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Unexpected changes in outpatient first attendance

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Repetition is said to be the best form of learning and hence this month's Money Matters returns to the issue of trends in outpatient first attendance. It has been noted that the financial year 2012/13 coincided with an unexplained increase in deaths (Jones 2013c), A&E attendance and case-mix and a specific increase in medical emergency admissions (Jones 2014a,c,d,f). These changes all show spatial spread across the UK with high local granularity and single-year-of-age specificity (Jones 2014b). All are highly suggestive of an infectious etiology.

Previous BJHCM studies have demonstrated that in many specialties outpatient first attendance and associated follow-up attendance follows a set of cyclic events rather than the straight line trajectory expected from demographic change. This appears to be particularly the case where incremental changes in GP referral are dictated by a set of immune-sensitive conditions (Jones 2013a,b). Figure 1 therefore shows incremental changes in first attendance for a set of such immune-sensitive specialties all of which show (to varying degrees) a discontinuous increase in 2012/13. Orthopaedics is presented as an example of a relatively immune insensitive specialty and annual changes are probably more sensitive to fractures and injury (weather dependent) while the majority of immune sensitive conditions, mainly arthropathies, are largely dealt with in Rheumatology.

The diagnosis for outpatient activity is reported by a number of enthusiastic Consultants working at individual hospitals and this constitutes around a 3% sample of total outpatient activity. The concept of a step-like alteration in case mix is explored further in Figure 2 for Dermatology where it can be seen that diagnoses showing an above average increase in 2012/13 undergo a considerable jump in terms of the proportion of the total case-mix.

The bulk of this shift arises from four conditions showing statistically significant increases, in decreasing order: Dermatitis > Cellulitis > Acne > Rosacea. The high proportion in the number of attendances for diagnoses with a shift up in 2012/13 in Figure 2 suggests that a large proportion of the Dermatological case-mix is immune sensitive and the immunological basis for dermatological conditions has been previously discussed.

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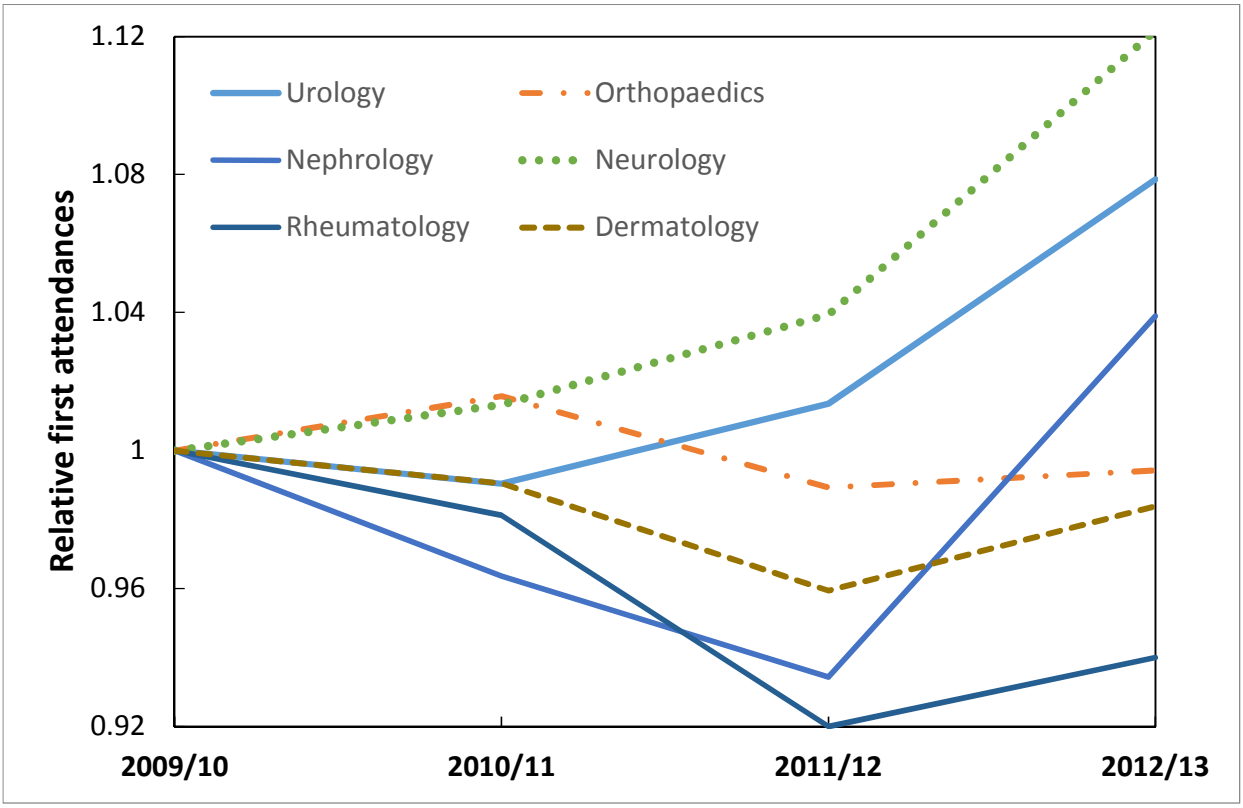
It has been suggested that the ubiquitous herpes virus, cytomegalovirus (CMV), may be implicated and even if this is not the case it is a good example of the type of immune modulating agent that may be the ultimate cause of these changes.

