

Needle and syringe programmes are highly cost effective at preventing hepatitis C virus transmission

Providing clean injecting equipment through needle and syringe programmes is a highly cost-effective way of preventing hepatitis C virus transmission among people who inject drugs, according to new research (<https://doi.org/10.1111/add.14519>).

Using data from Bristol, Dudley and Walsall, researchers estimated the costs of existing programmes in each city, modelled their impact on the spread of hepatitis C virus infection, then estimated their cost effectiveness.

In all three areas, current needle and syringe programmes resulted in lower health-care and treatment costs compared to if the programmes were stopped. The researchers also found that needle and syringe programmes would continue to be cost effective if hepatitis C virus treatment rates increased or treatment costs reduced, because of their effectiveness in preventing re-infection.

Automated phone calls may help patients to take medicines as prescribed

Remembering to take medication is vital for managing many long-term health conditions. A pilot study suggests that using interactive voice response technology supports patients to take their medicine as prescribed (<https://doi.org/10.1136/bmjopen-2018-024121>).

Seventeen patients with high blood pressure received daily automated telephone calls for 1 month. Calls were tailored to patients' needs, providing advice and support about taking their prescribed medicines. The calls also asked a series of interactive questions and reacted to the patients' answers.

Patients reported that the intervention helped them overcome barriers to taking medications and helped them understand the importance of taking medication itself.



Recommendations outlined to make ambulance transfers safer

A lack of national guidance and standard practice for ambulance transfers could be putting patients at risk,

according to a new report from the Healthcare Safety Investigation Branch (2019).

The investigation found that there is variance of care in emergency transfers because there is a lack of national guidance. Although guidance is in place for planned ambulance transfers, it is complex and not always standardized across networks.

It also found that the pre-alert process (where the ambulance crew phones ahead to prepare the hospital) is inconsistent in terms of length, the volume and order of information, and who delivers that information.

The report sets out two safety recommendations:

- The Department for Health and Social Care should coordinate the development of national guidance, with the arm's length bodies, for the transfer of critically ill adults, both planned and emergency
- The Association of Ambulance Chief Executives should work with partners to define best practice standards for the criteria, format, delivery and receipt of ambulance service pre-alerts.

Healthcare Safety Investigation Branch. 2019. Transfer of critically ill adults. (accessed 24 January 2019) https://www.hsib.org.uk/documents/84/hsib_report_transfer_of_critically_ill_adults.pdf

Characterizing long-term risk of developing solid cancers in survivors of childhood Hodgkin lymphoma

New research refines existing evidence that survivors of childhood Hodgkin lymphoma face an elevated risk of developing various types of solid tumours many years later (Holmqvist et al, 2018). In addition, certain subgroups of patients have an especially high risk.

To investigate, Dr Smita Bhatia, of the University of Alabama at Birmingham, and her colleagues analysed information on 1136 patients who were diagnosed with Hodgkin lymphoma before the age of 17 years between 1955 and 1986. Over a median length of follow up of 26.6 years, 162 patients developed solid cancers. The survivors had a 14-fold increased risk of developing cancer compared with the general population. The researchers also noted that the cumulative incidence of any solid cancer was 26.4% 40 years after a Hodgkin lymphoma diagnosis.

Risk factors for breast cancer among women were Hodgkin lymphoma diagnosis between 10 and 16 years of age and chest radiation. Men treated with chest radiation before 10 years of age were at highest risk of developing lung cancer. Hodgkin lymphoma survivors treated

with abdominal or pelvic radiation and high-dose alkylating agents were at highest risk for colorectal cancer, and women exposed to neck radiation before 10 years of age were at highest risk for thyroid cancer. By 50 years of age, the cumulative incidence of breast, lung, colorectal and thyroid cancer was 45.3%, 4.2%, 9.5% and 17.3% respectively among those at highest risk.

The authors concluded that survivors of childhood Hodgkin lymphoma remain at an increased risk of developing solid subsequent malignant neoplasms.

Dr Bhatia commented: 'We were able to use host and clinical characteristics to identify subgroups of Hodgkin lymphoma survivors who were particularly vulnerable to developing these new cancers.' She noted that these findings could be useful for developing screening strategies for individual survivors.

Holmqvist AS, Chen Y, Berano Teh J et al. Risk of solid subsequent malignant neoplasms after childhood Hodgkin lymphoma-identification of high-risk populations to guide surveillance: A report from the Late Effects Study Group. *Cancer*. 2018 Dec 17. <https://doi.org/10.1002/cncr.31807>

Asleep blood pressure: prognostic marker of vascular risk and therapeutic target for prevention

Blood pressure while asleep is a stronger risk factor for cardiovascular disease events than mean awake and 24-hour blood pressure, but the potential role of sleep blood pressure as a therapeutic target for reducing cardiovascular disease risk is uncertain. A prospective study (Hermida et al, 2018) investigated whether cardiovascular disease risk reduction is most associated with progressive decrease of office, ambulatory awake or asleep mean blood pressure.

