

Influenza and pneumococcal vaccine uptake among nursing home residents in Nottingham, England: a postal questionnaire survey

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Abstract (provisional)

Background: Previous studies have shown influenza vaccine uptake in UK nursing home residents to be low. Very little information exists regarding the uptake of pneumococcal vaccine in this population. The formulation of policies relating to the vaccination of residents has been proposed as a simple step that may help improve vaccine uptake in care homes.

Methods: A postal questionnaire was sent to matrons of all care homes with nursing within the Greater Nottingham area in January 2006. Non respondents were followed up with up to 3 phone calls.

Results: 30% (16/53) of respondents reported having a policy addressing influenza vaccination and 15% (8/53) had a policy addressing pneumococcal vaccination. Seasonal influenza vaccine coverage in care homes with a vaccination policy was 87% compared with 84% in care homes without a policy ($p=0.47$). The uptake of pneumococcal vaccination was found to be low, particularly in care homes with no vaccination policy. Coverage was 60% and 32% in care homes with and without a vaccination policy respectively ($p=0.06$). This result was found to be statistically significant on multivariate analysis ($p=0.03$, $R=0.46$)

Conclusions: The uptake of influenza vaccine among care home residents in the Nottingham region is relatively high, although pneumococcal vaccine uptake is low. This study shows that there is an association between pneumococcal vaccine uptake and the existence of a vaccination policy in care homes, and highlights that few care homes have vaccination policies in place.

Adverse outcomes following hospitalization in acutely ill older patients

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Abstract

Background: The longitudinal outcomes of patients admitted to acute care for elders units (ACE) are mixed. We studied the associations between socio-demographic and functional measures with hospital length of stay (LOS), and which variables predicted adverse events (non-independent living, readmission, death) 3 and 6 months later.

Methods: Prospective cohort study of community-living, medical patients age 75 or over admitted to ACE at a teaching hospital.

Results: The population included 147 subjects, median LOS of 9 days (interquartile range 5–15 days). All returned home/community after hospitalization. Just prior to discharge, baseline timed up and go test (TUG, $P < 0.001$), bipedal stance balance ($P = 0.001$), and clinical frailty scale scores ($P = 0.02$) predicted LOS, with TUG as the only independent predictor ($P < 0.001$) in multiple regression analysis. By 3 months, 59.9% of subjects remained free of an adverse event, and by 6 months, 49.0% were event free. The 3 and 6-month mortality was 10.2% and 12.9% respectively. Almost one-third of subjects had developed an adverse event by 6 months, with the highest risk within the first 3 months post discharge. An abnormal TUG score was associated with increased adjusted hazard ratio [HR] 1.28, 95% confidence interval [CI] 1.03 to 1.59, $P = 0.03$. A higher FMMSE score (adjusted HR 0.89, 95% CI 0.82 to 0.96, $P = 0.003$) and independent living before hospitalization (adjusted HR 0.42, 95% CI 0.21 to 0.84, $P = 0.01$) were associated with reduced risk of adverse outcome.

Conclusion: Some ACE patients demonstrate further functional decline following hospitalization, resulting in loss of independence, repeat hospitalization, or death. Abnormal TUG is associated with prolonged LOS and future adverse outcomes.

Assessing control of postural stability in community-living older adults using performance-based limits of stability

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Abstract

Background: Balance disability measurements routinely used to identify fall risks in frail populations have limited value in the early detection of postural stability deficits in community-living older adults. The objectives of the study were to 1) measure performance-based limits of stability (LOS) in community-living older adults and compare them to theoretical LOS computed from data proposed by the Balance Master[®] system, 2) explore the feasibility of a new measurement approach based on the assessment of postural stability during weight-shifting tasks at performance-based LOS, 3) quantify intra-session performance variability during multiple trials using the performance-based LOS paradigm.

Methods: Twenty-four healthy community-living older adults (10 men, 14 women) aged between 62 to 85 (mean age \pm sd, 71.5 \pm 6 yrs) participated in the study. Subjects' performance-based LOS were established by asking them to transfer their body weight as far as possible in three directions (forward, right and left) without changing their base of support. LOS were computed as the maximal excursion of the COP in each direction among three trials. Participants then performed two experimental tasks that consisted in controlling, with the assistance of visual feedback, their centre of pressure (COP) within two predefined targets set at 100% of their performance-based LOS. For each task 8 trials were performed. Ground reaction forces and torques during performance-based LOS evaluation and experimental tasks were recorded with a force plate. Sway area and medio-lateral mean COP displacement speed variables were extracted from force plate recordings.

