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## An information supply chain system view for managing rare infectious diseases

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The research view rare infectious disease reporting system as an information supply chain system, just as any product supply chain system, with different layers in reporting with a constant interaction between the stakeholders involved (hospitals, laboratories and public health system). It is layer-to-layer relationships between various stakeholders involved and we examine the factors influencing the delay of information exchange between these layers. We used simulation based modeling to replicate interaction between the different layers in the information supply chain system and investigated the lead times during the transfer of information between these entities. The trace-driven simulation study was used to replicate the model in real life setting in a decentralized reporting system and subsequently compared it with centralized actively monitored reporting system. The research emphazises the need for full participation among different stakeholders for collaborative advantage and long term economic benefits. We found that rare infectious disease reporting through ELR avoids the delay at the hospital level and at local health jurisdictions (LHJs). Our study is extremely important as increase in lead time affects responsiveness from public health system and can result in economic losses from spreading of diseases.

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