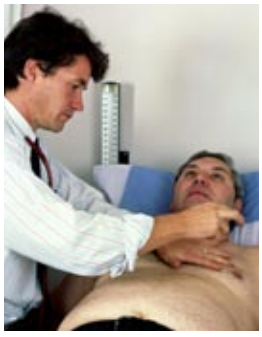
In praise of the physical examination

It provides reason and ritual



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If an alien anthropologist were to visit a modern teaching hospital, "it" might conclude that, judging by where doctors spend most of their time, the business of an internal medicine service takes place around computer terminals. The alien might assume that the virtual construct of the patient, or the "iPatient",[1] is more important than the flesh and blood human being occupying the bed.

But the alien would be wrong—patients are what medical care is all about. Yet the electronic medical record and advanced imaging technology have not only seduced doctors away from the bedside but also devalued the importance of their role there. Indeed, intensive care units exist where consultants conduct their "rounds" on the patients and adjust ventilator settings and drugs via telemetry.[2]

These trends have left educators and trainees in internal medicine in two camps when it comes to the merits of the bedside examination. In the first camp are those who pine for the old days, bemoan the loss of clinical bedside diagnostic skills, and complain that no one knows Traube's space or Kronig's isthmus. In the second camp are those who say good riddance and point out that evidence based studies show that many physical signs are useless; some might even argue that examining the patient is just a waste of time.

We believe that the truth is somewhere in between. We argue that clinicians who are skilled at the bedside examination make better use of diagnostic tests and order fewer unnecessary tests. If, for example, you recognise that the patient's chest pain is confined to a dermatome and is associated with hyperaesthesia, and if you spot a few early vesicles looking like dew drops on rose petals, you have diagnosed varicella zoster and spared the patient the electrocardiography, measurement of cardiac enzymes, chest radiography, spiral computed tomography, and the use of contrast that might otherwise be inevitable. And so many clinical signs, such as rebound tenderness, lid lag, tremor, clubbing, or hemiparesis cannot be discerned by any imaging test.

In the United States, after a three year residency, trainees can become certified by the American Board of Internal Medicine on the basis of a multiple choice test—an examination that has been standardised and well studied. Because the oral clinical examinations of the past, in which external examiners assessed a doctor's skills at the bedside, were viewed as subjective and not standardised, assessment of such skills was left in the hands of training programme directors, who themselves were ill prepared to conduct the test or be truly objective about their own trainees. Without a high stakes clinical examination looming over them, the bedside skills of trainees atrophy. In short, we now certify internists in the US without an external benchmark that ensures that they can find a spleen, elicit a tendon reflex, detect fluid in a joint, or detect a large pleural effusion by percussion. If the public fully understood this, they would be shocked.

The good news is that in our experience, house staff and junior faculty members are eager to improve their skills at the bedside. They recognise that the clinical examination has value and that it is necessary, particularly because so many of our students and residents have some experience in practising abroad in resource poor settings, where the value of such skills is more obvious. Often they understand the theory of a physical diagnostic manoeuvre but their technique is lacking. To this end we have developed the "Stanford 25," a list of 25 technique dependent physical diagnostic manoeuvres that we teach to our trainees.[3] On the list are items such as the funduscopic examination, the thyroid examination, the study of jugular venous pressure and wave forms, and the performance of the Achilles tendon reflex in a bedridden patient—the last is a great example

The Stanford 25

1. Funduscopic examination for papilloedema, etc, using panoptic and regular ophthalmoscopes
2. Examination of the pupillary responses and relevant anatomy
3. Examination of the thyroid
4. Examination of neck veins/jugular venous distension for both level (volume) and common abnormal wave forms
5. Examination of the lung, including surface anatomy, percussion technique, identifying upper border of the liver, finding Traube's space
6. Evaluation of point of maximal cardiac impulse, parasternal heave, and other precordial movements
7. Examination of the liver
8. Palpation and percussion of the spleen
9. Evaluation of common gait abnormalities
10. Eliciting ankle reflexes, including in a recumbent patient
11. Ability to list, identify, and demonstrate stigmata of liver disease, from head to foot
12. Ability to list, identify, and demonstrate common physical findings in internal capsule stroke
13. Examination of the knee
14. Auscultation of second heart sounds, including splitting, wide splitting, and paradoxical splitting
15. Evaluation of involuntary movements such as tremors
16. The hand in diagnosis: recognise clubbing, cyanosis, and other common nail and hand findings
17. The tongue in diagnosis
18. Examination of the shoulder, specifically testing for rotator cuff tears, the acromioclavicular joint etc
19. Assessment of blood pressure; identifying pulsus paradoxus
20. Assessment of cervical lymph nodes
21. Detection of ascites and abdominal venous flow
22. Rectal examination
23. Evaluation of a scrotal mass
24. Cerebellar testing
25. Bedside ultrasonography