Results: Significant differences between theoretical LOS computed from maximum leaning angles derived from anthropometric characteristics and performance-based LOS were observed. Results showed that a motor learning effect was present as the participants optimized their weight-shifting strategy through the first three trials of each task using the visual biofeedback

provided on their COP. Reliable measures of control of postural stability at performance-based LOS can be obtained after two additional trials after the learning phase ($0.69 > ICC > 1.0$).

Conclusion: Establishing performance-based LOS instead of relying on estimations of theoretical LOS offers a more individualized and realistic insight on the true LOS of an individual. Performance-based LOS can be used as targets during weight-shifting postural tasks with real time visual feedback of the COP displacement to assess postural stability of community-living older adults. In order to obtain reliable results, a learning phase allowing subjects to learn how to control their COP displacement is needed.

Falls in advanced old age: recalled falls and prospective follow-up of over-90-year-olds in the Cambridge City over-75s Cohort study

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Abstract

Background: The "oldest old" are now the fastest growing section of most western populations, yet there are scarcely any data concerning even the common problem of falls amongst the very old. Prospective data collection is encouraged as the most reliable method for researching older people's falls, though in clinical practice guidelines advise taking a history of any recalled falls. This study set out to inform service planning by describing the epidemiology of falls in advanced old age using both retrospectively and prospectively collected falls data.

Methods: Design: Re-survey of over-90-year-olds in a longitudinal cohort study – cross-sectional interview and intensive 12-month follow-up.

Participants and setting: 90 women and 20 men participating in a population-based cohort (aged 91–105 years, in care-homes and community-dwelling) recruited from representative general practices in Cambridge, UK

Measurements: *Prospective falls data were collected using fall calendars and telephone follow-up for one*

year after cross-sectional survey including fall history.

Results: 58% were reported to have fallen at least once in the previous year and 60% in the 1-year follow-up. The proportion reported to have fallen more than once was lower using retrospective recall of the past year than prospective reports gathered the following year (34% versus 45%), as were fall rates (1.6 and 2.8 falls/person-year respectively). Repeated falls in the past year were more highly predictive of falls during the following year – IRR 4.7, 95% CI 2.6–8.7 – than just one – IRR 3.6, 95% CI 2.0–6.3, using negative binomial regression. Only 1/5 reportedly did not fall during either the year before or after interview.

Conclusion: Fall rates in this representative sample of over-90-year-olds are even higher than previous reports from octogenarians. Recalled falls last year, particularly repeated falls, strongly predicted falls during follow-up. Similar proportions of people who fell were reported by retrospective and prospective methods covering two consecutive years. Recall methods may underestimate numbers of repeated falls and the extent of recurrent falling. Professionals caring for people of advanced age can easily ask routinely whether someone has fallen at all, or more than once, in the past year to identify those at high risk of subsequent falls.

The accuracy of the MMSE in detecting cognitive impairment when administered by general practitioners: A prospective observational study

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Abstract

Background: The Mini-Mental State Examination (MMSE) has contributed to detecting cognitive impairment, yet few studies have evaluated its accuracy when used by general practitioners (GP) in an actual public-health setting. We evaluated the accuracy of MMSE scores obtained by GPs by comparing them to scores obtained by Alzheimer's Evaluation Units (UVA).

Methods: The study was observational in design and involved 59 volunteer GPs who, after having undergone training, administered the MMSE to patients with symptoms of cognitive disturbances. Individuals who

scored [less than or equal to]24 (adjusted by age and educational level) were referred to Alzheimer's Evaluation Units (UVA) for diagnosis (including the MMSE). UVAs were unblinded to the MMSE score of the GP. To measure interrater agreement, the weighted Kappa statistic was calculated. To evaluate factors associated with the magnitude of the difference between paired scores, a linear regression model was applied. To quantify the accuracy in discriminating no cognitive impairment from any cognitive impairment and from Alzheimer's disease (AD), the ROC curves (AUC) were calculated.

