs), systemic β agonists, and theophylline derivatives

Comorbidities were identified using the same approach, defined as the presence of claims with corresponding ICD codes within the same 6-month pre- and post-index period based on the first asthma-related claim of the year.