

In this issue

In this issue: prerequisites for precision medicine are genomics, computerised medical record systems and big data analytics

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Your editor’s choice in this issue of the journal is a paper by Ronquillo *et al.*¹ The key message from this thought-provoking paper is that genomics, computerised medical record (CMR) systems and big data analytics are prerequisites for the delivery of precision medicine (Figure 1). All three need to be more interoperable if we are to make progress. They urge us to plug the gaps in our systems if we are to deliver the allure of personalised medicine. For example, there are a large number of genetic tests that are impossible to code in the systematised nomenclature for medicine – clinical terms (SNOMED CT). The strengths and limitations of the coding systems area is something we have previously discussed in this journal.^{2,3}

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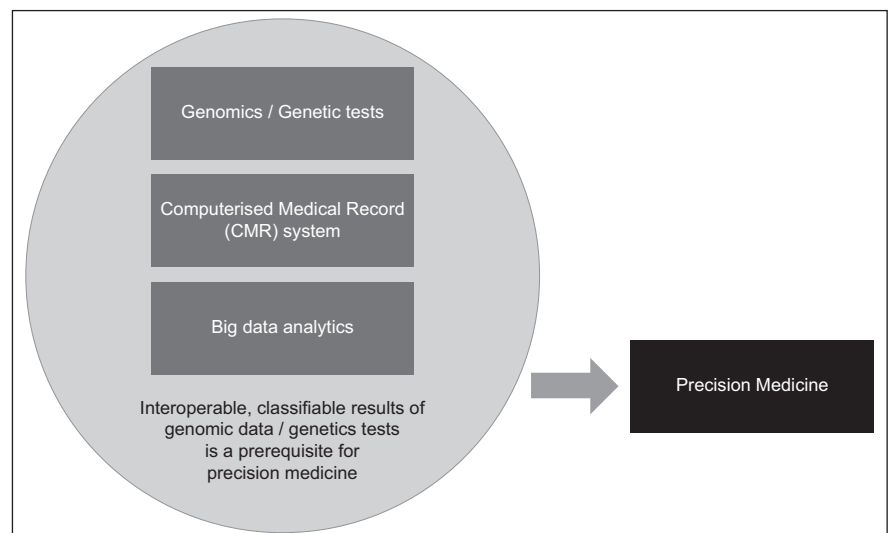


Figure 1 The prerequisites to deliver precision medicine are interoperable genomics big and CMR systems and the application of big data analytics

LAUNCH OF A UK FACULTY OF CLINICAL INFORMATICS (FCI)

This issue of the Journal of Innovation in Health Informatics comes out in the same month as we see the launch of the Faculty of Clinical Informatics (FCI).⁴ Your editor is proud to be one of the foundation fellows of this new faculty. FCI provides the opportunity to give our discipline a further boost. My Editorial team and I would very much like this journal to take a role in promoting learning from the new FCI, and for this knowledge to be disseminated through the pages of this journal.

MAKING USE OF ONLINE TOOLS AND APPS INSTEAD OF BUILDING A RELATIONAL DATABASE

Thomas describes how he made use of Google's free cloud-based services to create a rota management system for a complex on-call system. This was piloted over a two-year period. Leave requests and swaps appear to be so much more straightforward... customised free tools may provide a cost-effective alternative to the more traditional approach of developing an SQL database.⁵

FEMALES ARE REFERRED MORE THAN MALES

An excellent Canadian primary care paper describes how the rate of referral of females is one-and-a-half times that of males. Importantly, they conclude that 86% of the variation in referral is explained by the patient level and only 16% is by the practice level factors. These findings have important implications for health service management. There appears to be relatively little scope to affect the referral numbers by practice level interventions.⁶

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INTEGRATION OF EHEALTH DATA INTO CLINICAL RECORDS

We commend the use of formal modelling methods – which make observations and findings about clinical findings much more accessible to software engineers.⁷ We publish a paper that takes a modelling/use case approach about how to incorporate eHealth data into CMR systems.⁸

PSEUDONYMISED HOSPITAL DATA ARE USED MORE AND MORE IN RESEARCH

Chaudhry *et al.*⁹ report how UK hospital data are used more and more in research. They are used on their own, but more and more studies use hospital data linked to primary care data. Primary care data are good for providing information about the process of care, but hospital data are useful in identifying health outcomes and costs.

PERMUTATIONS OF MULTI-MORBIDITY

The second study from Canada sets out how there are perhaps more permutations/different combinations of multi-morbid disease that perhaps we might anticipate.¹⁰ From a database of over a million people they found around 6,000 different combinations in females and 4,000 in men. When they looked at more detailed permutations, the numbers were approximately 15,000 and 10,000, respectively, for females and males. Knowing there is such a large number of different combinations is important and has implications for our potential to offer stratified, let alone precision, medicine. The CMR systems we look to support the delivery care to people with multi-morbidity – must not only offer more minimally disruptive medicine,¹¹ they must also potentially collate data from vast numbers of possible combinations of conditions.

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