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Blockchain Applications in the Biomedical Domain: A Scoping Review

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Title:	Blockchain Applications in the Biomedical Domain: A Scoping Review
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Abstract:	Blockchain is a distributed, immutable ledger technology introduced as the enabling mechanism to support cryptocurrencies. Blockchain solutions are currently being proposed to address diverse problems in different domains. This paper presents a scoping review of the scientific literature to map the current research area of blockchain applications in the biomedical domain. The goal is to identify biomedical problems treated with blockchain technology, the level of maturity of respective approaches, types of biomedical data considered, blockchain features and functionalities exploited and blockchain technology frameworks used. The study follows the PRISMA-ScR methodology. Literature search was conducted on August 2018 and the systematic selection process identified 47 research articles for detailed study. Our findings show that the field is still in its infancy, with the majority of studies in the conceptual or architectural design phase; only one study reports real world demonstration and evaluation. Research is greatly focused on integration, integrity and access control of health records and related patient data. However, other diverse and interesting applications are emerging, addressing medical research, clinical trials, medicines supply chain, and medical insurance.