Results: For the 317 patients, the mean score obtained by GPs was significantly lower (15.8 vs. 17.4 for the UVAs; $p < 0.01$). However, overall concordance was good (Kappa=0.86). Only the diagnosis made by the UVA was associated with the difference between paired scores: the adjusted mean difference was 3.1 for no cognitive impairment and 3.8 for mild cognitive impairment. The AUC of the scores for GPs was 0.80 (95%CI: 0.75-0.86) for discriminating between no impairment and any impairment and 0.89 (95%CI: 0.84-0.94) for distinguishing patients with AD, though the UVA scores discriminated better.

Conclusions: In a public-health setting involving patients with symptoms of cognitive disturbances, the MMSE used by the GPs was sufficiently accurate to detect patients with cognitive impairment, particularly those with dementia.

Effect of influenza and pneumococcal vaccines in elderly persons in years of low influenza activity

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Abstract

Background: The present prospective study was conducted from 2003–2005, among all individuals 65 years and older in Uppsala County, a region with 300 000 inhabitants situated close to the Stockholm urban area. The objective of this study was to assess the preventive effect of influenza and pneumococcal vaccination in reducing hospitalisation and length of hospital stay (LOHS) even during periods of low influenza activity. The specificity of the apparent vaccine

associations were evaluated in relation to the influenza seasons.

Results: In 2003, the total study population was 41,059, of which 12,907 (31%) received influenza vaccine of these, 4,447 (11%) were administered the pneumococcal vaccine. In 2004, 14,799 (34%) individuals received the influenza vaccine and 8,843 (21%) the pneumococcal vaccine and in 2005 16,926 (39%) individuals were given the influenza vaccine and 12,340 (28%) the pneumococcal vaccine.

Our findings indicated that 35% of the vaccinated cohort belonged to a medical risk category (mainly those persons that received the pneumococcal vaccine). Data on hospitalisation and mortality during the 3-year period were obtained from the administrative database of the Uppsala county council.

During the influenza seasons, reduction of hospital admissions and significantly shorter in-hospital stay for influenza was observed in the vaccinated cohort (below 80 years of age). For individuals who also had received the pneumococcal vaccine, a significant reduction of hospital admissions and of in-hospital stay was observed for invasive pneumococcal disease and for pneumococcal pneumonia. Effectiveness was observed for cardiac failure even in persons that also had received the pneumococcal vaccine, despite that the pneumococcal vaccinated mainly belonged to a medical risk category. Reduction of death from all causes was observed during the influenza season of 2004, in the 75–84-year old age group and in all age-groups during the influenza season 2005.

Conclusion: The present study confirmed the additive effect of the two vaccines in the elderly, which was associated with a reduced risk in hospitalisation and a reduction in mean LOHS in seasons with low influenza activity.

Effects of intensive home visiting programs for older people with poor health status: A systematic review

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Abstract

Background: Home visiting programs have been

developed aimed at improving the health and independent functioning of older people. Also, they intend to reduce hospital and nursing home admission and associated cost. A substantial number of studies have examined the effects of preventive home visiting programs on older people living in the community; the findings have been inconsistent. The objective of this review was to assess the effectiveness of intensive home visiting programs targeting older people with poor health or otherwise with functional impairments.

Methods: A search for literature was based on included trials from four reviews on the effectiveness of home visits published after 2000 and on a database search of Cinahl, the Cochrane Central Register of Controlled Trials, Embase, Medline and PsycINFO from 2001 onwards. We also manually searched reference lists from potentially relevant papers. Randomized controlled trials were included assessing the effectiveness of intervention programs consisting of at least four home visits per year, an intervention duration of 12 months or more, and targeting older people (aged 65 years and over) with poor health. Two reviewers independently abstracted data from full papers on program characteristics and outcome measures; they also evaluated the methodological quality.

Results: The search identified 844 abstracts; eight papers met the inclusion criteria. Seven trials were of sufficient methodological quality; none of the trials showed a significant favorable effect for the main analysis comparing the intervention group with the control group on mortality, health status, service use or cost. The inclusion of less-intensive intervention programs for frail older persons would not have exerted a great influence on the findings of our review.

Conclusion: We conclude that home visiting programs appear not to be beneficial for older people with poor health within the health care setting of Western countries.
