Winter Pressures. What are they? What can be done to prevent them

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The first few days of this century precipitated a crisis in health care delivery in the UK¹. Pressures on secondary care over the turn of the year have been recognised for many years but the dramatic scenes of those days with persons lying on hospital trolleys in accident and emergency departments were quite unprecedented. There was considerable debate at the time as to whether this was caused by an influenza epidemic and indeed how many influenza cases there needed to be before the word epidemic was used.

In figure 1, the incidence of respiratory infection (data from the Weekly Returns Service of the Royal College of General Practitioners), hospital admission for respiratory disorders (England and Wales) and the number of deaths (all causes, England and Wales); all in persons aged 65 years and over averaged over winter weeks in the ten years 1991 to 2000 are summarised by week and presented graphically. The

dip in data for deaths in week 52 occurs because the data are based on the date of registration rather than the date of death. There is a strong association between these three indices: respiratory infections in the elderly pressurise primary and secondary care and cause death.

Over an annual period the largest contribution to acute respiratory infections in the elderly is diagnosed as acute bronchitis (approximately 60% of the annual total); influenza-like illness accounts for 5%.² The incidence of these conditions and of deaths (all causes by date of registration) peaked simultaneously in midwinter 1999/2000 (figure 2). Hospital admission for respiratory diseases peaked the week before. The reported incidence of acute bronchitis was approximately four times that of influenza-like illness and the highest reported in this age group by the Weekly Returns Service in the last fifteen years. Rates of influenza-like illness in the elderly were high, though less than those reported in 1989/90 and 1998/99. Admissions for respiratory conditions were the highest in the decade. There were 18800 excess deaths during the influenza outbreak period (week 50/1999 to week 04/2000) above the number expected if there were no influenza circulating in the community³ a figure only exceeded in the last fifteen winters in 1989/90 and 1996/97. The all age incidence of acute bronchitis and of influenza-like illness were not unusually high at this time and in children were even less than average. Thus, there was a combination of acute bronchitis and influenza-like illness particularly affecting the elderly turning the average winter pressure into a winter crisis.

Influenza occurs at random times during the winter months (November to March)⁴. During the nineties it occurred three times over the Christmas/New Year period. Acute bronchitis is reported with remarkable consistency. Peak incidence in the elderly is always in the first two weeks of the year, which is the same time that deaths peak, regardless of temperature and weather conditions. In the age groups 0-1 and 1-4 years, acute bronchitis is also a consistent winter event usually peaking in week 51. Family socialisation over Christmas probably explains the later peak in the elderly. Though acute bronchitis in young children is almost certainly due to Respiratory Syncytial Virus the cause in the elderly is not known.

Recognising that acute bronchitis is the main cause of winter pressures and influenza-like illness an additional less predictable cause but often the straw that breaks the camel's back; how can these problems be ameliorated? An increasing incidence of influenza-like illness reported in experienced sentinel practice networks is consistently confirmed as being due to

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influenza virus infection⁴ At the community level (even if not for every individual) influenza is effectively prevented by annual vaccination provided there is a virus strain match (which is usual). Influenza is effectively treated by the neuraminidase inhibitor antivirals, but only if administered within 48 hours of symptom onset⁶. Unfortunately, elderly people tend not to consult within this time window⁷. General practitioners need to take an initiative to alert vulnerable people to the importance of early intervention.

Acute bronchitis affects many more elderly people than influenza-like illness and there is always increased reporting of acute bronchitis during influenza epidemic periods⁴. The clinical manifestations of disease caused by virus respiratory pathogens are widely variable ranging from subclinical through to fatal illness. The spectrum of illness associated with rhinovirus infection is predominantly at the minor end whereas with influenza the spectrum is shifted to the more serious end. Notwithstanding this generality, many people seroconvert to influenza during epidemic period without experiencing any recognisable illness⁸. If influenza virus is known to be circulating, an respiratory infection should be considered as being probably caused by influenza virus especially if the symptoms include cough and fever⁹. However influenza causes only a minority of cases of acute bronchitis. Respiratory Syncytial Virus is particularly important cause of lower respiratory infection in the elderly, but its contribution to the totality of reported acute bronchitis is not known¹⁰⁻¹¹. The consistent winter epidemic characteristic of acute bronchitis is more consistent with a viral than bacterial cause, even though secondary bacterial infection may be an important factor in its pathogenesis. ■

Three contributions are needed to address the problem of winter pressures

From the general practitioner:-

Optimise influenza vaccination uptake in the elderly and treat influenza promptly and effectively

From the hospital administrator:-

Ensure flexibility of operation particularly in relation to bed occupancy in the first two weeks of the year.

From the research community (and particularly primary care researchers):-

Prioritisation for studies of the epidemiology and pathogenesis of acute bronchitis

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