The authors prospectively evaluated 18 078 individuals with baseline ambulatory blood pressure ranging from normotension to hypertension. At inclusion and at scheduled visits during follow up, ambulatory blood pressure was measured for 48 consecutive hours. During the 5.1-year median follow up, 2311 individuals had events, including 1209 experiencing the primary outcome (composite of cardiovascular disease death, myocardial infarction, coronary



Professor Ramón C Hermida Domínguez, Director, Bioengineering & Chronobiology Labs, Atlantic Research Center for Information and Communication Technologies, E.I. Telecomunicacion, University of Vigo, Vigo, Spain

revascularization, heart failure and stroke).

The asleep mean systolic blood pressure was the most significant blood pressure-derived risk factor for the primary outcome, regardless of office and awake systolic blood pressure. The progressive attenuation of asleep systolic blood pressure was the most significant marker of event-free survival, regardless of changes in office or awake mean systolic blood pressure during follow up.

Talking about the findings, Professor Ramón C Hermida Domínguez, from the University

of Vigo, Spain, emphasized that: 'Treatment-induced decrease of asleep blood pressure is associated with significantly lower risk of cardiovascular disease morbidity and mortality'.

Hermida RC, Crespo JJ, Otero A et al; Hygia Project Investigators. Asleep blood pressure: significant prognostic marker of vascular risk and therapeutic target for prevention. *Eur Heart J*. 2018 Dec 14;39(47):4159–4171. <https://doi.org/10.1093/eurheartj/ehy475>

Eicosapentaenoic acid and aspirin, alone and in combination, for prevention of colorectal adenomas

The omega-3 polyunsaturated fatty acid eicosapentaenoic acid (EPA) and aspirin both have proof of concept for colorectal cancer chemoprevention and an excellent safety profile. Therefore a multicentre, randomized, double-blind, placebo-controlled trial was carried out in individuals with sporadic colorectal neoplasia detected at colonoscopy to assess the efficacy of EPA and aspirin alone, in combination and compared with a placebo (Hull et al, 2018).

Between 2011 and 2016, 709 participants were randomly assigned to four treatment groups (176 to placebo, 179 to EPA, 177 to aspirin and 177 to EPA plus aspirin).

The adenoma detection rate was 61% in the placebo group, 63% in the EPA group, 61% in the aspirin group, and 61% in the EPA plus aspirin group, with no evidence of any effect for EPA or aspirin.

EPA and aspirin were well tolerated, although the number of gastrointestinal adverse events was increased in the group taking EPA alone.

The researchers concluded that neither EPA nor aspirin treatment was associated with a reduction in the proportion of patients with at least one colorectal adenoma. Further research is needed regarding the effect on colorectal adenoma number according to adenoma type and location. Optimal use of EPA and aspirin might need a precision medicine approach to adenoma recurrence.

Hull MA, Sprange K, Hepburn T et al; seAFOod Collaborative Group. Eicosapentaenoic acid and aspirin, alone and in combination, for the prevention of colorectal adenomas (seAFOod Polyp Prevention trial): a multicentre, randomised, double-blind, placebo-controlled, 2 × 2 factorial trial. *Lancet*. 2018 Dec 15;392(10164):2583–2594. [https://doi.org/10.1016/S0140-6736\(18\)31775-6](https://doi.org/10.1016/S0140-6736(18)31775-6)

Guidelines for safe practice of total intravenous anaesthesia

The Association of Anaesthetists and the Society for Intravenous Anaesthesia have produced the first nationally agreed guidelines on the use of total intravenous anaesthesia (<https://doi.org/10.1111/anae.14428>). These include key recommendations on best practice for administration and monitoring of total intravenous anaesthesia.

More patients eligible for cochlear implants

Hundreds more people with severe to profound deafness will be eligible for cochlear implants each year, after a review of the definition of severe to profound deafness used to identify if a cochlear implant might be appropriate. Severe to profound deafness is now recognized as only hearing sounds louder than 80 dB HL (previously 90 dB HL) at two or more frequencies without hearing aids.

Quality of perioperative diabetes care: NCEPOD report

The National Confidential Enquiry into Patient Outcome and Death report into perioperative care of patients with diabetes (https://www.ncepod.org.uk/2018pd/Highs%20and%20Lows_Full%20Report.pdf) identifies substantial unwarranted variation in the preoperative assessment, perioperative and intraoperative management, recovery and discharge of these patients.

