

## In this issue

---

### In this issue: tools and processes that translate knowledge into practice

**Simon de Lusignan**

Professor of Primary Care and Clinical Informatics, Department of Clinical and Experimental Medicine, University of Surrey, Guildford, UK

Editor Journal of Innovation in Health Informatics

#### TRANSLATING KNOWLEDGE INTO PRACTICE

---

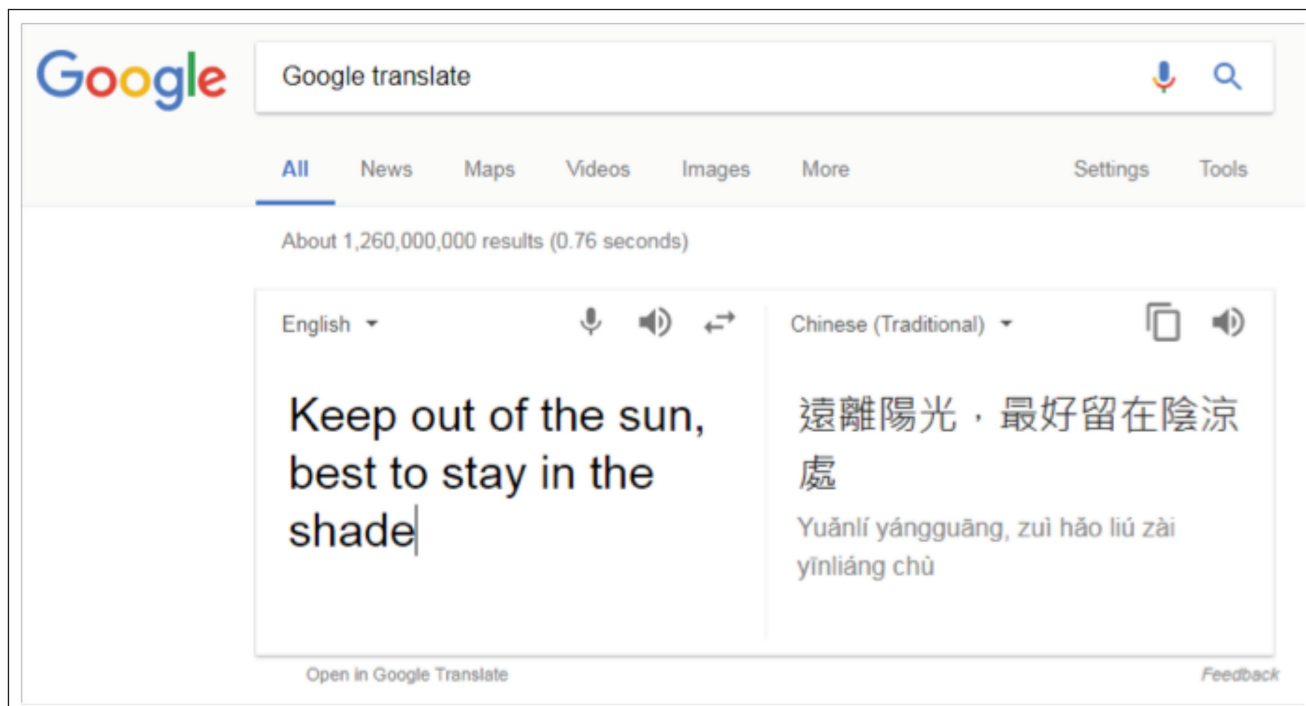
Internationally, one of the greatest challenges is integrating knowledge into practice. Roger's theory of Diffusion of Innovation, first published in 1962 with its fifth edition in 2003,<sup>1</sup> sets out how new ways of working are adopted very slowly. His ideas build on those of 100 years before, and published in 1903, where the French philosopher Tarde described how *imitation* was the way that behaviours spread through groups.<sup>2</sup> Roger's treatise includes descriptions of innovators and early adopters – and many of us in informatics have talked about the importance of trying to engage in innovation (one of the purposes of this journal)<sup>3</sup> and to encourage adoption; without necessarily routing our work in Tarde and Roger's theories.<sup>4,5</sup>

We publish an article in this issue which describes the integration of multiple alternatives for managing low back pain, and to foster collaboration between different groups of professionals who are often distributed across various sites.<sup>6</sup> This study describes innovative technology, and if widely adopted takes us one step closer to using the computerised medical record to coordinate care.

#### TO GT OR NOT GT, THAT IS THE QUESTION?

---

We publish an article on a translation app, designed specifically for medical usage.<sup>7</sup> Many of us have used Google Translate (GT) in our consultations, when stuck with a patient with poor language skills. However, we know that there are strengths and weaknesses, and I feel most ill at ease when the language translated to is one I have no knowledge of at all. My last consultation I used Google Translate in was with someone for whom Traditional Chinese (Mandarin) was the best language choice. I was trying to explain that this was likely a photosensitivity and taking an antihistamine and keeping out of the sun was what was required (Figure 1)! In these circumstances I try to express the idea I am trying to convey in two different ways. Hopefully, doing this avoid translation errors. However, I am unable to validate the answer. Careful thought and debate are needed as to whether we need to develop new language apps (It is a nobler thing to do?), or to find ways to systematically report errors with tools like Google Translate to reduce potential clinical pitfalls.



