Reviewer's report

Title: From two-tiered health systems to a two-tiered personalized medicine?

Version: 2

Date: 22 March 2015

Reviewer: Vural Ozdemir

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This is a thoughtful article which I enjoyed reading and would certainly recommend to both experts in the field and to my students and the general public alike. It is a fresh exciting article among hundreds I read and review as a scientist. Well-done.

Minor essential revisions:

1. Big Data has many types and big is not always better. This means that dealing with big data is also accepting larger error thresholds or tolerating a larger degree of error than what one would do. The trade off is the systems perspective the big data and multi-omics data brings about. This needs to be mentioned in the conclusions or as a top line executive forward look.

2. There are several recent instruments developed for translational research specifically for multi-omics and Big Data. These instruments built on social science innovations can bring about larger masses of innovators to translate big data to knowledge products and innovation. Consider amending and discussing the recent articles below that offer new ways of translating Big data to innovation, as well as multi-omics data:


3. Availability of metadata is also a crucial driver worthy of discussion:


4. Little is mentioned on how disenfranchised populations in developing world can benefit from personalized medicine such as HIV-related personalized medicine diagnostics? As the article deals with personalized medicine in developing world
extensively, it is worth discussing this issue that has been sadly neglected in the past:


5. A final comment on the ethics frames over personalized medicine. There is a move towards nested systems to regulate both science and the ethics itself as the latter currently remains unregulated. Please refer to the important article of Raymond De Vries to discuss the importance of the nascent field of ethics-of-ethics so all knowledge workers, be they scientists or ethicists, are subject to transparency and accountability, and so none is above the fray for accountability, whether they are scientists or ethicists or social scientists and policymakers. Such nested systems have been conceptualized by the 2009 Economics Nobel Laureate Elinor Ostrom. Please refer and discuss the related works below:


**Level of interest:** An exceptional article

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests