



USING BIG DATA TO IMPROVE HEALTH SERVICE DELIVERY IN PAPUA NEW GUINEA

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RESEARCH QUESTION

How can Big Data be used to improve health service delivery in Papua New Guinea?

- What data is captured or used in providing health service in Papua New Guinea?
- What types of health data are used in delivering health service in Papua New Guinea?
- What is the significance of using Big Data to collect, analyze, process and interpret health data in delivering health service in Papua New Guinea?

Key words

- Big data
- Health data
- Big data analytics
- Health data analytics

RESEARCH DESIGN

Methodology

- Systematic literature review
- Meta-synthesis used

Scope

- Health data in Papua New Guinea
- Big data technology

Literature Review

- 20 articles initially
- 8 relevant articles

DATA CAPTURED OR USED IN PROVIDING HEALTH SERVICE IN PAPUA NEW GUINEA

Health records

- Patient data about medical history, treatment plans, diagnoses, allergies

Medical claims and billing activities

- Data regarding utilization of health service, prescribing patterns between patients of different payers, and population coverage

Medical equipment and items data

- Data about equipment, medicine and other medical items

Medical examination or test results

- Data from examinations, lab tests or x ray scans

Diseases

- Data about diseases or illnesses and controls

Other health data may come from other activities like medical research, awareness or information sharing to general public

TYPES OF HEALTH DATA IN DELIVERING HEALTH SERVICE IN PAPUA NEW GUINEA

Structured

- Data that can be stored and displayed in a consistent manner
- Data that includes numerical values like height, blood type, patient demographic data, appointment data, blood pressure, etc.

Unstructured

- Data that must be analyzed and interpreted manually
- Data that include x-ray scans, ultrasound images, printed or images of structured data

PROBLEMS WITH CURRENT HEALTH DATA IN PAPUA NEW GUINEA

Current systems cannot capture and process unstructured health data

Vital health care information not provided to or access by all

Time consuming when interpreting data manually

Current systems are not centralized that leads to no sharing of timely data in three main levels of health authority (district, provincial and national)

Basic health service not delivered well and on time to general public

SIGNIFICANCE OF BIG DATA TO COLLECT, ANALYZE, PROCESS AND INTERPRET HEALTH DATA

- Big data refers to large volumes of high velocity, complex, and variable data that require advanced techniques and technologies to enable the capture, storage, distribution, management, and analysis of the information.
- Big data in health care involves collecting large collections of data from various healthcare foundations followed by storing, managing, analyzing, visualizing, and delivering information effective decision making

SIGNIFICANCE OF BIG DATA TO COLLECT, ANALYZE, PROCESS AND INTERPRET HEALTH DATA

Broadly contrasting bases of data or mash-ups of data resultant from sources

Correctness and accuracy of information



Denotes the large quantity of data produced

Broadly contrasting bases of data or mash-ups of data resultant from sources

Way of extracting valuable information from huge sets of data

Massive frequency during the when data is created, supplied and managed

RESEARCH GAP AND FUTURE RESEARCH

- No current literature on the use of big data in health service delivery in Papua New Guinea
- Use mixed methods of research to investigate and collect data to substantiate findings

CONCLUSION

- Health data captured in delivering health services to the general public in Papua New Guinea can be structured or unstructured.
- Unstructured health data takes enormous amount of time to analyze and interpret for decision making
- Big data can be used to capture, analyze, process and interpret unstructured health data
- Big data can be used to improve health service delivery in

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