



# Ensuring FHIR Compliance and Security in Salesforce for Healthcare Systems

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## ABSTRACT

It has been a highly challenging factor for the healthcare industry due to increasing concerns about data breaches. In this regard, the implementation of robust FHIR (Fast Healthcare Interoperability Resources) in the salesforce to improve healthcare systems has been a highly important factor that particularly helps in exploring related configurations of security systems. Even alignment of FHIR can prove to be an effective data architecture for Salesforce.

Therefore, integration of a robust FHIR system can allow for enhancement of the integrity of sensitive data and improve operational efficiency ultimately leading to achieving a cohesive digital infrastructure in the streamlined operation within the healthcare industry as it allows for strengthening security.

## ARTICLE HISTORY

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## KEYWORDS

FHIR Standards, Computational Pipeline, CRM System

## Introduction

The healthcare industry has increasingly adopted FHIR standards in the Salesforce framework for centralizing patient data for the purpose of improving operational efficiency. Many issues are associated with fragmented data and data in security that ultimately lead to developing vulnerabilities in data security. Considering all these aspects this current study has emphasized the importance of alignment of FHIR standards or framework in Salesforce environments with a view to improving the quality of healthcare facilities. Even considering the complexities associated with managing such evolving aspects, this current study has also emphasized proposed solutions regarding the adaptation of configuration in association with the Salesforce environment to improve the data management system for promoting data security.

## Background

With increasing demand for health care Services, it has been highly important to provide seamless operation therefore it has been an integral part of adopting FHIR standards in health care systems. It has been projected to have a compound annual growth rate of 11.33% during the financial year 2024 to 2029. It is expected that the market volume of the healthcare industry in the UAE will amount to US dollar 2.21 billion by the financial year 2024 [1]. Implementation of the FHIR can play a crucial role in managing efficient information for promoting highly effective patient care management through developing consistent data formats.

In many cases, It is seen that the healthcare industry encounters issues due to the duplicative structure of a data format that

develops the scope of data security breaches. Therefore, it has been highly important to adopt FHIR standards for tightening regulations and maintaining data privacy as that would help in improving accuracy in data management and fostering an environment of data security.

## Problem Statement

Particularly the rationale behind the integration of the salesforce environment into health care systems revolved around improving operational efficiency and developing robust patient outcomes. In general, vulnerabilities in data security and lack of data management structures have resulted from issues related to FHIR noncompliance [2]. Even many issues associated with the increasing cost of data storage, duplication of data, risk factors associated with unauthorized access to data, and complications in sharing valuable information mainly arise with noncompliant setups. Therefore, in alignment with FHIR standards in healthcare organizations, it would be highly important to address concerns related to data management systems so that sensitive data of patients can be protected.

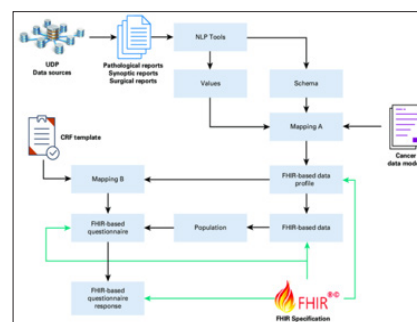


Figure 1: FHIR-Based Computational Pipeline.

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### Proposed Solution

- Configuration of Salesforce**

For the purpose of enhancing security measures, it can be highly crucial to address duplication of data and identify compliances associated with the FHIR standards so that it can be configured with the Salesforce environment [3].

- Modifying Data Architecture**

Data protection has been an integral part of streamlining operations within the healthcare industry therefore data integrity should be improved in the process of refining configurations of data security so that specific requirements within the healthcare industry can be maintained [4].

- Managing Standardised Format of Data Security**

In order to ensure consistency in data security some specific requirements need to be fulfilled field such as optimization in data storage and development of standardized data formats towards fostering an environment of data security.

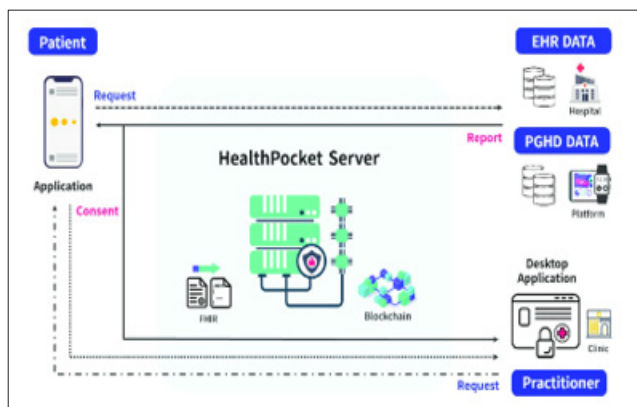


Figure 2: Health Pocket Platform with FHIR Standards and Blockchain Technology [5].

### Methodology

- Implementation of a Phased Approach**

In the evolving healthcare environment, it is highly important to leverage comprehensive assessment for the configuration of data security with the existing salesforce environment [6].

- Integrating FHIR-Based Data Models**

In this stage, it would be crucial to identify data structures of non-compliance so that duplication in data input can be tackled and best practices can also be implemented by enforcing security. In this regard, subsequent testing can also be prioritized for evaluating accuracy in data management [7].

