RESEARCH, p 1345

**Agents for change**

A mnemonic for falls prevention that uses the letters ABCDE (E for eyewear consideration) was the idea for a pitch to the patient safety Dragon's Den at the recent Junior Doctors: Agents for Change conference. Read contender Matthew Forbes's blog at agentsforchange.bmj.com

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**Editors**

IMPROVING the vision of an older person should lower the likelihood of a fall. Randomised controlled trials suggest that this is often true, but not always. The person with impaired vision may not see hazards, particularly if peripheral vision is limited; may not see the poorly lit bottom step, particularly if depth perception is affected; and may not notice the change from carpet to slippery tiles, particularly if contrast sensitivity is impaired.

Poor vision increases the risk of falling. The person with impaired vision may not see hazards, particularly if peripheral vision is limited; may not see the poorly lit bottom step, particularly if depth perception is affected; and may not notice the change from carpet to slippery tiles, particularly if contrast sensitivity is impaired.

Multifocal and bifocal glasses further impair contrast sensitivity and depth perception. Multifocals also cause loss of acuity in the lower peripheral visual field owing to astigmatic aberration. Protective responses, such as grabbing a rail, may also be hindered by the peripheral prismatic effect. Use of these lenses is associated with an increased risk of falling.

In the linked randomised controlled trial, Haran and colleagues assess whether providing single lens distance glasses to regular users of multifocal glasses lowers the rate of falls. It did by around 60% in people who regularly took part in outside activities (incidence rate ratio 0.60, 95% CI 0.42 to 0.87). In frail older people, who spent more time inside, no significant difference was seen in falls inside and a significant increase was seen in falls outside. The overall fall rate in the intervention group was not reduced.

It is important to check vision and glasses in an elderly person who presents after a fall. More active patients may benefit from changing multifocal glasses to single focus glasses for walking and standing activities. Prescription of new lenses should also involve careful instruction in their use. This was an important part of the trial intervention. In another trial, assessment of vision and prescription of new glasses significantly increased falls in the intervention group. One of the reasons suggested for this was the difficulty older people may have in adjusting to sudden change in vision.

Participants in Haran and colleagues’ study were encouraged to have transition (photochromic) single focus lenses, which become darker in bright sunlight. Although the tints in photochromic lenses lighten when removed from an ultraviolet source, the transition time can be up to two minutes. During this time the lenses are, in effect, still tinted. Older people should be advised against fixed tint glasses and should be aware of the delayed change with some photochromic lenses.

After correction of refractive errors, cataract is the most common correctable cause of impaired vision in older people. First eye cataract surgery decreases the rate of falls and improves activity, mood, confidence, and visual handicap. A randomised controlled trial showed a 34% reduction in falls for people who had cataract surgery compared with controls on the waiting list. Another trial of second eye surgery found a similar but non-significant reduction in falls. Most of the reduction in falls possibly comes with improved sight in one eye. However, having normal sight in two eyes would improve depth perception, contrast sensitivity, and peripheral vision, which are all important for safe walking.

Intraocular lenses that correct astigmatism (toric lenses) make emmetropia a reasonable expectation. A distance correction means that bifocals are no longer needed, which lowers the risk of falling.

A randomised controlled trial of fall prevention in people with severely impaired vision has shown that falls can still be prevented. Assessment and advice from an occupational therapist reduced falls by 60% when this was the sole intervention and, unexpectedly, by a lesser amount when an exercise programme was also provided. Both outside and inside falls were reduced by the same amount, and falls were reduced whether or not home hazards were removed. Individual advice on safe activity by a trained occupational therapist is most important for people with severe loss of sight.

We can learn from both the expected and the unexpected results of these studies. Maintaining optimum vision is best done by regular eye assessments so that the older person does not have to adapt to major changes in lenses. Although many factors other than visual impairment may contribute to the risk of falling, change should be introduced step by step in a planned manner so that the person is not overwhelmed. A person’s propensity to fall should be considered when determining priority on a cataract waiting list. Doctors should consider vision and glasses, optometrists should consider the risk of falls, and good communication between the two will certainly help.

