Playing the odds

Twice now in about as many months she’s led me, when I’m only half attending, into this trap.

First she tells me of a raffle ticket she bought for a chance to win a car. “Yes, you told me that,” I say, “I hope you win.” (See how I’ve forgotten where this story leads?)

Then she lays out the odds: “They’re only selling 500 tickets . . . I think I have a pretty good chance, don’t you?”

(Of course, this is where I should say, “No, actually, one in 500 may seem like good odds, but in fact it means you have almost no chance of winning the car.”) Instead I say, with my mind a bit on other things, “You do. You might actually win. That would be great.”

Then she tosses out part two: “And the chances that my breast cancer will come back are only eight in 100. Funny how that seems like it’s pretty unlikely isn’t it?”

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Patient consent obtained.

We welcome contributions to this column via our online editorial office: https://mc.manuscriptcentral.com/bmj.

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CLINICAL UPDATES

WHO recommends management of hepatitis C in primary care

To maximise coverage of treatment for hepatitis C, infected people should be treated in general practice or clinics within primary care rather than by hepatitis specialists, says new WHO guidance. This is particularly important for low income countries. For this to become a reality, healthcare workers will need to be trained to treat hepatitis C infection, and clinics will need to be equipped appropriately.

• http://bit.ly/1TgSQ96

Pre-exposure prophylaxis for HIV prevention

The British Association for Sexual Health and HIV (BASHH) and British HIV Association (BHIVA) have released a joint position statement on pre-exposure prophylaxis (PrEP) for HIV prevention. It concludes that alongside other HIV prevention strategies, PrEP should be made available to the HIV negative heterosexual and same sex partners of HIV positive patients who do not have suppressed viral replication. It should also be available to men who have sex with men, trans-women and trans-men who engage in anal sex without condoms, and heterosexuals at high risk of infection. PrEP is not currently provided on the NHS in England and Wales, but BASHH and BHIVA suggest that clinicians have a duty to inform at risk patients that it can be bought legally from pharmacies outside of the EU or with a private prescription from a UK pharmacy.

• http://bit.ly/1sB4ss3

Hypothermia can develop in people with normal thermoregulation when they are exposed to very cold environments, immobilisation, or immersion in cold water. Older people are at particular risk, and drugs such as β blockers, antipsychotics, and antidepressants may interfere with the body’s ability to regulate temperature. Alcohol ingestion and concurrent illness such as hypothyroidism, stroke, Parkinson’s disease, and Alzheimer’s dementia can also contribute.

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STATE OF THE ART REVIEW: HIGHLIGHTS

Sepsis: pathophysiology and clinical management

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This is an edited version, full version is on thebmj.com

Introduction

In February 2016, the European Society of Intensive Care Medicine and the Society of Critical Care Medicine (SCCM) published new consensus definitions of sepsis and related clinical criteria (fig 1; Sepsis-3). The most important changes were:

- The terms SIRS and severe sepsis were eliminated
- Sepsis is now defined as life threatening organ dysfunction caused by a dysregulated host response to infection
- Organ dysfunction is newly defined in terms of a change in baseline SOFA (sequential organ failure assessment) score
- Septic shock is defined as the subset of sepsis in which underlying circulatory and cellular or metabolic abnormalities are profound enough to increase mortality substantially.

Host differences in the incidence and outcome

Demographics

Women have a lower incidence of severe sepsis, yet mortality results are mixed. Older patients are far more likely to develop sepsis.

Immunosuppression and cancer

Conditions that suppress innate and adaptive immunity are risk factors for sepsis. Chronic conditions that suppress the immune system—including HIV/AIDS, cirrhosis, asplenia, and autoimmune disease—are heavily represented in large epidemiologic studies of patients with sepsis.

Patients with cancer are often immunosuppressed, from both the cancer and its treatment.

Genetic variants

A landmark study of more than 1000 people who had been adopted in the 1920s to the 1940s in Denmark reported a remarkable increase in the risk of death by infection before the age of 50 if a biological parent died of an infectious cause (relative risk 5.8 (95% confidence interval 2.4 to 13.7) v 0.7 (0.1 to 5.4) for an adoptive parent). Although generated in an era before the widespread use of antibiotics, these data provide strong evidence that the tendency to succumb to overwhelming infection is in part heritable.

