

In this issue

On-going technical advances, can we use them to deliver more personalised medicine?

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Personalised medicine

Improvements in basic science and knowledge about the genome have led to the development of the concept of personalised medicine.¹ Not all patients benefit from medicines in the way that you would expect; and whilst in some patients this is because they don't take their medication, in others there is apparently a weaker or absent response. Advocates for personalised medicine suggest that genetic or other aspects of our make-up can account for this; and that alternative treatment strategies may be required in different groups of patients. Personalised medicine is therefore not the development of individual strategies for every patient, more it is dividing patients into groups on the basis of their biological or genomic make-up; and personalising management regimes for these groups. Longitudinal data held in electronic patient records may provide insight into whether people are responsive or not to therapy.

This issue contains two articles that explore this important issue: The first is a leading article looking at real patient longitudinal data in chronic kidney disease (CKD), and suggesting how we might start to think about displaying data to support the practice of personalised medicine.² Between 5% and 10% of the UK population have the condition and having CKD is associated with a much greater cardiovascular comorbidity as well as progression to renal failure.³ The second article is a takes a more global view – a position statement about the importance in informatics of how we might start to use the longitudinal data in medical records to improve our management of chronic disease. Many countries now have substantial longitudinal data within their primary care systems and whilst they are increasingly being used for research they are not as yet being routinely used for the personalisation of care.

The paper by Samal *et al*, suggests how we might utilise longitudinal data to improve care.⁴

Disease registers, electronic prescribing, are you taking your tablets, complex adaptive systems and simple is beautiful

Disease registers are an important tool for managing quality. The paper by Otero *et al*, demonstrates how anthropomorphic data (height, weight and body mass index) in medical records identify many more cases of childhood obesity than those listed in disease registers.⁵ In a similar vein, the paper by Gajria *et al*, shows how it is possible to identify cases likely to have neuropathic pain from primary care records. Neuropathic pain is central 'nerve root' pain that tends not to respond to simple pain killers; this paper is as far as we know the first estimate of the prevalence of this problem from routine data.⁶

We hear from New York, how despite increased error checking, greater concordance with guidelines and lower cost, there is only a very slow increase in electronic prescribing (electronic transmission from physician's office to pharmacy). Physicians' perceptions of patients' preferences are cited as an important barrier;⁷ something reported previously about 'socio-cultural' barriers to clinical coding (i.e. clinicians were sensitive, maybe over sensitive to patients perceptions)!⁸

Ellis continues her description of primary care, and its use or non-use of electronic record systems, as a

complex adaptive system – and makes a very important observation that asymmetry in information appears to be an important barrier to implementing informatics in primary care.⁹ Akerlof,¹⁰ Spence,¹¹ and Stiglitz¹² were collectively awarded the 2001 Nobel Prize for Economics¹³ for their studies of asymmetric information. They found that transactions often go awry if there is asymmetry in information. If replicated in other studies, Ellis has made a very important finding. Many practitioners find ‘informatics’ and ‘IT’ hard to understand – and this asymmetry of information has not been highlighted elsewhere. If correct there are important implications for informatics training and education generally, and specifically around the time of IT system implementation.

Next, Lesselroth *et al*, introduce the idea of a booth to conduct waiting room, pre-consultation screening of patients about their concordance with medication.¹⁴ Concordance with therapy is an enormous problem – for example your editors own work has shown that in osteoporosis only just over half of people (58%) collect a script covering 80% or more of the days in the previous year,¹⁵ and it is likely that not all of these medications are actually taken. Mabotuwana *et al*,¹⁶ illustrated in our last issue that there is a gap between prescribing and dispensing of antidepressant medications.

Finally, Dreizzen *et al*, in their short report demonstrate how you can use low cost standard office applications to manage an important clinical task. They have developed something fit for purpose using an office standard database package. Perhaps a lesson, that not everything needs to be complicated.¹⁷

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