of a technique dependent manoeuvre. It is a skill to get the patient to relax, to position the leg properly, and to strike the tendon correctly to elicit a reflex (and it also takes a tendon hammer, which, unlike the ubiquitous stethoscope, is often missing from the pocket of the trainee's white coat). The Stanford 25 teaches trainees 25 useful manoeuvres, while helping them recognise how nuanced some of these tests are. It also gives junior faculty members a repertoire of skills to teach when they are at the bedside.

A third view of the bedside examination, and one that we advocate, is that it is not just a means of data gathering and hypothesis generation and testing, but is a vital ritual, perhaps the ritual that defines the internist. Rituals are all about transformation. The elaborate rituals of weddings, funerals, or inaugurations of presidents are associated with visible transformation. When viewed in that fashion, the ritual of the bedside examination involves two people meeting in a special place (the hospital or clinic), wearing ritualised garments (patient gowns and white coats for the doctors) and with ritualised instruments, and most importantly, the patient undresses and allows the doctor to touch them. Disrobing and touching in any other context would be assault, but not as part of this ritual, which dates back to antiquity.

We propose that if the ritual is short changed, if it is done in a cursory fashion, if it not done with skill and consideration, if its sacredness seems to be violated, then the transformation (which in this case is the formation of the doctor-patient bond, the beginning of a therapeutic partnership and the healing process) does not take place. We believe that the failure to form that bond could account for a great deal of the dissatisfaction patients express and doctors feel about their encounter.

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Secret remedies: 100 years on

Time to look again at the efficacy of remedies

DIAGNOSIS, p 1394

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In the linked feature, Jeffrey Aronson describes how the BMA, *BMJ*, and politicians tried a century ago to end the marketing of secret remedies.[1] They didn't have much success. Forty years after their endeavours, A J Clark (professor of pharmacology at University College London and later at Edinburgh) could still write, "the quack medicine vendor can pursue his advertising campaigns in the happy assurance that, whatever lies he tells, he need fear nothing from the interference of British law. The law does much to protect the quack medicine vendor because the laws of slander and libel are so severe."[2] Clark himself was sued by a peddler of a quack cure for tuberculosis for writing that: "'Cures' for consumption, cancer, and diabetes may fairly be classed as murderous." Although he fought the libel case, impending destitution eventually forced him to apologise.[3]

Clark's claim in 1927 that: "some travesty of physical science appears to be the most popular form of incantation"[4] is even truer today. Homoeopaths regularly talk nonsense about quantum theory, and "nutritional therapists" claim to cure AIDS with vitamin pills. Some of their writing is plain delusional, but much is a parody of scientific writing, in a style that Ben Goldacre calls "sciencey."[5] It reads quite plausibly until you check the references.

One hundred years on from the abortive efforts to crack down on patent remedies, we need to look again at the efficacy of remedies. Indeed the effort is well under way, but this time it takes a different form. The initiative has come largely from an "intrepid, ragged band of bloggers" and several journalists, helped by scientific societies. It hasn't been helped by the silence of the BMA, the royal colleges, the Department of Health, and a few vice chancellors.. Even the National Institute for Health and Clinical Excellence (NICE) and the Medicines and Healthcare Products Regulatory Agency (MRHA) could be helping more.

