Predicting human influenza epidemics in Taiwan

Influenza is a serious respiratory illness which can be debilitating and cause complications that lead to hospitalization and death. Every year, the global burden of influenza epidemics is believed to be 3-5 million cases of severe illness and 300,000-500,000 deaths[1]. Older persons and patients with chronic pulmonary and cardiac disease are at greatest risk for complications, including viral and bacterial pneumonia, otitis media, sinusitis, and exacerbations of chronic respiratory disease[2]. Once pneumonia sets in, the death rate rises to 25-30%. Physicians often caution older and chronic patients to avoid epidemic areas during the influenza season. Two subtypes, influenza A and B, cause serious infection in humans. Influenza A is more common and more severe[3]. The European Silver Paper recommends[4] annual influenza vaccination and this has proven of great value in controlling the disease in older persons[5].

To assess the preventive effect of influenza and pneumococcal vaccination, we designed a nonparametric forecasting method[6] which uses vectors selected from historical influenza time series that match current activity. Eleven clinical virology laboratories participated in northern, central, southern, and eastern Taiwan. All had passed the regular CDC (Center for Disease Control and Prevention) proficiency tests of viral diagnosis, and the principal investigators of the laboratories attended monthly meetings for information sharing and technology discussions[7]. Combining observations of influenza incidence in Taiwan and among 22 administrative regions for 340 consecutive weeks of surveillance between 1999 and 2005 from Taiwanese CDC databases, we have predicted incidence rates of national and regional influenza A, B, A/H1N1, and A/H3N2. Time-series prediction, including subtypes, by using the method of analogues has been applied for national incidences and then extended to multivariate time series for predicting regional incidences[6,8,9]. Correlation coefficients between the observed and predicted national incidences were between 0.60 (3-week-ahead forecasts) and 0.80 (1-week-ahead forecasts). We also obtained 0.79 for influenza A, 0.79 for influenza B, 0.44 for influenza A/H1N1 and 0.76 for influenza A/H3N2 (1-week-ahead forecasts). In conclusion, influenza epidemic predictions combined with local geographic data in Taiwan provide a fair warning system.

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AGE DISCRIMINATION IN BREAST CANCER SCREENING

The European Silver Paper recommends the implementation of evidence-based screening tests for older people[1]. Breast cancer can strike women at any age and early diagnosis through regular screening is useful in enhancing probability of survival. Research has shown that the risk of developing breast cancer increases with age[2]. Breast cancer is the most frequent cancer among women worldwide. In Europe it concerns 26.5% of all new cancer cases and accounts for 17.5% of cancer deaths. In the enlarged EU, there are around 270,000 new cases of breast cancer each year and 96,000 cancer deaths. Prevalence is rising in the EU due to increasing age, and shows no signs of levelling off[3]. In 2006, EU guidelines[4] stipulated that free high quality breast screening should be provided every two years for women aged 50 and above. Among older women, breast cancer is a major burden and AGE – the European Older People's Platform[5] – is convinced that the pronounced disparity between EU Member States in survival rates could be substantially reduced by the implementation of population-based high quality screening programmes open to all women aged 50+.

Benefits and harms

European health care systems need to be adequately equipped to address the needs of the ageing populations they serve. This remains no less true for the routine breast cancer screening of older women and their subsequent treatment when a cancer is detected. AGE is concerned that substantial numbers of older women are not included in targeted mammography screening programmes and that the limits of the target age for such screening in the EU do not extend beyond 75 years in many Member States. Regular mammography screening significantly reduces mortality from breast cancer. This applies equally to women aged 70+ who face a higher absolute risk for breast cancer, if their life expectancy is not compromised by co-morbid disease. Evidence suggests[6] that the benefits of regular mammography increase with age, whereas the likelihood of harms from screening (false positive results, unnecessary anxiety, biopsies, and cost) diminishes from ages 40-70 years. The balance between benefits and potential harms therefore grows more favourable as women age.

Self-referral systems do not deliver

AGE is also concerned over the use of self-referral systems as these fail to deliver[7]. The fact that older women above 70 no longer receive reminders conveys the erroneous message that they are no longer at risk from breast cancer, despite the fact that they are more susceptible to developing this disease than younger women. This