

## Higher death rates for weekend hospital stays for patients with COPD or pneumonia

People hospitalized with chronic obstructive pulmonary disease (COPD) or pneumonia are more likely to die during a weekend stay in hospital, according to a new study (Suisa et al, 2014), irrespective of the day of admission.

The study analysed the 'weekend effect' (where patients admitted to hospital at the weekend have an increased risk of dying) in a different way by assessing whether patients who stayed in hospital over the weekend, even if they were admitted earlier in the week,

also experienced an increased risk of death.

Canadian researchers used medical records to examine death rates in over 300 000 people over the age of 50 years who were admitted to hospital with either chronic obstructive pulmonary disease or pneumonia between 1990 and 2007.

The results demonstrated that, irrespective of when patients were admitted to hospital, if they stayed over the weekend the risk of death was increased. During week days, the death rate was 80 per

10 000 per day. On a Friday, the risk of death increased by 5%, suggesting an additional 4 deaths per 10 000. On a Saturday and Sunday the risk increased by 7% suggesting an additional 5.6 deaths per 10 000 for each weekend day.

The findings therefore suggest that the increase in the risk of death is the result of a reduced quality of care, or reduced access to high quality care at the weekend, an effect that appears to begin on Friday.

Lead author, Dr Samy Suisa, from the Jewish General Hospital and McGill University, Montreal, Canada, said: 'Our study is the first to report an increase in mortality for patients staying in hospital over the weekend. The findings of our study have huge implications for the way health care is delivered across the globe. It may be time to reconsider the weekend concept in the health-care calendar to avert a significant number of likely preventable deaths.'

Suisa S, Dell'Aniello S, Suisa D, Ernst P (2014) Friday and weekend hospital stays: effects on mortality. *Eur Respir J* (doi: 10.1183/09031936.00007714)

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## Consensus statement on unmet needs in psoriatic arthritis

The International Federation of Psoriasis Associations, European Federation of Psoriasis Associations, National Psoriasis Foundation and The Arthritis Society have issued a joint consensus statement to provide a framework addressing the unmet needs faced by over 125 million people worldwide who are living with psoriasis and psoriatic arthritis. They aim to drive awareness and improvement to ensure people with psoriasis and psoriatic arthritis get the care and treatment they need to live full and healthy lives.

This initiative represents a first-of-its-kind collaboration between international and national advocacy organizations dedicated to psoriasis and psoriatic arthritis to issue a unified call to action.

The consensus statement provides a roadmap for how to improve the standards of care for people with psoriasis and psoriatic arthritis so that they may live full and healthy lives.

It outlines how key stakeholders can:

- Reduce the time to diagnosis of psoriasis and psoriatic arthritis
- Improve treatment of psoriasis and psoriatic arthritis, including access to medical specialists and medications
- Help patients, caregivers and medical professionals to manage the burden of these diseases.

## Risk factors for children developing allergic oesophagitis

Children delivered by caesarean section and those given antibiotics during early infancy both appear more prone to developing allergic inflammation of the oesophagus, according to a study from the Johns Hopkins Children's Center and Harvard Medical School (Radano et al, 2014).

The researchers analysed the medical records and upper endoscopy test results of 99 children, aged 1–5 years, a quarter of whom had been diagnosed with eosinophilic oesophagitis. The investigators also collected information from parents about children's symptoms and behaviour.

The rate of eosinophilic oesophagitis was three times higher among children born via caesarean section, compared with those delivered vaginally. Eosinophilic oesophagitis rates were 3.5 times higher among those treated with antibiotics in the

first year of life. Breastfeeding did not make a difference to eosinophilic oesophagitis risk, nor did the age at which a baby started eating solid foods.

'It is becoming increasingly clear that the early development and composition of our gut bacteria can influence immunity for life', said lead investigator Dr Corinne Keet, a paediatric allergist at the Johns Hopkins Children's Center. '[This is] another reminder to be vigilant against unnecessary antibiotic use, but particularly so in the first year of life because infants are extra sensitive to the effects of these drugs and can suffer lifelong consequences to immunity and digestive health.'

Radano MC, Yuan Q, Katz A, Fleming JT, Kubala S, Shreffler W, Keet CA (2014) Cesarean section and antibiotic use found to be associated with eosinophilic oesophagitis. *J Allergy Clin Immunol Pract* (doi: 10.1016/j.jaip.2014.02.018)

## Mental health and functional disability in intensive care survivors of delirium

Critical illness is associated with cognitive impairment, but mental health and functional disabilities in survivors of intensive care are inadequately characterized. An American study assessed associations of age and duration of delirium with mental health and functional disabilities in this group (Jackson et al, 2014).