**References**


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**Editors**

**Poor vision and falls**

**Correcting vision can help, but do so with care**

Improving the vision of an older person should lower the likelihood of a fall. Randomised controlled trials suggest that this is often true, but not always. In fact, well-meaning interventions can increase the risk of falls and changes should be made with care.

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We can learn from both the expected and the unexpected results of these studies. Maintaining optimum vision is best done by regular eye assessments so that the older person does not have to adapt to major changes in lenses. Although many factors other than visual impairment may contribute to the risk of falling, change should be introduced step by step in a planned manner so that the person is not overwhelmed. A person’s propensity to fall should be considered when determining priority on a cataract waiting list. Doctors should consider vision and glasses, optometrists should consider the risk of falls, and good communication between the two will certainly help.
Care plans for people with Alzheimer’s disease

Intuitively a good idea, but hard to prove they are effective in practice

In the linked cluster randomised trial, Nourhashemi and colleagues tested a specific care plan for patients with Alzheimer’s disease to determine whether it improved activities of daily living and delayed admission to institutional care or death.1 The authors randomised specialty memory clinics in France to provide patients with the usual care given at the clinic or a special dementia care plan, which consisted of twice yearly assessments based around a checklist and clinician initiated interventions as needed. The checklist assessed each patient’s and caregiver’s knowledge of the illness; the caregiver’s health; the need for home help and respite care; the patient’s nutritional status, functional dependency, gait, need for exercise training, behavioural symptoms, depression status, sleeping pattern, and car driving risk; any legal issues; and the decision to admit to institutional care. The interventions consisted mainly of low intensity verbal or written education and counselling for the caregiver and patient and conveying recommendations to the patient’s primary care practitioner. The trial found no significant difference in outcomes at two years.

Guideline based interventions for dementia care are recommended by many professional organisations, although it is often not clear who should carry out these interventions.2 Care plan models or guidelines often have the stated aims of delaying disease progression and functional decline, improving quality of life, controlling symptoms, and providing comfort.3,4 In Nourhashemi and colleagues’ study specialists used checklists for assessment and went through educational procedures with patients and caregivers. Yet, with the possible exception of the nutritional counselling, this may not have been very different from what specialists do as a matter of course. Patients probably received a similar level of care to that recommended by many guidelines issued by professional organisations, in particular those from European dementia specialists.5 The authors suggest that both the care plan group and the usual care group received better care and had better outcomes because they were treated in memory clinics rather than general practices. However, without a comparison group from general practice we don’t really know whether the specialty clinics provided more specialised and effective care.

Few, if any, randomised trials have looked at care plans themselves (compared with drug treatments, specific non-drug interventions, or caregiver interventions) that aim to improve outcomes for patients with dementia.2 Some fairly specific interventions directed at caregivers seem to improve behaviour but not other outcomes. For example, in one collaborative care model, nurse practitioners using ongoing standardised interventions, with caregivers focusing on environmental and behavioural management, reduced behavioural problems over one year but did not improve function or cognition.6 In another trial, individualised psychosocial interventions reduced agitation but had no effect on quality of life.7 Structured interventions provided by social workers aimed at caregivers delayed admission to institutional care compared with usual care at a New York Alzheimer’s disease research centre.8 An intensive care management programme provided by social workers that included in-home assessments increased adherence to treatment guidelines, services, and the quality of life of patients and caregivers.8 These approaches focused more on patients’ potentially disruptive behaviours and required additional clinician resources that most doctors, including those at specialty clinics, may not be able to access. Moreover, care plans and interventions that seemed most effective needed a higher intensity of intervention and greater resources.8

The trial was limited in having only three main outcomes—daily activities, admission to institutional care, and death—and by being unable to assess exactly what was done in the treatment as usual control clinics. Another limitation was that interventions were more frequent at baseline, when doctors first applied the checklist and did a thorough evaluation, but then became less frequent over time. This is somewhat counterintuitive because patients would be expected to receive more interventions as they inevitably progress, especially in view of their increased behavioural disturbances. This phenomenon may also indicate that the care plan—straightforward as it is—was not simple to implement. Nevertheless, the trial provides an important basis from which to assess the feasibility and effectiveness of care plans delivered by doctors. It also highlights the need to develop effective comprehensive care plans that can be integrated into practice.

