# Review of: "A Value-Driven Future Approach to Precision Medicine for Health Sustainability in New Zealand: A Perspective"

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Potential competing interests: No potential competing interests to declare.

The manuscript addresses various aspects of developments in molecular biology, biotechnology, therapeutics and diagnostics. We are clearly at a point in history where the potential for disruptive change may result in major shifts one aspect of which is from population to personal medicine. It remains to be seen whether personalized medicine will be applied to challenging unmet medical needs often of underlying genetic origin or if the approach to healthcare will pivot to personalized medicine. This manuscript addresses a wide range of issues that will contribute the future direction of medicine. It is not clear to me why the title of the article includes the statement “for health sustainability in New Zealand” since most of the observations are sufficiently general to be relevant globally.

Based on some of the comments below there may be value in including separate sections on ethical considerations and the potential impact on healthcare professions, particularly regarding anticipated future roles and responsibilities of technical and clinical staff.

Specific Comments

When would the search for genetic and systemic biomarkers begin to guide interventions to prevent rather than treat disease

P2 - Where targets are known and data on likely impacts of a particular chemical structure are known a selective diagnostic strategy can be adopted. However, the ability to predict safety and efficacy broadly presumably requires a comprehensive understanding of the individual. How much data would be sufficient? In general terms, is it possible for personal databases to contain enough information on targets for matching with novel therapeutic moieties to maximize efficacy and minimize toxicity? Should the construction of these databases be a priority?

P6, para 5 – A caution should be added to the direct to consumer comment regarding the ethical considerations of making the results of diagnostic tests available without appropriate medical interpretation.

P8, para 1 – What is the projected role of health care professionals in digital and telemedicine? Since the benefits of unfolding biomedical science and technology will result in a shift from treatment to prevention and population to personal medicine how will patient monitoring with respect to potential interventions change?

P9, para 2 – The change in the role of healthcare professional should be included as a challenge. Since the anticipated change to accommodate new science and technology is imminent the vision of a new healthcare workforce is required to facilitate the transition.

P9, para 4 – While the patient is a consumer, the notion of consumption suggests choice. Most patients would take the path to health. It might be better to view the patient as a beneficiary since, presumably, only in rare cases, due to unique financial or strong belief considerations, would treatment be viewed as a choice.

P12, para 2 – What about basket studies where various types of rare diseases (cancers) are bundled into a single clinical trial in the hopes of teasing out the benefit of a treatment?

P12, para 2 – Where does open science fit with respect to intellectual property rights? Is there no value to patients and society of having some findings being made public quickly to promote rapid technological innovation? In these cases the value may be in the regulatory package and product approval and not exclusively in IP.