Positive self belief key to recovery from pain

People are more likely to recover from shoulder pain if they have the confidence to carry on doing most things despite their pain, according to new research (<https://doi.org/10.1136/bjsports-2018-099450>).

The study included 1030 people attending physiotherapy for treatment of musculoskeletal shoulder pain. The team collected information on 71 patient characteristics and clinical examination findings before and during the first physiotherapy appointment. A total of 811 people provided information on their shoulder pain and function 6 months later.

Lead researcher Dr Rachel Chester, from the School of Health Sciences, University of East Anglia, Norwich, said: 'We looked at people who started off with a high level of pain and disability and found that the more they believed in their own ability to do things and reach a desired recovery outcome, the less likely they were to be in pain and have limited function after 6 months.'

She added: 'These people were more likely to have a better outcome than people who reported a low level of baseline pain and disability but had low pain self-efficacy. In addition, on average, people who expected to recover because of physiotherapy did better than those who expected minimal or no benefit.'

Common conditions associated with genetic variants of hereditary haemochromatosis

A cohort study was carried out across 22 centres in England, Scotland and Wales in UK Biobank to compare prevalent and incident morbidity and mortality between people with the HFE p.C282Y genetic variant (responsible for most cases of hereditary haemochromatosis type 1) and those with no p.C282Y mutations, in a large UK community sample (Pilling et al, 2019).

The study included 451 243 volunteers of European descent aged 40–70 years, with a mean follow up of 7 years (maximum 9.4 years) through hospital inpatient diagnoses and death certification.

Of 2890 participants homozygous for p.C282Y (0.6%, or 1 in 156), haemochromatosis was diagnosed in 21.7% of men and 9.8% of women by the end of follow up. p.C282Y homozygous men aged 40–70 years had a higher prevalence of diagnosed haemochromatosis, liver disease, rheumatoid arthritis, osteoarthritis and diabetes mellitus than those with no p.C282Y mutations ($n=175\ 539$).

During the 7-year follow-up period, 15.7% of homozygous men developed at least one incident associated condition *vs* 5.0% ($P<0.001$) with no p.C282Y mutations



Professor David Melzer, Professor of Epidemiology and Public Health, University of Exeter Medical School, Exeter

(women 10.1% *vs* 3.4%, $P<0.001$). Haemochromatosis diagnoses were more common in p.C282Y/p.H63D heterozygotes, but excess morbidity was modest.

As p.C282Y associated iron overload is preventable and treatable if intervention starts early, these findings justify re-examination of options for expanded early case ascertainment and screening.

Commenting on the results, Professor David Melzer, Professor of Epidemiology and Public Health, University of Exeter Medical School, Exeter, said: 'Our study and other recent research shows that those with the main mutations (HFE C282Y homozygous) frequently develop severe arthroses and tiredness, including in older patients.'

He added: 'Currently many patients are diagnosed only after irreparable damage has been done. As treatment (venesection) is effective, safe and inexpensive if started early, there is a strong case for routine clinical testing for this condition.'

Pilling LC, Tamosauskaite J, Jones G et al. Common conditions associated with hereditary haemochromatosis genetic variants: cohort study in UK Biobank. *BMJ*. 2019 Jan 16;364:k5222. <https://doi.org/10.1136/bmj.k5222>

Effect of birthweight and early pregnancy body mass index on risk of developing pre-eclampsia, and gestational hypertension or diabetes

Women who were born with a low birthweight are at increased risk of pregnancy complications, according to a new study (Andraweera et al, 2018). The findings suggest that women who were born small may have been affected by unfavourable intrauterine conditions, and the physiological demands of pregnancy may act as a 'second hit' leading to pregnancy complications.

In the study of 5336 women, those who reported a birthweight under 2500 g had a 1.7 times higher risk of developing pre-eclampsia during pregnancy than those

who had a birthweight of 3000–3499 g. Women who reported a birthweight of 3500–3999 g or a birthweight of 4000 g or higher had a 40% reduced risk of pre-eclampsia compared to the control group.

Women who reported a low birthweight were at increased risk of developing gestational hypertension and gestational diabetes compared with women who had a normal birthweight. Risks were especially high for women who had a low birthweight but later became overweight or obese.

Commenting on the findings, lead author Dr Prabha Andraweera, of the

University of Adelaide, Australia, said: 'Further studies assessing the influence of modifiable factors including diet and exercise on the relationship between low birthweight and pregnancy complications may yield important results on whether modifiable lifestyle factors could reduce the risk of pregnancy complications among those born small.'