The lack of a significant effect of the care plan in Nourhashemi and colleagues’ trial should not deter clinicians from providing care that is consistent with this care plan and with evidence based guidelines.3,4 The study highlights that specialists need to build a contract with...
Patients and their families to provide the best quality of care; review care more often; and collaborate with other care providers including primary care practitioners, social workers, and nurse specialists.


Sarah Chan research fellow in bioethics and law, Institute for Science, Ethics and Innovation, University of Manchester M13 9PL. sarah.chan@manchester.ac.uk

John Sulston chair, Institute for Science, Ethics and Innovation, University of Manchester M13 9PL.

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The recent report from the J Craig Venter Institute of the engineering of a self replicating bacterium with a chemically synthesised genome is a step towards artificial life and raises potential ethical concern.

“Synthetic biology” has emerged in recent years as an umbrella term to describe a range of technologies for manipulating and creating components of biological systems. Although a popular perception may be that scientists in the field are engaged in creating new and entirely artificial life forms, the progress towards this possibility has been more subtle and pragmatic.

Advances to date have been in synthesising and modifying molecular components at the sub-organism level. This latest work is technically impressive but does not really break new ground in a philosophical sense because it involves the introduction of a genome that is functionally the same as an existing one. In a practical sense, the authors suggest that their method opens up new realms of bioengineering. However, it is unclear how the difficult operation of synthesising an entire genome offers any advantage over the increasingly powerful and directed techniques of genetic manipulation that are already in daily use for generating new and useful life forms, or for gene therapy. The usual concerns over creating life, such as fear of the unnatural or worries about “playing God,” are therefore not only misdirected but also premature.

The real concern is how this research will ultimately be controlled and used. The group began filing patent applications for this research in 2006, and these now extend to no less than 13 patent “families” (but comprising far more than 13 patents). The patents cover every aspect of the work, from the synthesis of genomes and genome fragments of all sizes to the insertion of the genetic material into the cell. The applications use the exciting nickname “artificial cell” to justify a claim that is far beyond the scope of the actual work and could be construed as covering much existing and future biotechnology.

The precise impact of patents in terms of restricting future research is difficult to measure; how can you measure the extent to which something does not occur? The progress of science, however, relies heavily on freedom of communication and on the sharing of data and research methods. The patent industry by nature discourages or at least delays communication and information sharing, because of the requirement for secrecy before filing. A 2003 report by the Royal Society found that the practice of patenting is widely perceived by scientists to have adverse effects on openness and communication in scientific practice.

The broad scope of the claims is also cause for concern. Patent attorneys tell us that over-reaching claims are reduced during examination, but we know that in the past this has not always been the case, and in the meantime uncertainty remains about what aspects of the work may be used without infringement. Moreover, the exclusive right granted to patent holders to exploit the technology can prevent others from using it and thus hinder progress further. Although there is an exception for experimental use that should in theory permit further research, its application is often sufficiently narrow and uncertain to be a disincentive to those contemplating research in an area hedged over and around with “a patent thicket.” All of these problems with patents are well described and they have occurred repeatedly in diverse areas of science—for example, stem cell research and human gene research, notably the Myriad gene testing saga.

Finally, patents have the potential to restrict access to the innovations derived from research. Sweeping patent claims by the J Craig Venter Institute or indeed anyone in key areas such as biofuels, pharmaceuticals, and environmental clean-up are counterproductive to sustainable global development. Will the benefits be available to those who need them most? Power imbalances in technological capital, particularly in conjunction with other disparities of economic and political power, can effectively deny access to science both directly, by enforcement of intellectual property rights, and indirectly, because of the complexity of the system. Again although theoretical exceptions may exist...
A moment of truth for global health
A cross cutting approach is needed to meet the challenges of the global financial crisis

The past decade has been a “golden window” for global health. New disease specific health initiatives and major new funding programmes have contributed to impressive gains. In 2008, for example, 10 000 fewer children were dying each day than in 1990. But there are disturbing signs that the window may be closing.

