

**Horst Domdey**

**Personalized Medicine: With Big Data to Better Health?**

The future of healthcare will be governed by personalized medicine. Already today personalized medicine leads to more effective and more efficient treatments especially of those patients who suffer from severe diseases. Biomarker based diagnoses helps to stratify these patients so that they can be grouped in subpopulations which will then receive the best possible therapy. Therapeutic decisions, however, still mainly rely on the individual evaluation of the physician (or a group of them) who make their decisions based on their own or – better – their collective knowledge and experience which treatment might be the best. The more experience can be contributed the better are the chances for a successful outcome of the therapeutic treatment. Therefore, using the information of the therapeutic outcomes of the treatments of hundreds of thousands of patients – Big Data – will become an excellent instrument to improve the therapy of every individual patient in an unprecedented way. In the past years, numerous activities to produce and collect these Big Data have been started in Europe, with England's 100,000 Genome Project leading these efforts. Although the possibilities to enter into a new dimension of personalized healthcare through the use of Big Data seem to promise a brilliant future when it comes to successfully treating severe diseases there is, however, still a big number of technical and sociological hurdles which have to be overcome, because the new concept of the digital patient will not only require a global interconnection and integration of all the individual data but it will also need sophisticated solutions to protect the privacy of the individual patient.