A prospective, multicentre cohort study enrolled patients with respiratory failure or shock who were undergoing treatment in medical or surgical intensive care units in Nashville, Tennessee, USA. Survivors were assessed at 3 months and 12 months with measures of depression, post-traumatic stress disorder, and functional disability.

Linear and proportional odds logistic regression were used to assess independent associations between age and duration of

delirium with mental health and functional disabilities.

A total of 821 patients were enrolled with a median age of 61 years (interquartile range 51–71 years), assessing 448 patients at 3 months and 382 patients at 12 months after discharge. At 3 months, 149 (37%) of 406 patients with available data reported at least mild depression, as did 116 (33%) of 347 patients at 12 months.

Only 7% of patients (27 of 415 at 3 months and 24 of 361 at 12 months) had symptoms consistent with post-traumatic stress disorder.

Disabilities in basic activities of daily living were present in 139 (32%) of 428 patients at 3 months and 102 (27%) of 374 at 12 months, as were disabilities in instrumental activities of daily living in 108 (26%) of 422 individuals at 3 months and 87 (23%) of 372 at

12 months. Mental health and functional difficulties were prevalent in patients of all ages.

No consistent association was observed between the presence of delirium and mental health problems or functional disabilities.

Depression is five times more common than post-traumatic stress disorder after critical illness and is driven by somatic symptoms, suggesting approaches targeting physical rather than cognitive causes could benefit patients leaving critical care.

Jackson JC, Pandharipande PP, Girard TD et al for the Bringing to light the Risk Factors And Incidence of Neuropsychological dysfunction in ICU survivors (BRAIN-ICU) study investigators (2014) Depression, post-traumatic stress disorder, and functional disability in survivors of critical illness in the BRAIN-ICU study: a longitudinal cohort study. *Lancet Respir Med* 2(5): 369–79 (doi: 10.1016/S2213-2600(14)70051-7)

### Subcutaneous formulation of tocilizumab available

A new subcutaneous formulation of tocilizumab (RoActemra) will allow thousands of UK rheumatoid arthritis patients to take control of where and when they have their treatment.

### First treatment for Morquio A syndrome

The only drug designed to address Morquio A syndrome, elosulfase alfa (Vimizim) is available for children and adults with this rare genetic condition. Elosulfase alfa replaces the key enzyme (N-acetylgalactosamine-6-sulfatase) which is deficient in people with Morquio A syndrome. This syndrome, also known as mucopolysaccharidosis type IVA, is commonly diagnosed in early childhood and is life-long with no cure.

### Once-daily dosing with new formulation of posaconazole

Posaconazole (Noxafil) is available in 100 mg gastro-resistant tablets. This new formulation offers the antifungal efficacy of posaconazole 40 mg/ml oral suspension with the convenience of once-daily dosing, ensuring patients get appropriate therapeutic levels of the drug because of its consistent absorption.

## Preventing contrast-induced acute kidney injury

The efficacy of a new fluid protocol was tested to see if it would prevent contrast-induced acute kidney injury.

A randomized, parallel-group, comparator-controlled, single-blind phase 3 trial (Brar et al, 2014) assessed the efficacy of a new fluid protocol based on the left ventricular end diastolic pressure for the prevention of contrast-induced acute kidney injury in patients undergoing cardiac catheterization.

The primary outcome was the occurrence of contrast-induced acute kidney injury, defined as >25% or >0.5 mg/dl increase in serum creatinine concentration.

A total of 396 patients aged 18 years or older undergoing cardiac catheterization with an estimated glomerular filtration rate of 60 ml/min/1.73 m<sup>2</sup> or less and one or more of several risk factors were randomly allocated in a 1:1 ratio to left ventricular end diastolic pressure-guided volume expansion ( $n=196$ ) or the control group ( $n=200$ ) who received a standard fluid administration protocol.

Contrast-induced acute kidney injury occurred less frequently in patients in the left ventricular end diastolic pressure-guided group (12/178; 6.7%) than in the control group (28/172; 16.3%; relative

risk 0.41, 95% confidence interval = 0.22–0.79;  $P=0.005$ ). Hydration treatment was terminated prematurely because of shortness of breath in three patients in each group.

Left ventricular end diastolic pressure-guided fluid administration seems to be safe and effective in preventing contrast-induced acute kidney injury in patients undergoing cardiac catheterization.

