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Poster

## Enhancing Multi-Site Technical Assistance with Cloud Computing: Bridging the Digital Divide for Underserved Communities with an Affordable, Scalable, ICT Solution

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### Abstract

**Background:** The rapid expansion of cloud computing in recent years allows health practitioners to design informatics solutions that overcome historically prohibitive factors such as start-up cost, limited IT infrastructure, digital illiteracy and geographic dispersion. Cloud-based Information and Communication Technologies (ICT) are uniquely positioned to enhance activities critical to population health programs such as monitoring, targeted technical assistance and evaluations. This research describes the creative integration of freely available data management software and cloud technology into an ICT solution adaptable to a variety of program areas at various scales.

**Methods:** Electronic Data Capture (EDC) is an information management model emphasizing the use of thin clients and centralized data management, allowing for distributed data collections and minimal infrastructure requirements for end users. Using Virtual Private Cloud (VPC) architecture supplied by a large, trusted public cloud provider, engineers transformed a freely accessible, public domain data management software into a cloud-based EDC system. The system was then piloted as a reporting mechanism for a national, multi-site, population health program serving over 30 rural and urban American Indian/American Native communities across the United States.

**Outcomes:** The deployment of this reporting system from a cloud platform was done with exceptionally low startup cost and lead time due to the elimination of hardware, software and training procurement. Data are stored behind several layers of authentication on a VPC and managed by one administrator, streamlining both data security and data management. A response rate increase of nearly 20% was observed only 30 days after introducing this reporting option to program coordinators.

**Conclusions:** This workflow allows rapid deployment of an expansive, multi-regional data infrastructure to underserved communities that are geographically dispersed. A centralized EDC solution is of particular utility to multi-site population health or clinical programs with distributed data collection. The components used for this approach are widely available, require minimal technical personnel and zero hardware investment.

## **Keywords**

**population health; cloud; technical assistance; ict; informatics**

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## **PowerPoint presentation**

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