Modifiable risk factors

Alcohol consumption has been shown in adjusted epidemiologic analyses to increase the risk of sepsis and related organ failure and mortality. Although tobacco is now a well established risk factor for acute respiratory distress syndrome (ARDS), evidence linking smoking to sepsis has been less robust. Cigarette smoking has been associated with a several-fold increase in the risk of invasive pneumococcal disease, and it has been shown to increase the risk of septic shock (odds ratio 2.1) and 30 day mortality (5.0) in pneumococcal pneumonia. Smoking also seems to predispose patients to postoperative infections. Finally, vaccination has been shown to reduce the incidence of sepsis caused by specific pathogens, including Haemophilus influenzae.

Pathogenesis

Septic organ dysfunction often perpetuates critical illness in a self reinforcing manner through several well defined pathways:

- ARDS often requires mechanical ventilation, which itself can further injure the lungs and enhance systemic inflammation
SUMMARY
Sepsis, severe sepsis, and septic shock represent increasingly severe systemic inflammatory responses to infection. Sepsis is common in the aging population, and it disproportionately affects patients with cancer and underlying immunosuppression. In its most severe form, sepsis causes multiple organ dysfunction that can produce a state of chronic critical illness characterised by severe immune dysfunction and catabolism. Outcomes in sepsis have greatly improved overall, probably because of an enhanced focus on early diagnosis and fluid resuscitation, the rapid delivery of effective antibiotics, and other improvements in supportive care for critically ill patients. These improvements include lung protective ventilation, more judicious use of blood products, and strategies to reduce nosocomial infections.

HOW PATIENTS WERE INVOLVED IN THE CREATION OF THIS ARTICLE
A 20 year old survivor of severe pneumococcal sepsis and acute respiratory distress syndrome who required a lung transplant, as well as his mother, kindly accepted an invitation to review the manuscript as patient reviewers for The BMJ.

As a result of their input, we clarified several areas of the article and put more emphasis on the role of vaccines in preventing illness and on improvements in supportive critical care.

Treatment
Early and effective antimicrobial treatment
A retrospective review of 2700 Canadian patients admitted with septic shock between 1989 and 2004 found that only 50% received effective antibiotics within six hours of the onset of hypotension. Each hour of delay in antibiotic administration after the onset of shock was associated with a nearly 12% reduction in survival (odds ratio 1.12 per hour delay, 1.103 to 1.136). A more recent retrospective analysis in 2014 of 18 000 patients admitted to 165 ICUs with septic...
shock or severe sepsis also found that adjusted hospital mortality steadily increased as the delay in antibiotic administration increased (one hour: 25.9%, 24.5% to 27.2%; >6 hours: 33.1%, 30.9% to 35.3%). A meta-analysis in 2015 of 11 studies failed to show increased mortality in patients receiving antibiotics more than one hour (odds ratio 1.46, 0.89 to 2.40) or three hours (1.16, 0.92 to 1.46) after the recognition of severe sepsis or septic shock.

Resuscitation
An influential single center study was published in 2001 (fig 3) that randomised a more homogeneous group of 263 patients with SIRS and hypotension (or lactate of at least 4 mmol/L) within one to two hours of admission to the emergency department to one of two protocols for six hours. Standard therapy targeted central venous pressure of 8-12 mm Hg, mean arterial pressure of 65-90 mm Hg, and urine output of 0.5 mL/kg/h using crystalloid or colloid infusions and vasopressors. “Early goal directed therapy” (EGDT) targeted the same three parameters as well as a central venous oxygen saturation of 70% using red blood cell transfusions and inotropes as needed. The EGDT group had a 16% absolute improvement in in-hospital mortality (4.7% v 31%; relative risk 0.58, 0.38 to 0.87). On the basis of this trial, the EGDT protocol was widely adopted (including a grade 1C recommendation from the SSC).

In the past two years, three large multicenter randomized controlled trials (RCTs) from the US (ProCESS)141, the UK (ProMISE)142, and Australia and Asia (ARISE)143 have been published (>4200 patients in total) that each compared the EGDT protocol with usual care (fig 5). These three studies all found that EGDT did not significantly affect survival, indicating that other improvements in sepsis and critical care explain the improved outcomes.

Uncertainties still exist regarding the optimal type of fluid, the optimal volume, and the best way to monitor the response to therapy.