Brar SS, Aharonian V, Mansukhani P et al (2014) Haemodynamic-guided fluid administration for the prevention of contrast-induced acute kidney injury: the POSEIDON randomised controlled trial. *The Lancet* 383(9931): 1814–23 (doi: 10.1016/S0140-6736(14)60689-9)

## Preventing depression via mental health programmes at work

Mental health programmes delivered through the workplace can reduce symptoms of

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depression, according to a systematic review of randomized controlled trials (Tan et al, 2014). The findings suggest that a range of workplace programmes is able to reduce depression symptoms among employees.

Over recent decades, mental illness has become the leading cause of long-term absence from work in the developed world. However, despite the increasing size of this problem, to date it has not been clear how or if work-based prevention programmes could help.

This strategy of preventing rather than curing is well established in other health areas, such as heart disease, but is a relatively new concept in mental health. There is

now growing evidence that many mental illnesses may be preventable.

The results of nine workplace-based randomized controlled trials were analysed in a systematic review by researchers from the University of New South Wales, the Norwegian Institute of Public Health and the Black Dog Institute. Five of the studies identified were based on cognitive behavioural therapy, which helps people better understand their emotions, thoughts and behaviours in a range of stressful situations. Two of the included studies were focused on mental health literacy, one was based on increasing physical activity, and another was based on team participation.

The researchers only looked at studies that were delivered to entire working populations – universal prevention – rather than people at risk of developing mental illness, or those already developing symptoms. Universal prevention has many practical benefits, as there is no need to screen people and an entire workforce can be reached without fear of stigmatization, labelling and the associated perceived negative effects on employment.

Dr Samuel Harvey, senior author of the study, said: 'Previously it has been assumed that mental health interventions will only help those who are already suffering from significant symptoms. Here we have shown that a range of relatively simple programmes can reduce the level of depression symptoms across an entire workforce. This provides evidence that workplaces can be proactive, rather than reactive, when considering workers' mental health.'

Owing to the small number of studies included and the inherent difficulties in researching universal prevention, the researchers were unable to make direct comparisons to determine which approach worked best. But a separate meta-analysis performed as part of this study found that cognitive behavioural therapy-based interventions were effective. All the studies were based on self-reported data, so the conclusions are based on a reduction in symptoms rather than clinical diagnoses.

### Levels of poverty or wealth may affect the distribution of cancer types in different areas

An analysis from the USA has found that certain cancers are more concentrated in areas with high poverty, while other cancers arise more often in wealthy regions (Boscoe et al, 2014). Also, areas with higher poverty had lower cancer incidence and higher mortality than areas with lower poverty. The study's findings demonstrate the importance of including measures of socioeconomic status in national cancer surveillance efforts.

Overall, socioeconomic status is not related to cancer risk, but it does seem to influence the type of cancer a person may develop. To look closely at the issue, Dr Francis Boscoe of the New York State Cancer Registry and his colleagues compared people living in areas with the highest

poverty with those living in areas with the lowest levels of poverty.

The investigators assigned nearly three million tumours diagnosed between 2005 and 2009 from 16 states plus Los Angeles (an area covering 42% of the American population) into one of four groupings based on the poverty rate of the residential census tract at time of diagnosis.

For all cancer types combined, there was a negligible association between cancer incidence and poverty; however, 32 of 39 cancer types showed a significant association with poverty (14 positively associated and 18 negatively associated).

Certain cancers – Kaposi sarcoma and cancers of the larynx, cervix, penis, and liver – were more likely in the poor-

est neighbourhoods, while other cancers – melanoma, thyroid, other non-epithelial skin, and testis – were more likely in the wealthiest neighbourhoods.

'At first glance, the effects seem to cancel one another out. But the cancers more associated with poverty have lower incidence and higher mortality, and those associated with wealth have higher incidence and lower mortality', explained Dr Boscoe, 'When it comes to cancer, the poor are more likely to die of the disease while the affluent are more likely to die with the disease.'

Boscoe FJ, Johnson CJ, Sherman RL, Stinchcomb DG, Lin G, Henry KA (2014) The relationship between area poverty rate and site-specific cancer incidence in the United States. *Cancer* (doi: 10.1002/cncr.28632)

Tan L, Wang M-J, Modini M, Joyce S, Mykletun A, Christensen H, Harvey SB (2014) Preventing the development of depression at work: a systematic review and meta-analysis of universal interventions in the workplace. *BMC Medicine* 12: 74

## Kaleidoscope model of diabetes care: providing a holistic approach to management

National audit data highlight persistent sub-optimum control among increasing numbers of people living with diabetes, with severe consequences for the individual and the NHS.