**Figure 1** Medical advice given using Google translate – the user may know nothing about the validity of the outputs

## UNCHECKING A BOX HAS AN EFFECT SIZE – ON ELECTRONIC FORMS

We include an article about the simple use of a tick-box that has to be unchecked to change the uptake of a test. It is very important to flag how a tiny informatics intervention has an effect. The example in the paper is where a provider wishes to discourage the use of a test called amylase alongside a more specific test called lipase.<sup>8</sup> The remit of this journal is to report the impact of the informatics; the issues over which tests to use in pancreatitis are beyond the scope of this journal and remain being discussed in the peer review literature, including a recent Cochrane Review.<sup>9</sup>

## A BIBLIOMETRIC ANALYSIS OF RESEARCH OUTPUTS FROM UK GENERAL PRACTICE

High levels of data quality support patient care as well as provide an ever increasing volume of data for research. Chaudhry et al.<sup>10</sup> report on this growth over time. Three principal UK data sources have been the major source of research studies over time. These are the Clinical Practice Research Datalink (CPRD),<sup>11</sup> The Health Improvement Networks<sup>12</sup> and QResearch.<sup>13</sup>

However, these are not the only data sources in the UK: The Royal College of General Practitioners Research and Surveillance Centre is one of the oldest sentinel networks in Europe, and predates the reported sources. However, up to 2013, its work was limited to reporting on influenza,<sup>14</sup> infectious disease<sup>15</sup> and vaccine effectiveness.<sup>16</sup> More recently, it has extended its remit into diabetes and other non-communicable diseases.<sup>17</sup> ResearchOne, based on The TPP SystemOne CMR system provides another example.<sup>18</sup>

## ADDITIONAL UNPUBLISHED ABSTRACTS FROM INFORMATICS FOR HEALTH

The final, and substantial part, of *In this Issue* includes the additional publications from the joint European Federation for Medical Informatics<sup>19</sup> and Farr Institute Medical Informatics (MIE 2017) conference: *Informatics for Health*. It has been a new experiment for this journal to publish abstracts, and I and the Editorial team would appreciate feedback, and seeing if these are widely cited. Table 1 lists their titles, country of origin and page number. They should be cited as: authors names; title; page numbers; in – Scott P, Cornet R, McCowan D and Peek N. Addendum to Informatics for Health 2017: Advancing both science and practice.<sup>20</sup> *Journal of Innovation in Health Informatics* 2017.

**Table 1 Country of origin of first author and scope of the submissions to Informatics for Health/Medical Informatics Europe 2017 (MIE 2017)**

Country	Title	Page No
UK	Meeting clinicians' needs in the design of a Personal Health Record	291
UK	Community detection algorithms for analysis of biological networks	292
UK	Which outcomes matter to patients? Comparing the relationship between patient-reported and traditional outcome measures on patient satisfaction in surgery	293
UK	Clinical Decision Support for Diabetes in Scotland: evaluation of clinical processes and outcomes	293
UK	Evaluation of CPRD GOLD e-learning	294
UK	Evaluating the impacts on health outcomes of Welsh Government funded schemes designed to improve the energy efficiency of the homes of low-income households	295
Spain	Involving physical activity in insulin recommender systems with the use of wearables	296
UK	Supporting biomarker discovery using text mining	296
Canada	A new data opportunity for community nutrition surveillance: estimating spatial patterning of dietary behaviours using grocery transaction data	297
Turkey	C3-Cloud: a federated collaborative care and cure cloud architecture for addressing the needs of multi-morbidity and managing poly-pharmacy	298
UK	The Biomedical Informatics Network for Education, Research and Industry (BINERI) at the University of Leicester	299
UK	Simulated data: an object oriented approach	300
Germany	User-oriented oncological wiki through requirements prioritisation based on Kano-classification	300
UK	Sharing the process: the performance and portability of the ICONIC de novo sequence assembly pipeline in a virtual environment	301
Canada	A process evaluation of a web-based self-management tool	302
South Korea	Sharing medical images: challenging issues and lessons learned from pilot implementation at a tertiary university hospital in South Korea	302
Austria	Semantic technologies for improved primary and secondary use of clinical data	303
UK	Automating clinical pathways using executable business process model and notation	305
UK	GlobalSurg: enabling global health research in surgery	305
USA	A precision medicine approach to the prediction of kidney stones formation for an at-risk population of individuals admitted to the ER	306
Taiwan	GIS mapping of Dengue incidence in Punjab, Pakistan	306
Netherlands	Risk factors for incident heart failure in a population-based cohort using linked electronic health records (CALIBER)	307
UK	ePrescribing – how does it affect reported medication errors?	308
Spain	Using the Nextflow framework for reproducible in-silico omics analyses across clusters and clouds	308
Canada	Developing a set of administrative case definitions for identifying sleep disorders in ICD-coded data	309