The response of the royal colleges to the resurgence in magic medicine that started in the 1970s looks to me like embarrassment. They avoided the hard questions by setting up committees (often populated with known sympathisers) so as to avoid having to say "baloney." The Department of Health, equally embarrassed, refers the hard questions to the Prince of Wales' Foundation for Integrated Health. It was asked to draft "national occupational standards" for make believe subjects like "naturopathy"[6]).

Two recent examples illustrate the problems. Take first the Pittilo recommendations for statutory regulation of acupuncture and herbal and traditional Chinese medicine.[7,8] The Pittilo report recommended official recognition by statutory regulation and entry by honours degree. But you cannot start to think about a sensible form of regulation unless you first decide whether or not the thing you are trying to regulate is nonsense. This idea, however, is apparently lost on the Department of Health and the authors of the Pittilo report. Fortunately, consultation on statutory regulation has attracted many submissions that point out the danger to patients of appearing to give official endorsement to treatments that have no proper evidence base. The Royal College of Physicians seems to have experienced a major change of heart: its submission points out with admirable clarity that the statutory regulation of things that don't work endangers

Glossary[10]

- Acupuncture: a rather theatrical placebo, with no real therapeutic benefit in most, if not all, cases
- Herbal medicine: giving patients an unknown dose of an ill defined drug, of unknown effectiveness and unknown safety
- Homoeopathy: giving patients medicines that contain no medicine whatsoever

patients (though they still have a blind spot about the evidence for acupuncture, partly as a result of the recent uncharacteristically bad assessment of the evidence by NICE). Such enlightenment doesn't extend to the Prince of Wales, who made a well publicised intervention on behalf of herbalists after the public consultation closed.[9]

The other example concerns the recent "evidence check: homeopathy" conducted by the House of Commons Science and Technology Select Committee (SCITECH). Oliver Wendell Holmes said all that needs to be said about medicine-free medicines in his 1842 essay, *Homeopathy and its Kindred Delusions*[11] So it is nothing short of surreal to find the UK parliament still discussing it in 2009.

The committee's proceedings are worth watching, if only to see the admirably honest admission by the professional standards director of Boots that they sell homoeopathic pills without knowing whether they work.[12] But for pure comedy gold, there is nothing to beat the final session. The health minister Michael O'Brien was eventually cajoled into admitting that there was no good evidence that homoeopathy worked but defended the idea that the taxpayer should pay for it anyway. The chief scientific advisor in the Department of Health, David Harper, was not so straightforward. After some evasive answers the chairman, Phil Willis, said, "No, that is not what I am asking you. You are the department's chief scientist. Can you give me one specific reference which supports the use of homoeopathy in terms of government policy on health?" One is tempted to quote Lewis Carroll "but answer came there none." There were words, but they made no sense.

Then at the end of the session Harper said, "homeopathic practitioners would argue that the way randomised clinical trials are set up, they do not lend themselves necessarily to the evaluation and demonstration of efficacy of homeopathic remedies." Earlier, Kent Woods (chief executive officer of the MHRA) had said, "the underlying theory does not really give rise to many testable hypotheses." Why not? The hypotheses are testable, and homeopathy—because it involves pills—is particularly well suited to testing by proper randomised controlled trials.[13]

It isn't hard to do better than that. "Imagine going to an NHS hospital for treatment and being sent away with nothing but a bottle of water and some vague promises," wrote the *Sun*'s health journalist Jane Symons recently.[14] "And no, it's not a fruitcake fantasy. This is homeopathy and the NHS currently spends around £10m on it." It isn't often that a Murdoch tabloid produces a better account of a medical problem than anything the Department of Health's chief scientific advisor can muster.

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World hunger: a reasonable proposal

Commodity markets explain why so many are going hungry in a world of plenty

BRUCE HANDS/GETTY IMAGES

Last year saw 250 million people added to the ranks of the starving and malnourished, pushing the world total past one billion, or one in every six people on the planet.[1] As I read reports of the dramatic upsurge I was reminded of a rainy afternoon in Cambridge two summers ago, when I interviewed Amartya Sen, the Harvard professor who had won the Nobel prize for economics in 1998 for his work on poverty and famine. According to Sen, hunger was not only entirely preventable but profoundly unreasonable.

I had come to Amartya Sen's house to discuss the recent efforts of the Bill and Melinda Gates Foundation and the World Food Programme to help eradicate world hunger by means of a new programme, called Purchase for Progress. And while our discussion began with the specifics of global food aid, it eventually ranged beyond the particulars of poverty.

"I believe in reason," Sen told me. "There are those who want to repress reason: Christian, Muslim, and Hindu fundamentalists, and those who pick a totem market economy, the liberal economic state. These are all anti-reason."

Ironically, at the time of my visit to Cambridge the world's markets were in the throes of one of the greatest food commodity bubbles of all times, a deeply unreasonable surge of speculation that had already doubled the costs of wheat, rice, corn, cooking oil, and numerous other staples and sparked food riots in 39 countries across the globe. Such price spikes in world food markets had little basis in rationality—the wheat harvest of 2008 eventually proved larger than any wheat harvest in human history. But the damage had been done—a quarter of a billion more people had been relegated to a status the "hungercrats" euphemistically call "food insecurity."

As world hunger numbers rocketed, the Gates Foundation and the World Food Programme continued to back Purchase for Progress, which has made a totem market economy a panacea for starvation. It is common knowledge

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that markets do not always behave rationally, but that has not stopped one of the world's premier capitalists and the world's largest humanitarian organisation from pursuing various strategies to foster more robust grain markets in the world's least developed countries. Indeed, one of their chief anti-hunger efforts centres around the creation of commodity markets.[2]

How can commodity markets resolve the tragedy of world hunger? In theory, the forward contracting methods developed by Purchase for Progress will give small farmers the opportunity to arbitrage—and thus stabilise—prices for their product. Instead of all farmers going to market at the same time of year, and thus driving post-harvest grain prices lower and lower, Purchase for Progress will provide the farmers of least developed countries a guaranteed sales price in advance of their harvest. Such price guarantees will provide a measure of financial security; collateral for loans from local bankers; and thus the opportunity to purchase fertiliser, farm equipment, and perhaps even some day labour for the upcoming harvest.

All this may sound like a pretty good idea, but programmes like Purchase for Progress take for granted the idea that free market dynamics can transform the indigent peasant into a bona fide agribusinessman, and that assured future sales of grain will increase output, help alleviate local conditions, and thus mitigate world hunger.

But as the titans of global food aid seek solutions to mankind's greatest health threat—a hunger related death every four seconds—they may do well to remember Amartya Sen's warning and retain a healthy scepticism regarding the worship of a totem market economy. Free markets may have worked well for oligopolists like Bill Gates, but the World Food Programme cannot simply will them into existence. In fact, the imposition of commodity markets within the world's least developed countries has a history of failure.[3]

It took hundreds of years for modern commodity markets to develop in London, Chicago, and New York, and these markets rode the back of heavy investments in infrastructure, transportation networks, and agricultural education. The Chicago Board of Trade may have facilitated American farmers, grain storers, and millers in their efforts to produce and manage grain surpluses, but futures markets cannot resolve the intractable political, economic, and social ills of—for example, Uganda or Guatemala, and provide a short cut to food security. Such programmes will benefit bankers more than farmers, and perhaps further alienate the rulers from the ruled, an alienation that lies at the heart of hunger.

Indeed, the dirty secret of world hunger is that the creation of a grain surplus is no solution. There is plenty of food on earth, more than double that needed to feed all 6.5 billion of us.[4] The problem is not food availability, but price. People starve when the daily pay check doesn't cover the daily bread.

All of which is not to say that small farmers do not need our help. But instead of installing futures markets and teaching the nuances of arbitrage, Bill Gates and the World Food Programme might consider expending their manifold resources on emergency income creation and employment programmes. Perhaps even more important, small farmers and landless peasants need to be supported in their efforts to gain political voice and power. As Amartya Sen has often pointed out, there has never been a famine in a representative democracy.[5] A political voice is often the shortest path to a full stomach. Finally—strange as it may seem—the best early warning system for a hunger crisis is not a futures market but a free press. Rulers do not like to see their starving subjects on the front page.

Gates and the World Food Programme could spend their money to much better effect than on a programme like Purchase for Progress, because the totemic worship of liberal free market economics is not a reasonable solution to world hunger. And in this particular case, not being reasonable has fatal consequences.