Fluid type
Level I evidence suggests that starches should be avoided,142 and that albumin is not clearly beneficial relative to crystalloid (fig 3). A prospective open label pilot study of 1533 ICU patients during a control period followed by a six month period of restricted use of high chloride fluids (normal saline, 4% albumin) suggested that high chloride fluids may cause acute kidney injury (odds ratio for AKI during restricted period 0.52, 0.37 to 0.75). Although a recent double blind RCT of 2278 ICU patients in New Zealand reported no reduction in AKI with buffered crystalloid compared with saline (fig 3), the population was low to moderate risk for this outcome and exposure to the study fluid was modest (mean about 2 L).140

Resuscitation volume
It is widely considered standard of care to administer several liters of fluid in severe sepsis and septic shock (as was the case in all patients in the three recent large trials). No high quality RCT evidence exists to support this practice, and a single randomised study of critically ill children in resource poor settings lacking advanced therapies for pulmonary oedema questioned its safety. Nonetheless, it remains expert opinion that the decrease in septic shock mortality over the past several decades reflects in part the benefits of early fluid resuscitation.

Resuscitation adequacy
Over the past several decades many ICU physicians have moved away from the assessment of static cardiac filling pressures and towards dynamic indices of physiology. These include ultrasound assessments of central venous volume and left ventricular function, although it is worth reiterating that the evidence basis for trying to augment cardiac output in patients with sepsis is weak. Furthermore, excessive fluid administration in the setting of a more permeable endothelium can exacerbate organ dysfunction, including the development of acute respiratory failure from ARDS. In addition, multiple investigators have shown that positive fluid balance in these patients is an independent risk factor for death.

Lactate clearance was popularised by a 2010 study in 300 patients with sepsis that showed non-inferiority to EGDT, and although not used in the recent three large negative trials of EGDT, many practitioners continue to measure serial lactate values to inform resuscitation targets. The optimal systemic blood pressure is also unknown, with a recent study reporting that targeting a mean arterial pressure of 80-85 mm Hg compared with 60-65 mm Hg modestly improved renal function, although rates of atrial fibrillation were increased and no difference in survival was seen (fig 3).

Timing and choice of vasopressors
It is unclear when vasopressors should be started during the resuscitation of septic shock. Most practitioners give at least 2-3 L crystalloid or colloid to adults before starting a vasopressor. Although limited by its retrospective design and reliance on complex statistical methods, a recent evaluation of the interaction between fluid and vasopressor administration in nearly 3000 patients with septic shock found that mortality was lowest when vasopressors were started one to six hours after onset and when at least 1 L of fluid was given during the first hour. A 2011 systematic review of 23 randomised trials of patients with shock found no convincing evidence for the superiority of one vasopressor over another. However, an influential meta-analysis from 2012 reported a higher mortality associated with dopamine than with norepinephrine (noradrenaline). Accordingly, the most recent SSC guidelines recommend norepinephrine as first line agent, epinephrine (adrenaline) or low dose vasopressin as second line agents, and the avoidance of dopamine and phenylephrine as empiric vasopressor therapy.

Transfusion threshold
ProCESS, ProMISE, and ARISE suggested that a strategy of increasing oxygen delivery with red blood cell transfusions as part of EGDT did not improve survival. The recent TRISS study that randomised nearly 1000 patients with septic shock in 32 Scandinavian ICUs to a transfusion threshold of 70 or 90 g/L hemoglobin found no difference in 90 day mortality or the rate of ischaemic events (fig 3).

Other supportive care
Lung protective ventilation
In 2000, low tidal volume ventilation in patients with ARDS was shown to have a marked survival benefit, with an absolute reduction in hospital mortality of 8.9%. A subsequent analysis showed that this benefit extended to patients with sepsis who had ARDS.

Restrictive fluid therapy once initial resuscitation is accomplished
In a trial of 1000 patients with ARDS randomised to a conservative or liberal fluid management strategy (once out of shock), the conservatively managed patients had a better oxygenation index and higher number of ventilator-free days (14.6 (0.5) v 12.1 (0.5); P<0.001).154 Notably, there were trends towards improved survival (25.5% v 28.4%, P<0.3) and less dialysis within 60 days in the conservatively managed patients (10% v 14%; P=0.06).
Catheters and tubes

Rates of ventilator associated pneumonia have decreased, partly because of the engineering of endotracheal tubes to decrease biofilm formation and microaspiration, as well as improved oral hygiene. Improvements in intravascular catheter design, placement technique, maintenance, and timely removal have reduced nosocomial infections, as well as have criteria for the removal of unnecessary urinary catheters.

