

Low staffing levels on intensive care affect patient survival

Patients in intensive care have a better chance of survival if there are more doctors and nurses working on the unit (West et al, 2014).

Researchers were able to separate out staffing levels from other factors, such as workload and how ill patients are, for the first time after examining nearly 40 000 patient records and data from 65 intensive care units in the UK.

Information came from the Intensive Care National Audit & Research Centre Case Mix Programme. An Audit Commission survey of intensive care units conducted in 1998 gave information about

staffing levels. This is currently the best available dataset for testing the relationship between staffing and outcomes in UK intensive care units.

After controlling for patient characteristics and workload the researchers found that higher numbers of nurses per bed (odds ratio 0.90, 95% confidence interval 0.83–0.97) and higher numbers of consultants (odds ratio 0.85, 95% confidence interval 0.76–0.95) were associated with higher survival rates.

Professor Elizabeth West, Professor in Applied Social Science in the Faculty of Education and Health, University of Greenwich,

London, who led the research, said: 'This is timely because the public are concerned about the ability of the NHS to provide safe and compassionate care. Recent catastrophic failures such as events at Mid-Staffordshire have highlighted the importance of staffing levels to patient survival, and this study has reinforced that message.'

This is the first study of patient survival in intensive care units to look at the numbers of doctors as well as nurses. Doctors and nurses work closely together as a team on intensive care units, and Professor West commented: 'Future studies need to see the whole picture and examine how the multidisciplinary team works together.'

This is also the first study to show that the sub-group of patients who are the most

severely ill are most affected by low levels of nurse staffing.

West E, Barron DN, Harrison D, Rafferty AM, Rowan K, Sanderson C (2014) Nurse staffing, medical staffing and mortality in Intensive Care: An observational study. *Int J Nurs Stud* 51(5): 781–94 (doi: 10.1016/j.ijnurstu.2014.02.007)

Professor Elizabeth West, Professor in Applied Social Science, Faculty of Education and Health, University of Greenwich, London



New definition for epilepsy improves diagnostic accuracy

An expert task force has created a new definition for epilepsy that refines the scope of patients diagnosed with this disease (Fisher et al, 2014). This provides a greater level of detail to diagnose epilepsy by including individuals with two unprovoked seizures, and those with one unprovoked seizure and other factors that increase risk of seizure recurrence.

'Why change the definition of epilepsy?' asks lead author Dr Robert Fisher from Stanford University School of Medicine. 'The 2005 definition does not allow a patient to outgrow epilepsy, nor does it take into account some clinicians' views that epilepsy is present after a first unprovoked seizure when there is a high risk for another.'

He continued: 'The task force recommendation resolves these issues with the new, more practical, defini-

tion of epilepsy that is aimed at clinicians. However, some researchers might use criteria similar to those of the older definition to facilitate comparison with prior studies.'

The task force suggests that epilepsy is a disease of the brain defined as:

- At least two unprovoked (or reflex) seizures occurring more than 24 hours apart; or
- One unprovoked (or reflex) seizure and a probability of further seizures similar to the general recurrence risk (at least 60%) after two unprovoked seizures, occurring over the next 10 years; or
- Diagnosis of an epilepsy syndrome.

Fisher RS, Acededo C, Arzimanoglou A et al (2014) ILAE Official Report: A practical clinical definition of epilepsy. *Epilepsia* 55(4): 475–82 (doi: 10.1111/epi.12550)

Treating NDM enzyme resistance remains 'enormous challenge'

Bacteria with the New Delhi metallo-beta-lactamase or NDM enzyme remain susceptible to only colistin with only limited susceptibility to three other antibiotics, a study by Public Health England has found (Jain et al, 2014). This means that infections caused by bacteria with this mechanism are very hard to treat.

The study reports on one of the largest collections of NDM isolates outside of the Indian subcontinent and analysed 326 bacterial isolates from 250 patients collected over 5.5 years. Travel history was available for only 40% of patients, but 52% (53/101) of these had documented health-care contact within or travel to the Indian subcontinent.

Most NDM-positive bacteria were resistant to all the carbapenem antibiotics tested. NDM-1 is one of a number of different enzymes (carbapenemases) which can destroy these, making bacteria resistant to most 'penicillin-like' antibiotics.

Public Health England's results showed that 234/306 (76%) of NDM-positive bacteria were also resistant to the three aminoglycosides tested (amikacin, gentamicin and tobramycin). However, about 90% of the isolates were susceptible to colistin.