Figure 1: Trends in outpatient first attendance, England



Footnote: Data was obtained from http://www.hscic.gov.uk/article/2021/Website-Search?q=title:%22hospital+outpatient+activity%22&area=both&size=10&sort=Most+recent . Data for 2012/13 was adjusted upward by 253/250 to account for 3 fewer working days in the financial year (although this only makes a 1.2% change).

At this point it is crucial to understand that to the bulk of the population CMV is a largely innocuous pathogen and it only becomes a problem in instances of immune suppression (HIV/AIDS, organ transplantation, chemotherapy, anti-inflammatory drugs). However, in some 10% to 20% of the population (Jones 2014b) and especially as they approach old age, a mixture of natural inflammation and ageing, sometimes called inflammaging (Baylis et al 2013), and coupled with vitamin D insufficiency in the frail and/or institutionalized, leads to enhanced susceptibility to CMV (Jones & Beauchant 2014). Hence whilst cellulitis and acne are typically due to bacterial infection in the skin, CMV is widely associated as a trigger for the exacerbation and/or initiation of (seemingly unrelated) latent conditions (Jones 2014b).

It should be noted that many of the trends show a minimum in 2011/12 and such a minimum is observed in deaths and emergency admissions or is seen as a temporary halt in an otherwise increasing trend as in A&E attendances. It is this temporary minimum before the next outbreak which consistently lures hospital management into closing beds - with predictable outcomes.

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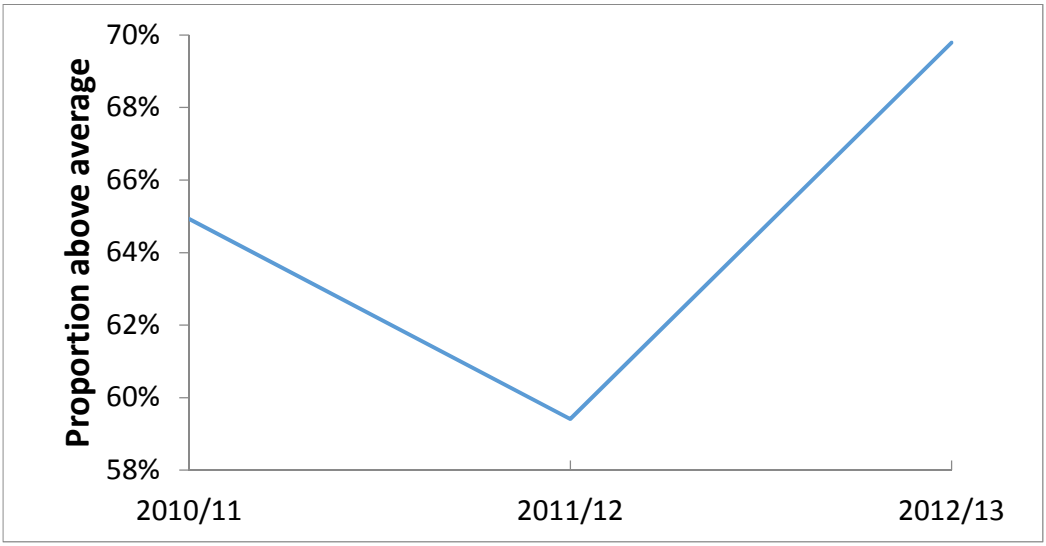
Figure 2: Proportion of total Dermatology diagnoses where there was an above average increase in 2012/13



Footnote: Data as per Figure 1. Dermatological conditions are contained in the ICD chapter L.

It would seem that this infectious event provides the fundamental basis for understanding the trends in health care demand for those conditions/specialties where immune function is the hidden basis for the marginal expression of eventual disease. In the absence of this understanding policy makers have erred by inferring that the problems are due to inefficiency on behalf of NHS organisations rather than due to a serious public health challenge. Is it time we all woke up to a new reality and planned accordingly?

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