Nutrition and glucose management

The proper timing and intensity of nutritional support remains unclear. There is some weak older evidence for reduced infectious complications with enteral feeding, but recent randomised trials report no benefit with more aggressive enteral or parenteral nutritional supplementation. These results have led the SSC to recommend enteral feedings as tolerated. Patients with sepsis are often hyperglycaemic, yet the optimal glucose target is unknown. The SSC now recommends insulin therapy to maintain glucose <180mg/dL.

Competing interests

None declared.

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UNCERTAINTIES

Do dressings prevent infection of closed primary wounds after surgery?

Jane Blazeby on behalf of the Bluebelle Study Group

WHAT YOU NEED TO KNOW

- There is insufficient evidence to know whether dressings reduce the risk of surgical site infection in closed primary surgical wounds.
- Basic adhesive dressings may be used on closed primary surgical wounds as a pragmatic approach to provide a barrier to the wound and to absorb exudate.
- In specialties where it is common practice to not use dressings, continue with this practice until further evidence emerges.

A dressing may be applied, with the expectation of improved healing, management of exudate, or reduced chance of surgical site infection.

HOW PATIENTS WERE INVOLVED IN THE CREATION OF THIS ARTICLE

Five patients who had undergone surgery were interviewed as part of the Bluebelle study to explore their views of dressings or no dressing. They discussed it in a group and provided comments and suggestions, but these did not affect the content of this article.

Members of the Bluebelle Study Group are listed in the full article on thebmj.com

Box 1 | Summary of dressings types (from the British National Formulary*)

| Basic wound contact dressing | Low adherence, usually cotton pads placed in contact with the wound, and may be absorbent |
| Advanced wound dressings* | |
| Hydrogel | Amorphous, cohesive topical application that can take up the shape of a wound |
| Vapour permeable | Allow the passage of water vapour and oxygen but are impermeable to water and micro-organisms |
| Soft polymer | Include soft silicone polymer that may be adherent or non-adherent |
| Hydrocolloid | Occlusive hydrocolloid layer on a vapour permeable film |
| Foam | Contain hydrophilic polyurethane foam (adhesive or non-adhesive) |
| Alginate | Highley absorbent calcium alginate or sodium alginate, can be combined with collagen |
| Capillary action | Absorbent core of hydrophilic fibres sandwiched between low-adherent wound-contact layers |
| Odour absorbent | Contain activated charcoal to absorb odour from wounds |
| Antimicrobial dressings | May contain honey, iodine, silver, and other antimicrobials |
| Complex adjuvant therapies | Topical negative pressure therapy |
| Tissue adhesive as a dressing | Topical skin adhesive |

* Defined according to their primary component. †Adhesive and may have absorbent properties recommended for closed primary surgical wounds.

After surgery, the wound must try to heal. A dressing may be applied, with the expectation of improved healing, management of exudate, or reduced chance of surgical site infection. Surgical site infection is of particular importance to health services and patient outcomes. However, whether dressings are necessary and influence these issues is uncertain. Here we discuss uncertainty about wound dressings in closed primary surgical wounds.

A closed primary surgical wound is formed when the skin edges of the surgical wound are approximated. Wounds may be closed with sutures or clips. Epithelisation and connective tissue deposition seal the join. The wound may then be covered with a dressing. Many different types are available (box 1).

Tissue adhesive “glue” may also be added as a dressing to a closed wound (figure).

Theoretically, dressings might limit surgical site infection by providing a barrier to exogenous environmental contamination with bacteria, or they might increase surgical site infection by incubation of endogenous commensal organisms (that is, bacteria present from the time of surgery). However, a difficulty in designing any trial to answer this question is that surgical site infection is hard to define or diagnose. Surgical site infection is defined by localised signs...
(redness, heat, pain, and swelling, and pus may be visible). Diagnosis can be difficult and confusion arise because a naturally healing wound can exhibit some of the signs of infection and because microbiological confirmation of infection is difficult to obtain consistently. These challenges mean that existing measures of wound infection, although widely used, have limited validity and reliability.25 Surgical site infection may be superficial, deep, or affecting an organ space. While superficial infection may be self-limiting and require minimal intervention, more serious surgical site infection requires re-operation and a prolonged hospital stay with a major cost to the health service.67 Infection risk varies according to surgical procedure (clean, clean/contaminated, contaminated, or dirty), whether surgery is planned, and patient factors. After high risk, dirty-infected procedures (such as unplanned colorectal surgery), infection risk may reach 25%, whereas the risk after elective clean surgery is typically less than 5% (for example, 4.6% for coronary artery bypass surgery and 1% for breast surgery).8 If post-discharge surveillance is undertaken, increased rates of surgical site infection are noted for all procedures.