Jain A, Hopkins KL, Turton J et al (2014) NDM carbapenemases in the United Kingdom: an analysis of the first 250 cases. *J Antimicrob Chemother* doi: 10.1093/jac/ dku084 (Epub before print April 25)

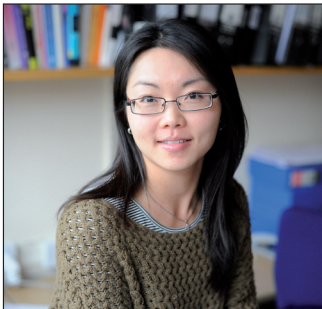
Improving quality of sleep can help chronic pain sufferers keep physically active

Chronic pain sufferers could be kept physically active by improving the quality of their sleep, suggests new research (Tang and Sanborn, 2014).

The study found that sleep was a worthy target for treating chronic pain and not only as an answer to pain-related insomnia.

‘Engaging in physical activity is a key treatment process in pain management. Very often,

Dr Nicole KY Tang, Assistant Professor, Department of Psychology, University of Warwick, Coventry



clinicians prescribe exercise classes, physiotherapy, walking and cycling programmes as part of the treatment, but who would like to engage in these activities when they feel like a zombie?’, asked lead author Dr Nicole Tang.

Dr Tang and co-author Dr Adam Sanborn examined the day-to-day association between night-time sleep and daytime physical activity in 119 chronic pain patients.

Chronic pain patients wore an accelerometer that measured motor activity to monitor their physical activity round the clock for a week in their usual sleeping and living environment. They also gave ratings of their sleep quality, pain intensity and mood using a mobile electronic diary every morning on waking.

Researchers used the time-specific data to determine, for

individual patients, whether the quality of their sleep had an impact on how physically active they were the following day. The only reliable predictor of physical activity was sleep quality – a comparison between multilevel models found that sleep was a better predictor of physical activity than morning ratings of pain intensity or mood.

‘Sleep has a naturally recuperative power that is often overlooked in pain management. A greater treatment emphasis on sleep may help patients improve their daytime functioning and hence their quality of life’, argued Dr Tang.

Tang NKY, Sanborn AN (2014) Better quality sleep promotes daytime physical activity in patients with chronic pain? A multilevel analysis of the within-person relationship. *PLoS ONE* 9(3): e92158 (doi: 10.1371/journal.pone.0092158)

Lower doses of sorafenib for advanced thyroid cancer

A subset of patients with advanced differentiated thyroid cancer and multiple comorbidities, in which full-dose sorafenib is considered unsafe, can have lower starting doses of sorafenib without adversely affecting efficacy or tolerability (doi: 10.1634/theoncologist.2013-0409).

Menstrual pain affects cognitive performance

Researchers asked 52 adults experiencing period pain to complete computer-based tasks examining different aspects of attention (doi: 10.1016/j.pain.2014.01.021). Rather than finding a specific effect on these tasks, menstrual pain dampened overall performance.

Patients can have shingles vaccine outside national programme

Sanofi Pasteur MSD has a supply of Zostavax shingles vaccine available for customers to order direct, enabling health-care professionals to vaccinate patients aged 50 years and above who are outside the National Shingles Immunisation Programme.

Radiotherapy plus androgen deprivation therapy better for localized prostate cancer

Men with localized prostate cancer do better if they are treated with radiotherapy combined with androgen deprivation therapy, according to new research presented at the 33rd conference of the European Society for Radiotherapy and Oncology in Vienna. The findings are expected to change clinical practice.

Professor Michel Bolla from Grenoble University Hospital, Grenoble, France, and colleagues from 37 centres in 14 countries recruited 819 men to a clinical trial. Patients had early stage prostate tumours that were at intermediate or

high risk of spreading. They were randomized to receive either radiotherapy alone ($n=407$) or radiotherapy and two subcutaneous injections of luteinizing hormone-releasing hormone analogues ($n=403$), which cause reversible chemical castration. (Nine men did not receive the planned treatment.)

Doctors could choose one of three irradiation doses: 70, 74 or 78 Gy. After an average of 7.2 years follow up, regardless of the radiotherapy dose and whether it was intensity modulated or not, those treated with radiotherapy combined with hormone treatment were sig-

nificantly less likely to have suffered a relapse and progression of their cancer than those treated with radiotherapy alone (hazard ratio = 0.53, confidence interval = 0.42–0.67, $P<0.001$).

Men receiving the combined treatment had nearly half the risk (47%) of biochemical progression of the disease compared to men treated with radiotherapy only.

Bolla M, Maingon P, van den Bergh ACM et al (2014) 3D-CRT/IMRT with/without short term androgen deprivation in localized T1b-cT2aN0M0 prostate cancer (EORTC 22991). Abstract no: OC-0522

Hepatitis C could be virtually eliminated by 2030

'Find more, treat more, save more lives' is the united call by patient groups and clinical experts for England to be one of the first countries in Europe to eliminate hepatitis C.