Andraweera PH, Dekker G, Leemaqz S et al; SCOPE Consortium. Effect of birth weight and early pregnancy BMI on risk for pregnancy complications. *Obesity* (Silver Spring). 2018 Dec 19. <https://doi.org/10.1002/oby.22375>

Guidance for meta-ethnography enables collation and analysis of qualitative studies

Experts have advanced an approach that enables the effective collation and analysis of qualitative studies, such as information from patient interviews and focus groups, and created the first-ever tailored reporting guidance for the methodology, known as meta-ethnography (France et al, 2019).

Meta-ethnography involves systematically comparing conceptual data from primary qualitative studies to identify and develop new overarching concepts, theories and models.

It enables researchers to combine the findings of qualitative studies rather than concentrating on the individual cases. The new guidance includes recommendations on all aspects of meta-ethnography conduct and reporting, from selecting studies to analysing data.

The quality of reporting of meta-ethnographies is often poor – meaning that patient groups and NHS managers often lack trust in the findings and do not use them to



Dr Emma France, Faculty of Health Sciences and Sport and the Nursing, Midwifery and Allied Health Professions Research Unit, University of Stirling, Stirling

improve their decisions, services and patient care.

The team reviewed existing literature, consulted experts, carried out consensus studies with researchers and members of the public, and interviewed professionals working in non-academic settings.

Lead author Dr Emma France, of the Faculty of Health Sciences and Sport and the Nursing, Midwifery and Allied Health Professions Research Unit, University of Stirling, Stirling, said: ‘Pulling together

evidence from many existing qualitative studies, including those using patient interviews or focus groups, can shed light on important factors, such as why patients or health professionals behave in a certain way, or what it’s like to experience an illness.’

France EF, Cunningham M, Ring N et al. Improving reporting of meta-ethnography: The eMERGe reporting guidance. *Psychooncology*. 2019 Jan 15. <https://doi.org/10.1002/pon.4915>

Finger joint enlargements may be linked to structural damage seen with knee osteoarthritis

Heberden’s nodes are bony enlargements of the finger joints which are readily detectable in a routine physical exam and are considered hallmarks of osteoarthritis (*Figure 1*). The presence of Heberden’s nodes may also indicate structural damage associated with knee osteoarthritis (Haj-Mirzaian et al, 2019).

A study of 395 patients with Heberden’s nodes and 188 without found significant associations between the presence of Heberden’s

Figure 1. Heberden’s node on finger in osteoarthritis.



nodes and measures of knee osteoarthritis seen on magnetic resonance imaging.

The authors noted that additional studies are needed to better understand the mechanisms behind the link between Heberden’s nodes and knee osteoarthritis.

‘These exploratory results have motivated us to initiate more focused investigations to further characterize the nodal osteoarthritis phenotype and tailor specific treatments for patients in future trials,’ stated senior author Dr Shadpour Demehri, The Russell H Morgan Department of Radiology and Radiological Science, Johns Hopkins University School of Medicine, Baltimore, Maryland.

Haj-Mirzaian A, Mohajer B, Guermazi A et al. Heberden’s nodes and knee osteoarthritis-related osseous structural damage: exploratory study from the Foundation for the National Institute of Health. *Arthritis Rheumatol*. 2019 Jan 9. <https://doi.org/10.1002/art.40811>

Impact of geographical origin on the electrical and structural manifestations of the black athlete’s heart

Black athletes demonstrate an increased prevalence of repolarization anomalies and left ventricular hypertrophy compared to their white counterparts. However, little attention is given to whether differences depend on geographical origin, so a study examined the impact of this upon the electrical and structural manifestations of the black athlete’s heart (Riding et al, 2019).

A total of 1698 male competitive athletes participating in mixed sports presented for 12 lead-electrocardiogram led pre-participation screening, with 1222 athletes undergoing systematic echocardiography. Black athletes were categorized against United Nations-defined geographical regions and compared with a cohort of non-black athletes who shared a close geographical border with Africa.

The prevalence of an abnormal electrocardiogram suggestive of cardiac pathology significantly varied by geographical origin. Repolarization abnormalities were significantly more common among west and middle African athletes than east and north Africans ($P < 0.05$). Left ventricular hypertrophy was significantly more common among African-American/Caribbean and west African athletes than west Asian, east and north African athletes ($P < 0.05$). This remained after accounting for body size.

The collective term ‘black’ should not imply that the hearts of all black athletes are universally comparable. There is considerable variability in the cardiac electrical and structural remodelling response to exercise that appears to be dependent on geographical origin.

Riding NR, Sharma S, McClean G, Adamuz C, Watt V, Wilson MG. Impact of geographical origin upon the electrical and structural manifestations of the black athlete’s heart. *Eur Heart J*. 2019 Jan 1;40(1):50–58. <https://doi.org/10.1093/eurheartj/ehy521>