Editorial
DOI: 10.1159/000446529
Published online: June 1, 2016

Access for All: A Personalised Approach

Denis Horgan
European Alliance for Personalised Medicine, Brussels, Belgium

On Monday December 7, 2015, during the Luxembourg European Union (EU) Presidency, the Council of the EU issued its conclusions on personalised medicine (PM) for patients, highlighting how ‘the development of personalised medicine may offer new opportunities for the treatment of patients in the European Union … allowing healthcare providers to offer better-targeted treatment, avoid medical errors and reduce adverse reactions to medicinal products’ [1]. PM certainly has the potential to improve outcomes for European citizens, but its undoubted promise must be balanced against a number of highly relevant challenges that may limit its positive impact on 21st century medicine. Issues such as increasing costs, inequitable access across European countries and regions and the need for a PM-relevant ethical, regulatory and reimbursement environment are currently undermining PM integration at European and national levels.

Due to the need to address these important issues, the Brussels-based European Alliance for Personalised Medicine (EAPM) assembled a multi-stakeholder panel to identify and precisely define the critical barriers that limit PM uptake, while also developing putative solutions that will enhance patient access to PM across Europe. The outputs from their discussions are captured through a series of articles in this special issue of Public Health Genomics. These articles complement the activities of the EAPM’s Working Group on Access, which is surveying the European landscape and developing policy recommendations in this complex domain.

While PM-enabled approaches have been particularly effective in certain cancers, where innovative medicines such as imatinib mesylate in chronic myeloid leukaemia and trastuzumab in erbB-2-positive breast cancer have brought practice-changing clinical benefits to patients, the spiralling costs associated with personalised or precision cancer medicine (PCM), even for new standard medicines such as imatinib mesylate, are a cause for concern [2]. Lawler and Sullivan [2] highlight the need to address the cost-value dilemma in PCM, moving beyond a simplistic ‘what the market can bear’ approach to a more nuanced value-based pricing philosophy. Employing this approach and embedding this philosophy into cancer care pathways can help reward innovation that has truly transformative potential (as opposed to the marginal ‘me too’ mentality that is potentially reducing therapeutic ef-
fectiveness in cancer clinical trials) [3] and allow the benefits of a value-centred PCM strategy to accrue for both patients and societies.

Addressing the value perspective through the prism of companion diagnostics is the particular focus of the article by Wurcel et al. Companion diagnostics form an integral component of the PM framework, enabling patient selection/stratification for the application of innovative therapies. While companion diagnostic approaches have been effectively employed in the cancer domain for a number of years, they are now becoming increasingly relevant as aids to treatment decision-making in both genetic and infectious disease. However, despite the undoubted benefits of the precise application of these in vitro diagnostic (IVD) tests, the companion diagnostics landscape in Europe is fragmented. There is a clear dislocation between the innovative medical intervention and its companion diagnostic, compounded by issues of market access and lack of appropriate reimbursement frameworks. In Germany, for example, innovative medicines must be reimbursed from the day of approval, while for companion diagnostics, a different more time-consuming regulatory route is followed. In many countries, approval for an innovative medicine is not linked to the availability of an upstream companion diagnostic test, thus emphasising this disconnection between the regulatory and reimbursement pathways for innovative medicines and IVDs. Funding mechanisms and pathways for molecular diagnostic tests across Europe are unclear, although the recent recommendation in the UK for commissioning of cancer molecular diagnostics at the national level [4] is to be welcomed.

Equitable access to molecular diagnostics is also the focus of the article by Plun-Favreau et al., with a particular concentration on the key issues of how relevant policy and health technology assessment (HTA) developments can ensure that patients across Europe have access to appropriate molecular diagnostic tests. There is a clear need for a dedicated diagnostics HTA framework, but one which integrates not only cost, but also value and societal benefit into its evaluation processes. Evidence generation for molecular diagnostics, with clear assessment frameworks, should also be a component of an improved HTA process. Additionally, the involvement of patients in HTA is desirable, providing a valuable, yet to date often unheard perspective, one that can undoubtedly help inform HTA decision-making.

