

**NO HOLDS BARRED** Margaret McCartney

## The ethics of behavioural incentives

Sticks and carrots; push and pull. Research has shown that providing £400 worth of shopping voucher incentives raised the chances of pregnant women stopping smoking from 8.6% to 22.5%.<sup>1</sup> Some low quality evidence has found that financial incentives to breast feed can increase its prevalence, and further research is ongoing.<sup>2,3</sup> And cash rewards reduce smoking rates, but few trials have reported success after the close of the programme.<sup>4</sup>

The National Institute for Health and Care Excellence (NICE) recommends “contingency management” programmes, which award vouchers to people treated for addiction if they test negative for illicit drugs. NICE suggests providing “shopping vouchers of up to £10 in value” for completing HIV testing and hepatitis immunisation.<sup>5</sup>

But should the relationship between professionals, patients, carers, and families become one of financial incentives? Should doctors offer not just evidence about why a particular behaviour is better but also money in an envelope? It seems ethically dubious

to offer cash incentives that can be withheld for “failure to comply”—but this approach sometimes works better than standard care. It may help people from the most deprived communities, who already carry the greatest burden of inequality. The research is brave, even if controversial.

Are there other ways of getting the same effect? Gambling your own money against a National Incentives Service bookkeeper might be a more ethical way to make the best use of incentives: the competition would be against oneself, a contract administered separately from health professionals. Some trials to quit smoking have used a “deposit refund” strategy with as much or more success when compared with rewards, but they generally have poorer take-up. US “social gaming” websites already offer such a service,<sup>6</sup> where people are more likely to lose more weight the more they bet on it. However, one randomised controlled trial has shown short term benefit over months,<sup>7</sup> when we really need interventions that work over years.



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It’s not only patients who have been offered incentives but also GPs, through the Quality and Outcomes Framework. “Points for prizes” turns out to be morale sapping, shameful work, and finding the right boxes to tick occupies time that should be spent listening to patients. These incentives have changed the nature of the consultation, and most patients don’t know the ugly truth of how we are paid.

The jury is still out on incentives for behavioural change. My unease stems from the fact that £10, not a lot of money, is enough to persuade people to have a vaccination or take a blood test. Does this mean that incentives work only because of inequality—because people are poor?

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**BLOG** William Cayley

## Diagnosis: what it’s not

“Phew! At least you don’t have something bad.”

“I know, doctor, but what is it?”

I’m afraid that in medicine we too often focus on exclusion. How often do we see patients admitted to hospital to “rule out” an acute coronary syndrome? How often do we swab a throat to “rule out” strep throat? How often do we see imaging reports that come to the final conclusion that something bad (embolism, pneumonia, or similar) cannot be excluded.

In a *BMJ* blog Richard Smith recently argued that doctors predominantly use “familiar responses to familiar problems” (<http://bit.ly/1SdooXi>), which I think is a good summary of the use of heuristics to make diagnoses. However, one of the most common heuristics used in medicine is a simplification of the scientific approach of



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hypothesis testing: pose a falsifiable diagnosis, then investigate.

This works up to a point—but only up to a point. Finding out what something is not is only the first step towards finding out what it is. Patients with a sore throat don’t just want to know they do not have streptococcal pharyngitis: they want to know what they do have and what to do about it. Similarly, when a patient has chest pain, to provide the reassurance that “you’re not having a heart attack” is only the first (even if very appropriate) step. If the

chest pain continues the patient will want to know what it is and what to do about it. Telling someone what is not wrong only gets you part of the way in giving good care.

Unfortunately, as valuable as the Choosing Wisely ([www.choosingwisely.org](http://www.choosingwisely.org)) and Preventing Overdiagnosis ([www.preventingoverdiagnosis.net](http://www.preventingoverdiagnosis.net)) movements are, they also abet this tendency. Preventing overdiagnosis is a good thing. (After all, we are now finding and treating more and more pulmonary emboli but not actually reducing mortality

related to pulmonary emboli.) But if the message is primarily about what not to do this still leaves us without the resources or mental models for how to think about what to do. Similarly, the Choosing Wisely campaign has been helpful in pointing to where medicine has gone to excess, but 19 of the top 20 recommendations on its website start with “don’t” or “avoid.”

What diagnosis is not is simply “excluding” the bad stuff. Diagnosis needs to be about careful attention to the patient’s history, symptoms, and worries, then doing the best we can to identify what we think is going on—so we can give positive recommendations for what to do about it.

