

## DISADVANTAGE:

### Immutability:

Blockchains are immutable where any information appended to the ledger cannot be altered or removed. While this can be beneficial for data integrity, it presents a major challenge, there is no way to correct inaccuracies on a blockchain because they are immutable.

For example: the operators conducting the physical tasks in the drug supply chain can still make errors when recording information to the ledger.

### Data Privacy:

Although immutability is considered one of the main advantages of blockchains, it can be in conflict with emerging laws that address information storage issues.

For example, the General Data Protection Regulation (GDPR) in Europe requires that organizations accurately control where and how data is stored because the person it is collected from have the right to modify or delete it any time, and if actions are not taken according to their requests, the organization can be liable to heavy fines

### Interoperability:

Blockchain networks other than Ethereum work in their own unique way which leads to interoperability issues where the different blockchains are not able to communicate with each other

## ADVANTAGES:

### Increased safety:

Traceability can help to identify and remove counterfeit and substandard medications from the supply chain. This can help to protect patients from serious health risks.

### Improved security:

Traceability can help to track and trace medications throughout the supply chain, which can help to deter theft and diversion.

### Increased compliance:

Traceability can help pharmaceutical companies to comply with regulations. This can help to protect their businesses from fines and penalties.



Enhanced efficiency:

Traceability can help to improve the efficiency of the pharmaceutical supply chain. This can lead to lower costs and shorter lead times. These technologies can go hand-in-hand with automated inventory management systems to bolster efficiency at busy health systems



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