This paper was aiming at the challenges of EHR and genomic data sharing. The authors discussed the advantages and disadvantages of the blockchain technology implementation in genomics and healthcare applications. Furthermore, they proposed the general blockchain structure based on Ethereum, which is a more suitable technology for the genomic data sharing platforms.

Editorial Criteria

- **BASIC REPORTING**

  The title, abstract, introduction, methods, results and discussion are appropriate for the content of the text. Furthermore, the article is well constructed, the experiments are well conducted, and analysis is well performed. The figures are relevant, high quality, well labelled and described.

- **EXPERIMENTAL DESIGN**

  This is a review paper, so no experimental design. However, the discussion is original and the research is within the scope of the journal. Research question is well defined, relevant and meaningful. The overview and their proposal for a more suitable technology is highly technical, ethical and logistical.

- **VALIDITY OF THE FINDINGS**

  The introduction is comprehensive. The findings are meaningful. The conclusions are well stated and relevant to the research questions.

Overall, I think this review paper is novel and will be of interest to others in the community of omics data and EHR data sharing. This review paper does an excellent job outlining the urgent need to better manage the genomics data and further discusses the pros and cons of blockchain technology utilization in the field. In general, the work is convincing. And the comments I raised last time have been addressed properly in the current version. I would accept the revised version of the manuscript.

Major Comments:

1. I'm wondering if it is worth mentioning that one of the key disadvantages of blockchain technology is the inefficiency of storing and querying data. And the computational efficiency is also low compared to traditional centralized databases.

   Response: Thank you for raising this important point. Blockchain can be very beneficial, but it does not mean that it is going to be a complete revolution. There are still too many pitfalls and improper parts of the blockchain, especially in healthcare management. We completely agree with the intent of this comment. Hence, this important point is mentioned in the revised manuscript. Please see Conclusion chapter on Page 21 of the revised manuscript. The disadvantages of each project are also discussed in the revised manuscript.

   Feedback: Thanks for adding it to the revised version. The conclusion session and discussion session looks good to me.

2. I'm wondering if blockchain-based technologies support cloud computing and commonly used software services, tools & apps?

   Response: Thank you for highlighting the relationship between cloud computing and blockchain. It is very common to use them to support each other. Blockchain is a distributed and decentralized system that works on a P2P network. Also, the smart contract mechanism is using its own virtual machine. When we build a proper design, it is possible to use software tools and/or apps on a blockchain platform. We can consider a blockchain application as a distributed app (Dapp). Recently, interoperability of different blockchain networks is also possible. Thus, it can be mentioned that blockchain-based platforms can support cloud computing or software tools distributedly. Please see the following answer as well.

   Feedback: Thanks for the clarification. It totally makes sense to me.

3. The words “data commons”, “data ecosystems”, “data cloud architecture” are really popular in the field of genomics data sharing. And they sound similar and are really confusing to researchers. Do you think it is worth adding those terms and explain a little bit?

   Response: Thank you for highlighting this important point. We believe that discussing these terms makes the manuscript more strengthen. We mentioned them in the Introduction section of the revised manuscript, please see Page 2. We also changed the organization in the revised manuscript and mention the evolution of blockchain technology in the healthcare management field. We discuss data commons and data ecosystems with blockchain timeline too. We believe that blockchain has a potential for contributing to data ecosystems.

   Feedback: I strongly agree with you on this. And thanks for supplementing the introduction section. The new structure of the revised manuscript looks clear and straightforward to me.

Minor Comments:

1. The Figure 5 is hollow, and it is a little bit hard for the readers to differentiate the colors. I would recommend making it solid, with colors filled in.

   Response: Authors fully agree with the intent of this comment and all figures are edited in the revised manuscript. Also, we would like to mention that some of the figures are totally changed in the revised manuscript, to address some other comments, e.g., removing stopped projects from the paper.

   Feedback: Thanks for the updates for the figures. I also did see the comments raised by other reviewers in terms of the figures. The new set of figures look much more clear and informative. I don’t have any concern for the figures. Thanks!