Current diabetes management strategies are inadequate to support optimum diabetes control and prevent long-term diabetes-related complications, with their consequent costs to individuals and society.

Dr Katharine Barnard from the University of Southampton, commented: 'A new approach is required to help health-care professionals provide tailored, patient-centred care to help individuals access the best care for them to be able to self-manage their diabetes in the context of their own lives.'

Her team has proposed a new cohesive, holistic model of care (Barnard et al, 2014), tailored to individual needs to support optimum diabetes outcomes – the Kaleidoscope model of diabetes care. This model is necessary to understand the driving forces behind behaviour and their impact on diabetes management. Feelings and beliefs are fundamental behavioural drivers and influence diabetes self-management choices.

The model incorporates external factors, such as social support (or lack thereof), therapies (and devices) and intrinsic personal drivers.

Individually, these explain some of the complexities of behaviour and, collectively, they impact on personal motivation to achieve a specific outcome. They independently

affect diabetes self-management and the environment in which individuals live.

A model of care that proposes the encompassing of environment, intrinsic thought and therapy regimens to provide tailored, personalized health care should support enhanced diabetes self-management and outcomes from diagnosis.

The Kaleidoscope model of care could be deliverable in routine care, incorporating environmental, personal and treatment aspects of diabetes self-management, and should benefit both individuals with diabetes and health-care professionals.

Barnard KD, Lloyd CE, Dyson PA et al (2014) Kaleidoscope model of diabetes care: time for a rethink? *Diabetic Med* **31**(5): 522–30 (doi: 10.1111/dme.12400)

## Online cognitive behavioural therapy for insomnia disorder

Computerized or online cognitive behavioural therapies are being developed to deliver insomnia therapy, seeking to address the difficulty of delivering an evidence-based technology to a large number of patients at low cost.

A pilot study looked at outcomes in 75 participants with insomnia disorder using an open-access, novel online therapy (Anderson et al, 2014). An interactive video-based website was used to encourage compliance by personalizing therapy based on response. Sleep efficiency, sleep latency, total sleep time and sleep quality were assessed before and after intervention.

Participants who completed therapy had severe insomnia disorder, with a group mean sleep efficiency of 55%. After intervention there was a significant increase in sleep efficiency and sleep latency. Most users reported improved sleep quality, and compliance with therapy was very good.

The evaluation suggests that screening for other sleep disorders and mental health problems is necessary as other sleep disorders are detected in those who self-refer with insomnia.

Anderson KN, Goldsmith P, Gardiner A (2014) A pilot evaluation of an online cognitive behavioral therapy for insomnia disorder - targeted screening and interactive Web design lead to improved sleep in a community population. *Nat Sci Sleep* **6**: 43–9 (doi: 10.2147/NSS.S57852)

## Snacking has stronger link to fatty liver and abdominal obesity than meal size or frequency

Studies have linked obesity to the accumulation of abdominal fat and fat in the liver, making non-alcoholic fatty liver disease one of the most prevalent diseases of the liver.

According to new findings (Koopman et al, 2014), a hypercaloric diet with frequent meals increased intrahepatic triglyceride content and fat around the waist, but increasing meal size did not. The researchers found that snacking on high-fat and high-sugar foods is independently associated with abdominal fat and hepatic steatosis.

For the study 36 lean men were randomized to a hypercaloric diet or a eucaloric con-

trol diet for 6 weeks. Researchers measured intrahepatic triglyceride and abdominal fat using magnetic resonance imaging and insulin sensitivity before and after the diet.

Subjects on the hypercaloric diet ate three main meals along with additional calories from high fat and/or high sugar drinks, with or between meals, to increase meal size or meal frequency.

High calorie diets increased body mass index, but eating more frequent meals significantly increased intrahepatic triglyceride levels, while larger sized meals did not. Abdominal fat increased in the high sugar

and the high fat/high sugar frequency group; the latter group also had decreased liver insulin sensitivity.

Lead author Dr Mireille Serlie, from the Academic Medical Centre Amsterdam, The Netherlands, concluded: 'Our study provides the first evidence that eating more often, rather than consuming large meals, contributes to fatty liver independent of body weight gain.'

Koopman KE, Caan MWA, Nederveen AJ et al (2014) Hypercaloric diets with increased meal frequency, but not meal size, increase intrahepatic triglycerides: A randomized controlled trial. *Hepatology* (doi: 10.1002/hep.27149)