By tripling diagnosis rates and tripling treatment rates there is a possibility that hepatitis C could be virtually eliminated by 2030. New data supporting this call were presented at the International Liver

Congress in London. On the eve of the congress, the World Health Organization (2014) issued its first guidance for the treatment of hepatitis C.

The introduction of more effective treatments means that for the first time the Department of Health and NHS England have the opportunity to eliminate hepatitis C.

Data from a poster presented at the congress show that in England alone, the control of hepatitis C by 2030 could save over 5000 lives and potentially prevent the need for over 1000 future liver transplants. The population of those living with hepatitis C would be cut by over 90% (Rosenberg et al, 2014). It is currently estimated that there are 144000 people living with hepatitis C in England.

The cost to the NHS of hepatitis C-related liver disease is £156 million, resulting from the

management of liver complications caused by hepatitis C, and is rising by 10% annually.

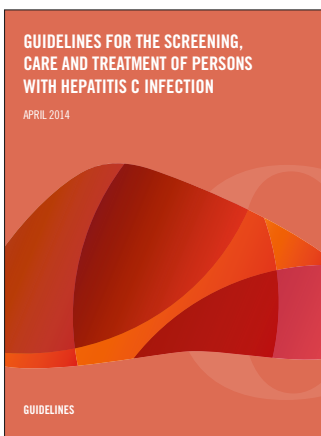
Commenting on the data, joint author, Professor William Rosenberg, Consultant Hepatologist, Royal Free London NHS Foundation Trust & UCLH Foundation NHS Trust said that: 'Elimination is now an achievable concept. Through our analysis we have predicted that to accomplish even an 80% reduction in liver-related deaths, treatment will need to increase nearly three-fold. This can be achieved by increasing the pool of treatable patients and increasing the number of people diagnosed.'

Another joint author, Dr Stephen Ryder, Consultant Hepatologist from Nottingham University Hospitals NHS Trust, added: 'While it is assumed that hepatitis C preva-

lence in England has peaked and the number of new infections remains stable, the complications of hepatitis C infection are increasing as the population ages. These complications are what will have the greatest cost impact on the NHS'.

Dr Ryder concluded: 'More effective therapies allow many more patients the opportunity for cure, which will ultimately mean that thousands more lives can now be saved. The key need is to increase diagnosis.'

Rosenberg WM, Cramp ME, Hindman SJ, Razavi H, Ryder SD, Parkes J (2014) The disease burden of chronic hepatitis C virus (HCV) infection in England. Poster. International Liver Congress, London: 9–13 April
World Health Organization (2014) Guidelines for the screening, care and treatment of persons with hepatitis C infection. <http://who.int/hiv/pub/hepatitis/hepatitis-c-guidelines/en/> (accessed 24 April 2014)



Film dressing prevents skin reactions during radiation therapy

A study from the University of Otago in New Zealand has shown that the use of Mepitel Film dressings prevents the development of moist desquamation: painful skin ulcerations associated with breast cancer radiation therapy (Herst et al, 2014).

Radiation-induced skin reactions occur in 80–90% of breast cancer patients and can range from mild redness to ulceration, with symptoms of pain, burning and itchiness. This can have a negative impact on day-to-day life for patients who already have to cope with being diagnosed with and treated for cancer.

Dr Patries Herst and colleagues found that using Mepitel Film, a thin, transpar-

ent dressing using Mölnlycke Health Care's Safetac technology, during and up to 4 weeks after radiation therapy, prevents the development of moist desquamation and reduces the severity of other skin reactions.

A total of 78 patients undergoing radiation therapy for breast cancer took part in the trial. Each patient's irradiated skin area was divided into two halves, with Mepitel Film used on one side and aqueous cream on the other.

There were no cases of ulceration or severe skin reactions on the skin under Mepitel Film, while cream-treated skin developed these wounds in 26% of patients. Skin reactions that did develop under Mepitel Film were 92% less

severe than in the cream-treated control group.

The dressings can be left on during radiation therapy because they are transparent and do not affect radiation treatment (produce a negligible dose build-up).

The difference in skin reac-

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tion severity was not caused by a difference in dose to the skin covered in film or cream.

Safetac dressings work by gently adhering to the skin and preventing additional friction damage by clothing and other body parts. Dr Herst commented: 'Preventing mechanical friction from the start of radiation treatment may be a more effective approach than focusing on anti-inflammatory and wound healing interventions'.

Herst PM, Bennett NC, Sutherland AE, Peszynski RI, Paterson DB, Jasperse ML (2014) Prophylactic use of Mepitel Film prevents radiation-induced moist desquamation in an intra-patient randomised controlled clinical trial of 78 breast cancer patients. *Radiation Oncology* **110**(1): 137–43 (doi: 10.1016/j.radonc.2014.01.005)