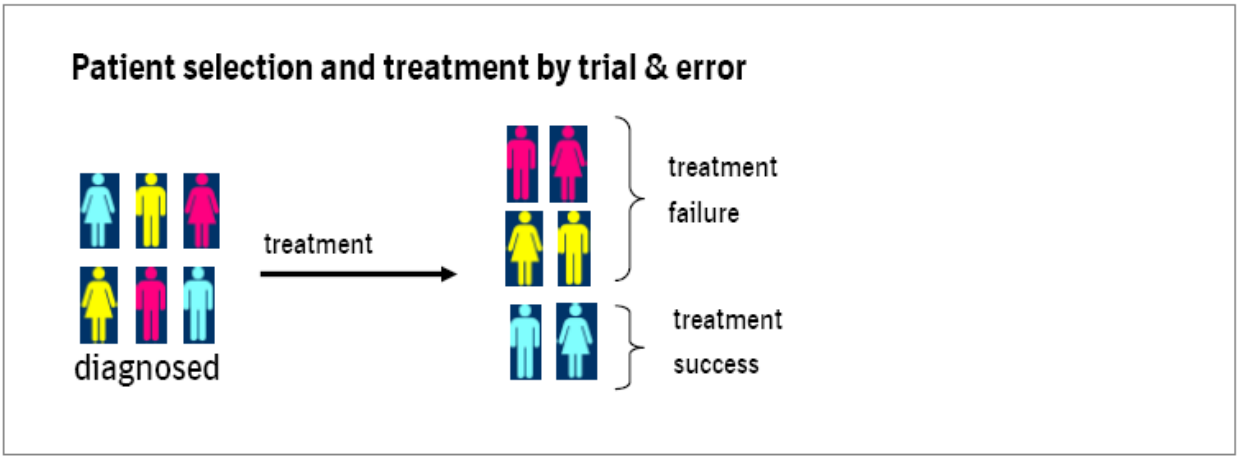
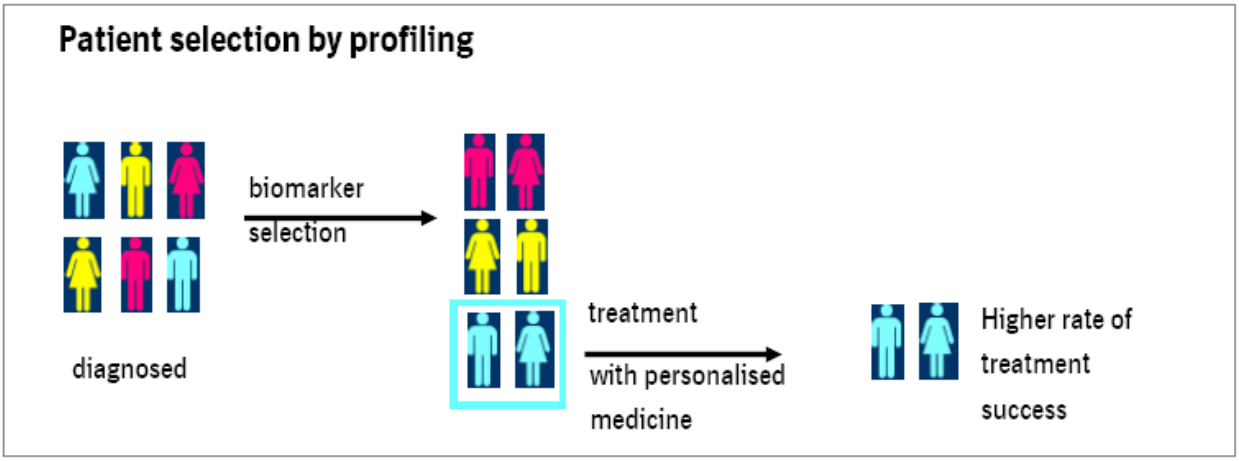
PERSONALISED MEDICINE

1. What is personalised medicine?

Personalised medicine is the concept that drug therapy can be tailored to a person's genetic make-up. It has long been recognised that patients respond very differently to the same medication. If these differences can be linked to an individual's genetic variations, then it opens up opportunities to screen patients before therapy. This could avoid a trial-and-error approach to prescribing. By selecting the right medication first time and tailoring the dose, it is hoped that personalised medicine will reduce the number of adverse reactions that occur. This could also mean that patients who are not likely to respond to treatment will not receive unnecessary medicines with their attendant side effects.





2. How does personalised medicine help us understand diseases?

Thanks to the recent developments in genetics such as the Human Genome Project it is now possible to understand the impact of genetics in diseases.

These scientific advances have revealed that many diseases such as cancer and diabetes are much more varied than previously thought. In the past cancer was classified by the organ or tissue location of the tumour. Today, cancer is characterised by its particular molecular profile such as the genes it expresses or its cell surface proteins, for example.

Lung cancer once thought of as homogenous disease is many different types of disease. As more lung cancer biomarkers are discovered so the amount of individual lung cancer types grows. In addition this expands opportunities to develop drugs to target these new types of cancers.

3. How will personalised medicine change healthcare?

Physicians have always been trying to personalise medicine by taking into account an individual's medical history, family history and any diagnostic tests such as laboratory or imaging tests. The opportunity to personalise medicine can now come from a new range of diagnostic tests such as testing gene expression, proteins or metabolites. Physicians will be able to discover the individual profile of a person's disease.

Some believe that personalised medicine is entering a new phase, marked by the emergence of treatments, now in clinical trials, for patients who develop resistance to personalised drugs.[1] Currently, it seems that the most progress in personalised medicine is being made in the field of oncology.[2]

Personalised medicine could also have cost-saving benefits for governments and payers.

References

1. Personalized Medicine Coalition (2006). *The Case for Personalized Medicine*, http://www.personalizedmedicinecoalition.org/communications/TheCaseforPersonalizedMedicine_11_13.pdf , Date accessed 21 April 2009.
2. The Royal Society (2005). *Personalised medicines: hopes and realities*, http://royalsociety.org/displaypagedoc.asp?id=15874, Date accessed 21 April 2009.