The patient perspective and patient access are also highlighted in the paper by Souliotis et al. In their article, the importance of access to innovation for therapeutic benefit is recognised, but there is also an acknowledgement of the difficulties encountered in identifying and quantifying the impact of access issues across Europe. In this regard, the authors, including members of the Patient Access Partnership (PACT; a patient-led multi-stakeholder partnership to address inequalities in access to optimal health care in Europe), present a conceptual framework for mapping access to health care across the EU. Using this approach, a 5A’s definition of access to health care (availability, adequacy, accessibility, affordability and appropriateness) has been produced, leading to the development of a 5A’s questionnaire that has been piloted in member organisations within the EU28 using a multi-stakeholder approach. A total of 116 organisations from different sectors participated in this pilot initiative, and the results highlight that this approach is a potentially valuable tool to identify access challenges and develop policies to address these challenges and help reduce inequalities in health.

Returning to the concept of a value-based diagnostic approach, Schneider et al. emphasise the importance of using high-quality clinically annotated biospecimens from patients enrolled in randomised clinical trials or from large longitudinal cohorts (e.g. the US 1 Million Veteran’s Study or the UK 100K Genomes Project) to develop and validate candidate molecular diagnostic tests. Optimising the benefit and value of these biobanks requires high-quality biospecimens (including annotated details on collection/storage/quality control, etc.), comprehensive linked clinical information and a broad consent to allow the materials and data to be employed in discovery science applications beyond that envisaged in the context of the original clinical trial/study. Increasingly, there is evidence accruing that patients want their material to be used in a variety of research applications [5], and this should be encouraged and facilitated, without compromising the privacy rights of the individual.

PM approaches are at different stages of development and application in different disease settings. For brain disorders, Esposito et al. emphasise how the diverse biologies and genetic complexities of neurological diseases, e.g. Huntington’s disease, Alzheimer’s disease and Parkinson’s disease, of neuropsychiatric diseases, e.g. schizophrenia and dementia, and of malignancy, e.g. brain tumours/glioma, can present significant challenges, but they also highlight how a more granular dissection of these conditions is starting to inform disease prognosis and patient management. From a PM perspective, a greater understanding of brain disorders is fuelling new therapeutic possibilities. However, there are also some
brain disorder-specific challenges which need to be addressed. The brain is not as readily accessible as other parts of the body for therapeutic intervention, while availability of brain tissue for research is, in the majority of disease indications, only possible post mortem. Access to this material is further hampered by a decline in clinical autopsy rates and a paucity of brain donors. Development of brain tissue banks, such as BrainNet Europe [6], hold promise, but there are still a number of ethical and regulatory issues that need to be addressed to ensure availability of appropriate materials for research.

Ethical issues are also at the heart of the article by Brall and Schröder-Bäck, who evaluate the key ethical challenges that are encountered for PM in a health care system that is frequently under-resourced, due to the consequences of the economic crash in 2008. Priority setting and resource rationing can be particularly challenging in this setting. Employing a capability-based approach may have relevance in assessing the appropriate options for patients to gain access to PM-enabled therapeutic intervention.

As attempts are made to realise the aspirations of embedding PM into health care systems and patient care pathways in Europe, a question that is frequently asked is whether our regulatory environment is fit for purpose? Leyens and Brand evaluate the regulatory environment, particularly in the context of early patient access to medicines. While there have been welcome regulatory developments in promoting early access to innovative medicines (e.g. adaptive pathways pilot and early access to medicines scheme), access remains extremely variable across Europe, underpinning the need for a more coordinated and harmonised approach that links HTA and market authorisation. Most importantly, HTA bodies should embrace the new flexible regulatory methods in order to allow an effective early patient access.

In conclusion, there are significant challenges that limit patient access to new medicines and in particular companion diagnostics. This special issue has highlighted these specific challenges and a number of potential solutions have been proposed. Cooperative approaches in the access to appropriate health care interventions should be encouraged within the context of a philosophical shift from a cost-based to a value-based perspective. If these complex issues can be addressed within a patient-focused harmonised framework, the potential for a PM-enabled health care system can be realised for the citizens of Europe.

References