Images of a closed primary surgical wound (A) without a dressing, (B) with tissue adhesive added “as a dressing,” (C) with an adherent and transparent dressing, and (D) with an adherent and absorbent dressing.

**What is the evidence of uncertainty?**

A Cochrane systematic review summarising the evidence for the use of dressings or “no dressing” to prevent surgical site infection in people with closed primary surgical wounds was published in 2011 and updated in 2014.910 Twenty randomised controlled trials were included. All were at an unclear or high risk of bias. Only two compared leaving wounds exposed (“no dressing”) with applying a dressing. The remainder compared one type of dressing with another; none reviewed tissue adhesive as a dressing. There was insufficient evidence to conclude which type of dressing reduced surgical site infection or whether dressings were needed at all. Evidence for the role of dressings to manage exudate or symptoms is lacking because validated and reliable measures of practical wound management and patient experience are not available.910

To supplement the review, we systematically searched for randomised controlled trials evaluating application of tissue adhesive as a dressing on closed primary surgical wounds (box 2). We screened 319 abstracts, reviewed 19 full papers, and included two trials.1112 Both were small (<100 patients), single centre, and limited to specific operations (adult abdominoplasty and paediatric laparoscopic appendectomy). Both were assessed as having a high or unclear risk of bias. For common operations, therefore, there is essentially no evidence about the effectiveness of tissue adhesive when used as a dressing.

The Cochrane review concluded that, because of the lack of evidence, current decision making about dressings may need to be informed (perhaps for pragmatic reasons) by practical issues such as wound symptom management and costs rather than surgical site infection.
What are the practical issues and costs of wound dressings versus no dressing?

Dressings may provide practical wound management and symptom control. Dressings absorb exudates and provide a barrier to being directly knocked or caught on something. They may reduce patient anxiety by covering the incision. Leaving a wound exposed without a dressing, however, may be beneficial by providing easy visualisation of the wound to aid prompt assessment of an impending problem and allay fears of what might be underneath the dressing. Not covering a closed wound after surgery may be especially important in children because it avoids the need for painful removal of dressings. It is possible that intentionally leaving a wound without a dressing may be coupled with greater care in skin closure at the end of surgery. Greater care with closure may reduce wound exudates, which in turn could negate the need for a dressing and improve healing.

Other issues to consider in choice of dressing is their cost. These vary greatly, from inexpensive basic wound contact dressings (a few pence each) to expensive advanced dressings (such as antimicrobial dressings), which may cost between £10 and £20 each. Topical negative pressure therapy dressings are rarely used on closed primary surgical wounds (costing about £100 per week), although interest in them for high risk wounds (such as unplanned colorectal surgery) is increasing.

Is ongoing research likely to provide relevant evidence?

Searches conducted in September 2015 in the WHO International Clinical Trials Registry have identified only ongoing trials comparing advanced dressings (with one or more claimed therapeutic property) with basic wound contact products. We did not find any trial comparing dressings with no dressing. A feasibility study that includes a pilot randomised controlled trial is currently being undertaken which will establish whether a definitive trial of different dressing types and no dressing in patients undergoing planned or unplanned abdominal general and caesarean section surgery is feasible and a worthwhile investment for the NHS. Mixed methods are being used to explore current practice and views of dressings and to improve outcome measures.

What dressings, if any, should we use in light of this uncertainty?

Because there is so little evidence to guide the choice of dressing strategy for closed primary surgical wounds, we recommend a common sense approach until better evidence is available. Without evidence of the superiority of more expensive dressings, and with anecdotal reports of the convenience of dressings for patients and health care staff, the use of basic adhesive (with minimal absorbency) dressings at a cost of a few pence per dressing on a closed primary surgical wounds is pragmatic. An exception to this recommendation would be settings in which it is standard practice not to use dressings, and paediatric surgery may constitute such an exception, if the removal of dressings causes undue distress to children.

Competing interests: All contributors have read and understood the BMJ policy on declaration of interests and have no relevant interests to declare.

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SPOT DIAGNOSIS
Chest and neck pain in a 22 year old woman

A 22 year old woman was referred to the emergency department by her general practitioner owing to severe chest pain that was now radiating to her neck. The pain has been worsening over the past 24 hours. It first started when she was eating fish at a seafood restaurant. What does the lateral soft tissue neck radiograph show (fig 1)?