## REFERENCES

1. Rogers E. *Diffusion of Innovations*, 5th edition. New York: Free Press, 2003. ISBN 978-0-7432-5823-4.
2. Tarde G. *The Laws of Imitation*. New York: Henry Holt and Company, 1903. Available at: [https://archive.org/stream/lawsofimitation00tard/lawsofimitation00tard\\_djvu.txt](https://archive.org/stream/lawsofimitation00tard/lawsofimitation00tard_djvu.txt). Accessed October 2017.
3. de Lusignan S. Journal of Innovation in Health Informatics: building on the 20-year history of a BCS Health peer review journal. *The Journal of Innovation in Health Informatics* 2015;22(1):152. doi: 10.14236/jhi.v22i1.152.
4. Schreiber R and Shaha SH. Computerised provider order entry adoption rates favourably impact length of stay. *The Journal of Innovation in Health Informatics* 2016;23(1):166. doi: 10.14236/jhi.v23i1.166.
5. Brennan J, McElligott A and Power N. National health models and the adoption of e-health and e-prescribing in primary care - New evidence from Europe. *The Journal of Innovation in Health Informatics* 2015;22(4):399–408. doi: 10.14236/jhi.v22i4.97.
6. Austin R, Schulz C and Monsen KA. An informatics approach to inter-professional management of low back pain: a feasibility study using the Omaha System. *The Journal of Innovation in Health Informatics* 2017;24(3):268–274. doi: 10.14236/jhi.v24i3.929.
7. Day KJ and Song N. Attitudes and concerns of doctors and nurses about using a translation application for in-hospital brief interactions with Korean patients. *The Journal of Innovation in Health Informatics* 2017;24(3):262–267. doi: 10.14236/jhi.v24i3.916.

8. Sullivan P, Waymack J, Jaeger C and Griffen D. Effectively reducing amylase testing using computer order entry in the emergency department: quality improvement without eliminating physician choice. *The Journal of Innovation in Health Informatics* 2017;24(3):257–261. doi: 10.14236/jhi.v24i3.907.
9. Rompianesi G, Hann A, Komolafe O, Pereira SP, Davidson BR and Gurusamy KS. Serum amylase and lipase and urinary trypsinogen and amylase for diagnosis of acute pancreatitis. *The Cochrane Database of Systematic Reviews* 2017;4:CD012010. doi: 10.1002/14651858.CD012010.pub2.
10. Mannan F, Chaudhry Z, Gibson-White A, Syed U, Ahmed S, Kousoulis A, et al. Outputs and growth of primary care databases in the United Kingdom: bibliometric analysis. *The Journal of Innovation in Health Informatics* 2017;24(3):284–290. doi: 10.14236/jhi.v24i3.942.
11. Kousoulis AA, Rafi I and de Lusignan S. The CPRD and the RCGP: building on research success by enhancing benefits for patients and practices. *British Journal of General Practice* 2015;65(631):54–55. doi: 10.3399/bjgp15X683353.
12. Blak BT, Thompson M, Dattani H and Bourke A. Generalisability of The Health Improvement Network (THIN) database: demographics, chronic disease prevalence and mortality rates. *Informatics in Primary Care* 2011;19(4):251–55.
13. Hippisley-Cox J, Stables D and Pringle M. QRESEARCH: a new general practice database for research. *Informatics in Primary Care* 2004;12(1):49–50.
14. Correa A, Hinton W, McGovern A, van Vlymen J, Yonova I, Jones S, et al. Royal College of General Practitioners Research and Surveillance Centre (RCGP RSC) sentinel network: a cohort profile. *BMJ Open* 2016;6(4):e011092. doi: 10.1136/bmjopen-2016-011092.
15. de Lusignan S, Correa A, Pathirannehelage S, Byford R, Yonova I, Elliot AJ, et al. RCGP Research and Surveillance Centre Annual Report 2014-2015: disparities in presentations to primary care. *British Journal of General Practice* 2017;67(654):e29–e40. doi: 10.3399/bjgp16X688573.
16. Pebody R, Warburton F, Ellis J, Andrews N, Potts A, Cottrell S, et al. Effectiveness of seasonal influenza vaccine for adults and children in preventing laboratory-confirmed influenza in primary care in the United Kingdom: 2015/16 end-of-season results. *Euro Surveillance* 2016;21(38). doi: 10.2807/1560-7917.ES.2016.21.38.30348.
17. McGovern A, Hinton W, Correa A, Munro N, Whyte M and de Lusignan S. Real-world evidence studies into treatment adherence, thresholds for intervention and disparities in treatment in people with type 2 diabetes in the UK. *BMJ Open* 2016;6(11):e012801. doi: 10.1136/bmjopen-2016-012801.
18. ResearchOne Health and Care Database. Available at: <http://www.researchone.org>. Accessed October 2017.
19. European Federation for Medical Informatics. Available at: <https://www.efmi.org/>. Accessed October 2017.
20. Scott P, Cornet R, McCowan D and Peek N. Addendum to Informatics for Health 2017: Advancing both science and practice. *The Journal of Innovation in Health Informatics* 2017;24(3):291–310. doi: 10.14236/jhi.v24i3.969.