Donor agencies have warned African countries that financial help for HIV treatment programmes cannot be assured. The Global Fund to Fight AIDS, tuberculosis, and malaria and the Global Alliance for Vaccines and Immunisation (GAVI Alliance) face serious funding shortfalls. The Spanish government just announced that it will cut foreign aid by €600m (£506m; $734m) as part of its austerity measures, and other donor governments seem likely to follow suit. Without sustained funding to strengthen the fragile health infrastructure of developing countries, the millennium development goals are unlikely to be reached.

How will the global health community respond? One risk is the various sub-communities, or silos, such as those working on HIV, malaria, vaccines, or health systems, will advocate and compete for their own stake in the shrinking pot of donor money.

A more rational response would be for the community to come together and agree on a “cross cutting” agenda for global health. Such an agenda should focus on how to get the overall global health architecture right, and how to ensure maximum return for every dollar invested.

This agenda should tackle four key areas. A better understanding of these interconnected areas could help to lay a foundation to make decisions in global health that are based more on empirical analysis and less on disease based advocacy or political whim.

The first point is to ensure a robust sustained way to finance the global health system. Most interest currently centres on innovative financing mechanisms, the “new architecture for development.” The high level Taskforce on Innovative Financing for Health Systems laid out a menu of different mechanisms. Some are up and running, such as the “mandatory solidarity levy” on airline tickets that generates about €180m a year in France, most of which goes to UNITAID to support the scaling up of treatments for HIV, tuberculosis, and malaria. Others, such as a proposed tax on currency market transactions, are at an earlier stage.

One problem with these new mechanisms is that they tend to fund specific silos and so could perpetuate the fragmentation in global health. Another is that they risk letting donors off the hook for their unfulfilled commitments—the group of eight countries (G8), for example, has failed to live up to its 2005 Gleneagles commitments. From a cross cutting viewpoint, it would be valuable to stand back and consider the implications of these new financing mechanisms, which are adding yet more complexity to an already messy global health landscape. Could they be launched in a more strategic and coordinated way? Could they be harmonised and reorganised to raise money explicitly to support horizontal integrated delivery of health through stronger health systems?

A second point is to make sure that money raised is spent rationally and efficiently, with a strong focus on supporting the needs of countries and better alignment between aid flows and national priorities, as laid out in the Paris Declaration on Aid Effectiveness. Here there are lessons to be learnt from the new and innovative global health initiatives. The global fund and the GAVI Alliance adopted demand driven approaches to development assistance, in which money is invested in programmes proposed by developing countries themselves rather than by donors. Could demand driven financing be a model for basing global health decisions on the needs expressed by countries themselves rather than on the latest “fashionable” topic?

A third point is to encourage donors to use strategic methods for deciding how much money to allocate directly to countries and how much to invest in multilateral funds, such as the global fund. At present these decisions seem to be ad hoc. Why, for example, did the government of the United States reduce its proposed allocation to the global fund in its budget for financial year 2011 compared with 2010? These
Response on bmj.com

“We need to ensure that what is termed as a demanding issue really is a demanding issue. Africa is still poor at using evidence to inform practice. Malaria drugs are still being shipped to health facilities where malaria is not endemic, leading to expiry of much needed drugs. Budgets are made on percentage increments instead of emerging trends. Evidence based resource allocation is almost unheard of in my country.”

Careena Flora Otieno, PhD student, Kisumu-40100, Kenya

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Female genital mutilation
Paediatricians should resist its medicalisation

Female genital mutilation is defined by the World Health Organization as any procedure that involves partial or total removal of the external genitalia or other injury to the female genital organs for non-medical reasons.1 Worldwide, 100-140 million girls and women are estimated to live with the consequences of such practices.