Submitted by David C Howlett and Joseph Dalby Sinnott
Patient consent obtained.
Cite this as: BMJ 2016;353:i2757

SPOT DIAGNOSIS
A neonate with dyspnoea

A newborn boy presented to the neonatal intensive care unit with dyspnoea at birth. He was born at 40+1 weeks’ gestation and weighed 2950 g, with Apgar scores of 9 at one minute and 9 at five minutes. On examination, his left lung breath sounds were absent and bowel sounds could be auscultated in the left thoracic cage. His respiratory rate was 70 breaths/min and there were no other external congenital malformations. He was intubated immediately and received mechanical ventilation. A chest radiograph was taken (figure). What is the diagnosis?

Submitted by Yong-Hai Zhou and Ming-Hua Zheng
Parental consent obtained.
Cite this as: BMJ 2016;353:i2361
Empathy in health professionals
Watching people die used to be part of growing up until the last century. But few medical students witness death until they work on hospital wards, and in semi-structured interviews 53 medical students described the experience to researchers (BMJ Med Educ doi: 10.1186/s12909-016-0631-3). Most felt emotionally diminished, experienced a decrease in empathy to cope with the emotional pain, and sought the comfort of colleagues. This rite of passage also introduced them to the ordinariness of death and their professional role in dealing with its practicalities. Shifts of empathy are also explored in a New Scientist article (http://bit.ly/1s1CG7b). “Empathic distress” is a common cause of burnout in health professionals and can lead to aggressiveness and a desire to escape. However, compassion training methods are being developed to help people learn to strike a balance between empathy and personal coping mechanisms (Soc Cogn Affect Neurosci doi: 10.1093/scan/nst060).

CRP and antibiotic prescribing
If doctors could distinguish between bacterial and viral infections, perhaps they would prescribe fewer antibiotics, runs a familiar refrain. One method is to measure C reactive protein (CRP), an inflammatory mediator that was discovered at about the same time as penicillin. But a randomised trial of preconsultation CRP measurement in febrile children presenting to primary care in Norway shows no difference in the rate of antibiotic prescribing or referral to hospital (BMJ Open doi:10.1136/bmjopen-2016-011231) compared with a group who could order CRP after the consultation only.

Malaria, bacteria, or both?
In reality, there is a strong impulse to give treatment on a “just in case” basis to febrile children, and in many countries where malaria is endemic this can lead to prescription of malarial drugs as well as antibiotics. A study using quantitative polymerase chain reaction testing of blood samples from afebrile and febrile children in Gabon finds that although malaria is common in the febrile group (78.8%), bacterial DNA is also detected in 4.6% of malaria positive febrile children (Am J Trop Med Hyg doi:10.4269/ajtmh.15-0751).

Non-financial COIs
As a virgin goddess, Minerva is aware of her conflicts of interest with other less chaste deities (that hussy Venus, for example). Surveying humanity, she sees the same thing everywhere. People who have developed their own psychological therapies love to reference them in flattering ways when performing systematic reviews, a survey finds (BMJ Open doi:10.1136/bmjopen-2015-010606). “Non-financial conflicts of interest . . . need more transparency and better management,” the authors conclude.

Venus and reproductive health
Speaking of Venus, I hear that she will be starting a column of her own in imitation of mine in Journal of Family Planning and Reproductive Health Care. Thank you my dear. I shall take it as a compliment.

Sleep-wake disorders after TBI
To determine the effect of brain trauma on sleep, a Swiss group performed detailed sleep assessment in 31 participants 18 months after a first traumatic brain injury (TBI) and compared the results with those from healthy people without previous TBI matched for age, sex, and sleep satiation (Neurology doi:10.1212/WNL.0000000000002697). Sleep need was consistently about an hour longer in the patient group than in controls (8.1 h (standard deviation 0.5) v 7.1 h (0.7)).

Oscar the cat
In the Steere House Nursing and Rehabilitation Center in Providence, Rhode Island nine years ago, Oscar the cat (below) would do his rounds and snuggle up to patients until they died a few hours later. Oscar’s prognostic powers far exceeded those of the medical and nursing staff. He has inspired an article in the New England Journal of Medicine, a book called “Making Rounds with Oscar: the Extraordinary Gift of an Ordinary Cat,” and most recently an excellent article about uncertainty at the end of life by Piotr Szawarski, an intensive care consultant at Wexham Park (J Intensive Care Soc doi:10.1177/17511437-16646123).