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Where have all the hospital flowers gone?

They have fallen victim to new definitions of care

PROFESSIONAL MATTERS, p 1442

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Christmas is a time for giving, so it is timely to consider the reasoning behind the extensive and growing ban on giving flowers to patients in hospital. The article by Giskin Day and Naiome Carter describes how both individual wards and entire hospitals are using their discretion to prohibit flowers on the ward, in the absence of any official ruling from the Department of Health.[1] It is undoubtedly causing consternation for patients and visitors alike.

The reasons for such prohibitions are varied, something that should immediately make us curious. As Day and Carter point out, some argue that it is about reducing the risk of injury from broken glass, or avoiding the depletion of oxygen in the air from decomposing material, or even avoiding water spillage over modern electronic equipment. In addition, some staff cite the inconvenience of changing water regularly and the problems of disposing of dead flowers. Unsurprisingly, in the context of invigorated concern around hospital cleanliness, the most common explanation relates to hygiene—that either the flowers themselves, or the water in their vases, carry a risk of infection.

However, none of these explanations has a secure evidence base. Although it is not surprising to learn that flower water can contain bacteria,[2 3] rigorous studies have emphatically concluded that bedside flowers pose no particular threat to health.[4] But what is of interest is just how widespread the bans are, despite the evidence.

Post hoc rationalisations of practices seem, by definition, logical and sensible—using partial bits of knowledge to mask, often from the protagonists themselves, the fact that an a priori decision was based not on facts but on values. For this reason, even compromises such as those Day and Carter present—for example, specifying the best kind of flowers or designating a shared common place—are no less perplexing, because they indirectly reinforce the idea that flowers are essentially inconvenient or pose some kind of hazard.

Of course, this may not seem particularly important for hospital staff in the context of their extensive responsibilities, and we should be sympathetic to this. But the matter is important to patients and their visitors. The point about giving is that it reinforces meaningful relationships of love and friendship.[5] And hospital gifts are perhaps even more nuanced than this. Firstly, the gifts are traditionally ephemeral in nature—whether flowers, fruit, or chocolate, there is something reassuring about them lasting a finite period, echoing the hope that soon the patient will recover and head home. Secondly, although giving flowers can be a sign of private intimacy, in a hospital setting the flowers also publically demonstrate social ties beyond visiting hours. A patient looking at a bouquet doesn't just see the flowers but the person who gave them. And a nurse or doctor is often part of this—remarking on the gifts in small talk, and consequently becoming entangled in a comforting form of interaction.

The apparent intransigence of hospital staff in the face of evidence suggests there might be more to this ban than merely the flowers themselves. In anthropological terms, hygiene is not defined by things being essentially "dirty," but by things being perceived to be in the wrong place[6]—for example, soil is fine in the garden but dirty when on the carpet. So how is it that although flowers were once fine at a hospital bedside, they are suddenly in the wrong place and therefore unclean? Perhaps it is because flowers can mark out a small personalised space, domestic and non-clinical, where a different mode of relating can take place, and it is this that is really out of place on a modern ward.

Underlying all the explicit arguments, the decision to ban flowers seems to reflect a much broader shift towards a model of care that has little time or place for more messy and nebulous elements.[7] The development is not the articulation of rational science but increased rationalisation in the sociological sense, which equates with technical efficiency coupled with greater bureaucracy and accountability. The practice of healthcare delivery—with more prescriptive guidelines and targets, greater demands on time, and more explicit professional roles—means that there is simply not room for the more vague, apparently superfluous, practices on a well functioning ward. The flowers have been elbowed out.

And so, in the context of health priorities, such an apparently inconsequential policy reflects a more general shift in current definitions of care. At this time of year, despite all the calls of commercialisation and trivialisation, in truth most of us still value ritualised contact with loved ones and the demonstration of relationships through giving and receiving. Perhaps, then, now is a good time to think about a broader version of care that increasingly needs to be protected on the ward and within the everyday practices of a hospital. Such a version of care would be thought of not as an outcome that can be delivered but as a relationship that can be exchanged.

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