Using behavioural interventions to change health behaviours

Behaviour change interventions in healthcare have traditionally sought to influence people by providing information and incentives to change behaviours that may have negative consequences for their health and well-being. However, insights from behavioural science show that much of human decision making relies on more automatic or unconscious processes and that interventions which ‘nudge’ people in particular directions may be more effective. Professor Ivo Vlaev was one of a group of behavioural and social scientists tasked by the UK Cabinet Office (Behavioural Insights Team) with developing a framework for the application of nudge-type interventions in policy-making. The original framework, called Mindspace, was developed whilst Professor Vlaev was at Imperial. However, together with his colleague Kelly Schmidtke, he has extended and developed the model further whilst at Warwick Business School, to enable more effective intervention development for improving health outcomes.

This case studies outlined here draw on a number of behaviour change projects involving Professor Vlaev and WBS colleagues:

**Priming hand-hygiene.** This study looked at whether placing clean smells or pictures of eyes near the entrance of the ward increases the number of people who clean their hand with soap and gel when entering, and has already helped improve hand-hygiene in pilot trial. The researchers found that the low rate of hand-hygiene compliance is largely attributable to forgetfulness so an intervention that engages with automatic decision making processes was called for. They inserted subtle cues (or ‘primes’) into the hospital environment to remind people to clean their hands, either by reminding them of social etiquette, using a poster of human eyes, or cleaning products, using smells reminiscent of cleaning products. These cues more than doubled hand-hygiene compliance rates. The researchers are now scaling up this work at Birmingham Heartlands Hospital with funding from the Health Foundation.

**Medication adherence.** This strand of research involves a number of separate studies examining whether sending patients with specific medical conditions behaviourally informed text-messaged reminders, the so called ‘commitment devices’, helps them to adhere better to their medication regime. Another study looks at ways of improving adherence to antibiotic medication. An estimated 20–50% of patients fail to adhere to their antibiotic medication regimen. Non-adherence to medication leads to relapse of disease, increase in antibiotic resistance and the spreading disease to uninfected persons. The researchers are currently developing a model in
the lab to pre-test various behavioural interventions before they are applied in the ‘field’ in Pakistan.

**Organizational learning.** This study examines whether posting dedicated lesson of the month regarding patient safety in a specific salient location and encouraging nurses to talk to each other about the lessons of the month increase organizational learning. The evidence revealed significant positive impact.

**Cost effective medication choices.** This study examines whether presenting doctors with an explicit choice between two simultaneously presented and equally effective medications with their association price helps them choose the cheaper medication.

**Visualising chance in medical decisions.** This research considers whether presenting decision makers with graphs that include lines separating chance from typical performance, also known as Control Charts, helps statistically guide their decisions. A related study involved helping hospital decision makers to consider the role of chance when reviewing performance measures. This was done by adding references lines to charts that make irregular performance measures visually stand out.

**Reducing missed hospital appointments.** This study looked at whether stating appointment costs in SMS reminders reduces missed hospital appointments. The researchers undertook two randomised controlled trials in one NHS Trust that tested the impact of rephrasing appointment reminders on Did-Not-Attends (DNA) rates in the United Kingdom. Participants were outpatients with a valid mobile telephone number and an outpatient appointment. Appointments were randomly allocated to one of four reminder messages, which were issued five days in advance. Message assignment was then compared against appointment outcomes (appointment attendance, DNA, cancellation by patient). The researchers found that moving from the existing reminder to the more effective costs message would result in 5,800 fewer missed appointments per year in the NHS Trust in question, at no additional cost. There are plans to extend this work with Birmingham Cross City Clinical Commissioning Group (an application for NIHR Research for Patient Benefit has been submitted).

There are a number of similar studies run in collaboration with Public Health England, which look at how changes to the wording of framing of text messages and other forms of communication may impact positively on changes in behaviour. In particular, **improving uptake of weight management services** via school-based BMI surveillance and parent notification as part of the National Child Measurement Programme, **improving effectiveness of messages prompting completion of an online alcohol screening questionnaire** on the Drinkaware website, **improving the uptake of cervical and breast cancer screening** via better worded SMS appointment reminders, and **improving the effectiveness of drug prescription feedback letters from the NHS Chief Medical Officer to GPs**. All those studies have been completed already, data analysed, and academic papers are currently written for publication.

**Shared medical decision making and the role of interpersonal emotions on choice.** This strand of research includes two studies aimed at investigating the role of interpersonal emotions
and their effects on treatment choice. The studies are being undertaken in collaboration with Which?, the UK Consumers' Association which actively conducts research among its 40,000 panel members.

**Using behavioural interventions to change financial behaviours**

Those case studies are based on projects aiming to change financial behaviours.

*Increasing debt repayment.* The Behaviour Insights Team (Cabinet Office) and Her Majesty’s Revenue and Customs on a project “Investigating the effect of letter wording on taxpayer behaviour”, specifically, the UK government benefited from identifying more effective ways of collecting the debts owed to it by individuals.

*Improving the design of retail financial products.* The Fairbanking Foundation on encouraging the financial services industry (retail banks) to redesign their products in order improve the financial well-being of customers; which is achieved by embedding behavioural insights into the design of products. We have collected evidence for such changes in the industry standards in the UK as a result of the Fairbanking certification of financial products. Ivo Vlaev has been involved in the development, as well as continuous improvement, of the certification standards. For more information, see www.fairbanking.org.uk.

*Improving the effectiveness of the Money Advice Service (MAS).* MAS is a government organisation that provides money advice for consumers, thus enabling them to take the right financial decisions. Ivo Vlaev has worked on improving the effectiveness of their service and has provided valuable input in the development of the MAS’ Financial Capability Strategy for the UK.

*Improving local authorities’ collection of payments.* Working with Ernst & Young (EY) and Croydon Council to develop messaging to reduce attendance of court summons and increase payments for council tax. The activities involved creating a trial to nudge customers with unpaid council tax to make payment instead of attending court as requested by the summons. We used behavioural science to design 5 different text messages to send to customers who had been sent a court summons notice. All messages showed an improvement in payment. The service plans to extend pilot and also to scale up to all instances of increasing payment e.g. parking, penalty notices e.g. fly tipping, ASC debt, Business rates.