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# Women with UTI should be able to treat themselves

Uncomplicated cystitis is common and easily treated with drugs such as nitrofurantoin. **Kyle Knox** asks why women cannot treat themselves without prescription, saving precious appointments in general practice

**A**cute uncomplicated urinary tract infections (AUUTIs) are common, especially in premenopausal, sexually active women, of whom about 30% will have been affected by age 26.<sup>1</sup> AUUTIs usually resolve without sequelae and rarely progress to pyelonephritis, but they result in considerable morbidity, and the goal of treatment is to ameliorate the severity and duration of symptoms.

The management of these AUUTIs should be relatively uniform because the causes and responses to oral antimicrobials are known and predictable. Public Health England's guidance on their management can be summarised in a simple flowchart, which requires little clinical assessment.<sup>2</sup> In an era of ready access to information, increasing patient autonomy, and overstretched primary care services, therefore, it would seem a good idea for women to be able to access safe and effective treatment without the costs and delays associated with consulting a clinician to get a prescription.

## Three million appointments a year

Cystitis in women is coded as the reason for about 1% of the 300 million general practice consultations held each year in the United Kingdom,<sup>3</sup> and *Escherichia coli* is responsible for over 70% of these cases.<sup>4</sup> A meta-analysis of 32 trials showed that a three day course of antimicrobials was as good as a 5-10 day course in achieving symptomatic cure.<sup>5</sup> Long term (4-10 weeks) and short term (2-15 days) symptomatic cure rates were about 80% and 90%, respectively.

Conventional microbiological diagnosis of AUUTIs involves quantitative culture of a mid-stream sample of urine using thresholds defined more than 50 years ago. However, as many

as half of all AUUTIs have bacterial counts below these thresholds,<sup>6</sup> and strategies that include urine culture are less cost effective than empirical treatment.<sup>7</sup>

Because the goal of treatment is to improve the classic symptoms that most women are able to describe, strategies are now based on these, rather than on tests, to determine management. Three clinical variables (dysuria, nocturia, and cloudy urine) give a positive predictive value (PPV) of 82% for urinary tract infection,<sup>8</sup> and, although dipstick testing had a higher PPV, it did not improve the negative predictive value. Therefore, for AUUTIs in non-pregnant women, UK guidelines now advocate an empirical three day course of nitrofurantoin or trimethoprim when a woman presents with more than two symptoms of AUUTI.<sup>2</sup>

Nitrofurantoin has been available since the 1950s and is generally well tolerated when used in short courses. Nausea and bloating are the most common side effects, and more serious adverse events are associated with longer courses. It should be avoided in people with an estimated glomerular filtration rate of less than 45 mL/min because it is renally excreted and will not achieve therapeutic concentrations in the urine. A seven day course of nitrofurantoin, with additional safeguards, can also be used to treat AUUTIs in pregnancy.<sup>9</sup>

However—despite clear guidance, characteristic clinical syndrome, and predictable efficacy and safety—nitrofurantoin remains available only on prescription. The current prescription-only approach does nothing to limit antimicrobial use but creates urgent demand in primary care, as well as an

additional hurdle for women accessing safe and effective treatment.

Antimicrobial resistance has been compared to global warming because of its potentially apocalyptic impact on the UK<sup>10</sup> with the spread of extended spectrum  $\beta$  lactamases (ESBLs), a family of enzymes that confers bacterial resistance to penicillins and cephalosporins—a particular threat to the management of AUUTIs.

Since 1998 the UK government has considered antimicrobial stewardship a priority. As a result the UK is in the lowest quarter of European countries regarding rates of outpatient antimicrobial prescriptions.

However, women will often try to avoid taking antibiotics for AUUTIs, to persevere with their symptoms, and to be open to alternative strategies.<sup>11</sup> If these strategies fail and antibiotics are needed, it is reassuring that sensitivity to nitrofurantoin remains greater than 90% in bacterial isolates that cause AUUTIs from the community, after more than 50 years of using this antibiotic.<sup>4</sup> This contrasts with resistance to ciprofloxacin of more than 90% in ESBL producing *E coli* in some communities.<sup>12</sup>

## Already available over the counter

Pregnancy tests, emergency contraception, and antimalarial prophylaxis are commonly available in UK pharmacies, and pharmacists are central to assessing compliance and risks during opioid substitution therapy. These are examples of improving access to tests and treatment that involve complex health decisions safely, consistently, and conveniently in that setting. In addition, two antibiotics are already available from pharmacies without prescription in the UK: oral azithromycin for uncomplicated chlamydia infection and topical chloramphenicol for bacterial conjunctivitis.

A change in the regulations that govern access to nitrofurantoin would be worthwhile only if taken up by women seeking treatment. At less than £3 (€4.20; \$4.75) for a three day course of treatment compared with £8.20 for a prescription, it seems unlikely that cost would be a deterrent.

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