- Data Assessment**

In this process collecting qualitative feedback from stakeholders in association with the healthcare system can ensure robust solutions by understanding regulatory aspects. In addition, technical assessments can also play a crucial role in improving data compliance and managing data security.

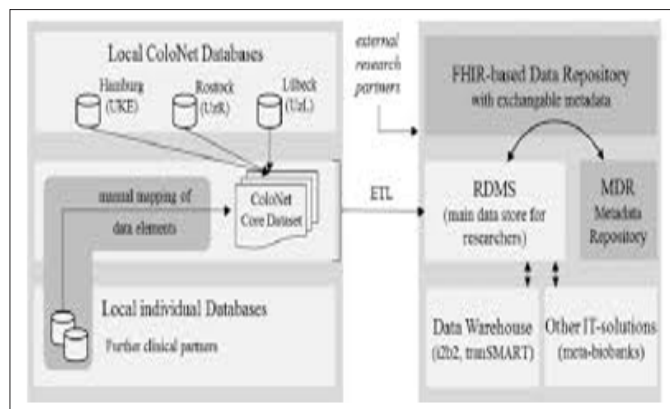


Figure 3: Improved Data Sharing and Reuse Based on HL7 FHIR.

### Results and Discussion

It has been identified that alignment with FHIR standards in the Salesforce environment can play a pivotal role in reducing duplication in data and it allows for developing an effective robust data security system within the healthcare industry. Even security configurations by optimizing the data protection framework also work on mitigating vulnerabilities in data management that ultimately lead to ensuring reliability in the management system. Therefore, overall discussion has also stressed potential limitations associated with the salesforce CRM system in producing better health care outcomes. Hence strong compliance practices need to be adopted by healthcare organizations for integrating FHIR standards in the Salesforce environment.

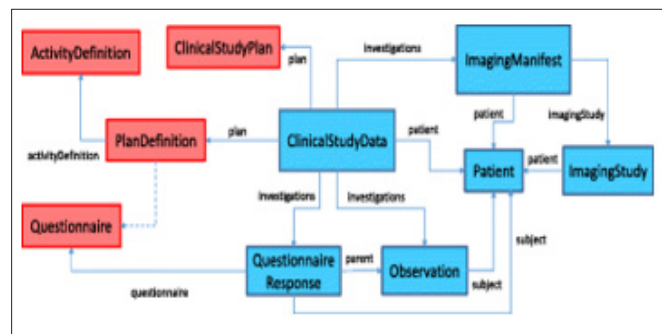


Figure 4: The Clinical Research Data Model in FHIR [8].

### Conclusion

To conclude, understanding complexities associated with data management systems within the healthcare industry it is important to address vulnerabilities related to streamlined data systems. This study has critically demonstrated how the implementation of the FHIR standards in the Salesforce environment help to improve efficiency in healthcare services maintain challenging factors associated with data insecurity and avoid duplication in data. Therefore, it would be a vital aspect to manage FHIR standards in healthcare practices to ensure data privacy and improve healthcare outcomes.

## References

- [1] Statista. Outpatient Care - United Arab Emirates. 2023; Available at: <https://www.statista.com/outlook/hmo/hospitals/outpatient-care/united-arab-emirates#:~:text=Outpatient%20Care%20%2D%20United%20Arab%20Emirates&text=It%20is%20projected%20to%20exhibit,US%24744.80bn%20in%202024>.
- [2] Nan J, Xu LQ. Designing interoperable health care services based on fast healthcare interoperability resources: Literature review. *JMIR Medical Informatics*. 2023; 11: e44842.
- [3] Seixas-Lopes FA, Lopes C, Marques M, Agostinho C, Jardim-Goncalves R. Musculoskeletal Disorder (MSD) Health Data Collection, Personalized Management and Exchange Using Fast Healthcare Interoperability Resources (FHIR). *Sensors*. 2023; 24: 5175.
- [4] Hornback A, Shi W, Giuste FO, Zhu Y, Carpenter AM, et al. Development of a generalizable multi-site and multi-modality clinical data cloud infrastructure for pediatric patient care. In Proceedings of the 13th ACM International Conference on Bioinformatics, Computational Biology and Health Informatics. 2022; pp: 1-10.
- [5] Bae YS, Park Y, Lee SM, Seo HH, Lee H, et al. Development of blockchain-based health information exchange platform using hl7 fhir standards: usability test. *IEEE Access*. 2022; 10: 79264-79271.
- [6] Lemus-Zúñiga LG, Félix JM, Fides-Valero A, Benlloch-Dualde JV, Martinez-Millana A. A proof-of-concept iot system for remote healthcare based on interoperability standards. *Sensors*. 2022; 22: 1646.
- [7] Naz A, Ali M, Cheema SM, Pires IM. Cloud-Based Framework for Data Exchange to Enhance Global Healthcare. *Procedia Computer Science*. 2023; 241: 570-575.
- [8] Leroux H, Metke-Jimenez A, Lawley MJ. Towards achieving semantic interoperability of clinical study data with FHIR. *Journal of biomedical semantics*. 2017; 8: 1-14.