**ABSTRACT**

Within the literature, we have witnessed in the healthcare sector, the growing demand for and adoption of software development in the cloud environment to cope with and fulfill current and future demands in healthcare services. In this paper, we propose a flexible, secure, cost effective, and privacy preserved cloud-based framework for the healthcare environment. We propose a secure and efficient framework for the government EHR system, in which fine-grained access control can be afforded based on multi-authority cipher text attribute-based encryption (CP-ABE), together with a hierarchical structure, to enforce access control policies. The proposed framework will allow decision makers in the Kingdom of Saudi Arabia to develop the healthcare sector and to benefit from the existing e-government cloud computing platform ―Yasser,‖ which is responsible for delivering shared services through a highly efficient, reliable, and safe environment. This framework aims to provide health services and facilities from the government to citizens (G2C). Furthermore, multifactor applicant authentication has been identified and proofed in cooperation with two trusted authorities. Security analysis and comparisons with the related frameworks have been conducted.