Although a graded classification of types exists,2 female genital mutilation is recognised internationally as a violation of human rights with no health benefits. Immediate risks include haemorrhage, infection, and death. Long term consequences include menstrual problems, infertility, psychosexual and psychological difficulties, and adverse obstetric outcomes including caesarean section, perineal trauma, haemorrhage, and perinatal death.3 So why did the American Academy of Paediatrics (AAP) amend an earlier policy to suggest that United States law could be changed to allow doctors to “nick” female genitalia, as a cultural compromise?4 Women’s rights organisations, the World Health Organization, and the UK Royal Colleges of Obstetrics and Gynaecology and Paediatrics and Child Health all expressed dismay.5,6 The AAP released a statement on 27 May to say that they have withdrawn the policy,7 but at the time of going to press it remains available unchanged on their website.8 Migration has led to an increase in women with genital mutilation in developed countries. In 2001, 66 000 were estimated to live in England and Wales, with over 20 000 young girls at risk. An estimated 1.43% of all childbirths in 2004 occurred in women with genital mutilation (6.3% in inner London).9 The 1985 Prohibition of Female Circumcision Act made it an offence to carry out, aid, abet, or procure any form of female genital mutilation in the United Kingdom. The 2003 Female Mutilation Act closed the loophole that allowed fami-
lies to circumnavigate the law by taking daughters abroad. Local authorities can intervene under the Children Act of 1989 if a girl has had or is likely to undergo such mutilation. Campaigning groups such as FORWARD have raised government awareness, as illustrated by the inclusion of female genital mutilation in the recent Taskforce on Health Aspects of Violence Against Women and Children.10

Worldwide much progress has been made, measured in terms of girls who successfully refuse genital mutilation, community leaders speaking against the practice, and organisations working to end it. Social change has been brought about through the media; health professionals; educators; religious, political, and traditional leaders; and people of all ages, depending on the setting. The means evolve according to local needs and might include development work (such as education, training, sanitation, and improving economic potential) while also making communities sensitive to the problem of female genital mutilation through education, radio programmes, arts and sporting activities, and children’s clubs; in this way, peer educators will be created. Alternative sources of income may need to be found for ex-circumcisers.

A documentary, Africa Rising,11 shows grassroots activists using local culture to change this harmful tradition. In May 2010, an interparliamentary conference in Dakar brought parliamentarians and activists together to ensure that ministries prioritise female genital mutilation and achieve a United Nations resolution for an explicit ban. Two thirds of the 28 countries in Africa where female genital mutilation is practised have laws against it, and other countries are likely to follow suit. Lack of political will means that laws are not often enforced—except in Burkina Faso—but changes have been seen, particularly if a girl has died.12 Many countries have ratified human rights instruments that expressly prohibit female genital mutilation and its medicalisation (including pricking and piercing).13 They caution against obscuring the absolute nature of human rights standards in this matter.

Which brings us back to the peculiar view of the AAP Bioethics Committee. The committee seemed naïve or uncar ing about the effect of its suggestion on the understanding of female genital mutilation as a form of sex discrimination and gender based violence. Presenting laceration as a minor medical procedure will confuse clinicians rather than improve their education.

Harm limitation is an established medical principle, but unjustified in the light of the campaign for harm elimination, the child’s best medical interests, and their inability to consent. A banal comparison with ear piercing reinforces the fact that a “nick” is not an indicated treatment or the proper business of paediatricians. Neither of these procedures is a medical treatment. Cultural rituals, fashion, rites of passage, adult female sexual pleasure, and marriageability are not within the scope of appropriate, expert paediatric practice. A girl without a problem is not a patient; the doctor becomes a stranger with no indication to expose, touch, or cut the genitalia. However minor, assaults on children should be named and requests met with a gentle but firm “no.” Indig enous grassroots groups, activists, and traditional leaders have encouraged local communities to abandon all types of female genital mutilation. The United States is seeking to make transportation of girls out of the country for female genital mutilation illegal, as it is in the UK. Even if withdrawn, the AAP episode undermined local, national, regional, and international initiatives against female genital mutilation.

The authors have completed the Unified Competing Interest form at www.icmje.org/coi_disclosure.pdf (available on request from the corresponding author) and declare: (1) No financial support for the submitted work; (2) CM has received book royalties and fees for lectures and patient reports relating to female genital mutilation; (3) No spouses, partners, or children with relationships with commercial entities that might have an interest in the submitted work; and (4) SB and SC served on the 2009-10 Department of Health Taskforce on Health Aspects of Violence Against Women and Children.

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