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An Integrated Patient Genomic Information Management and Analysis System for Healthcare Professionals (ORAL)

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Abstract: In recent years, personal genomic data can be quickly generated in an affordable price. Abundant research results on genetic diseases have also been published in the past two decade. Therefore, it is desired to utilize updated genetic disease research results into personal genomic data analysis and apply them into genomics-based personalized healthcare. However, this is a challenging task for current healthcare professionals because the desired clinically relevant information is hidden in highly complex genomics data sets and in various types of databases, which were typically created for genomics researchers in the past. In this project, an integrated patient genomic information analysis and management system is created for healthcare professionals, especially physicians, so that they can conveniently access the desired patient genetic information and current research results related to the genetic makeup, and utilize the information in personalized healthcare practice. The accuracy of the data integrated in the system and analysis results from the system were evaluated and a usability study was conducted to determine the usability of the system by physicians. These evaluations indicated that the results obtained in this system were the same as the ones obtained from a manual but more tedious approach, and physicians could easily finish all the designed tasks and obtain desired data using the system.