BIG DATA IN MEDICINE AND HEALTH STORAGE ANALYSIS

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ABSTRACT

This article medicine in the field digital transformation Big Data analysis in the process and other modern technologies (artificial intelligence , blockchain , telemedicine) replace learns . Home attention this of technologies health storage systems efficiency increase , expenses optimization and state from funds reasonable to use add to the extent The article is focused on In Uzbekistan current being done digitization initiatives and international experiments analysis Research results this The data shows that based on decision acceptance to do , processes automation and resources clear management through good quality medical service to show provide with together financial savings done increase possible .

KEY WORDS: *Big Data , artificial intelligence intelligence , telemedicine , blockchain , health to save financing , expenses optimization , digital medicine , Uzbekistan .*

INTRODUCTION

Modern in the world of technology intense at a pace development health storage field fundamentally is changing . The population medical to services was demand increasing progress , state budgets limitedness under the circumstances from funds effective and reasonable use whole world , this including Uzbekistan health storage system for current to the problem has become . In our country disease type looking at treatment financing such as new approaches current is being done , but this the process digital technologies with harmony through further effective and economical strategies done increase possible .

This of the article purpose – medicine in the field of “Big Data ” analysis , artificial intelligence (SI), blockchain , telemedicine and other digital technologies current to grow through health storage system expenses how optimization , state from funds effective use and medical service quality increase opportunities analysis to do .

LITERATURE REVIEW

Health to save digitization and from data use international on a scale wide learned is the subject . Many researchers electronic medical current records (ETQ) to grow not only administrative processes simplify , maybe diagnostic repetition prevent to take through expenses to save take to come For example , a research this shows that " electronic medical notes using patients in treatment applicable diagnostic inspections and procedures from repetition escape possible . This is unnecessary . expenses prevent takes ” [1, p. 287]. This idea ETQ not only administrative , maybe straight away medical economic the effect shows .

Telemedicine economic efficiency about studies , especially chronic diseases in management his/her importance record For example , " diabetes" and hypertension such as chronic diseases treatment for from telemedicine use to the hospital to lay level reduce and of patients the results improve , as a result general expenses to save take came ” [3, p. 287]. This evidence the population remotely treatment through stationary download reduce economic in terms of justified confirms .

Artificial intelligence (SI) and preventive medicine in the field affairs his/her prospects shows . SI “ chronic diseases danger under was people early determination through preventive medical improve support as well opportunity It is expensive . medical treatments and later of patients in hospitals stationary treatment prevent takes ” [4, p. 287]. This approach health storage system reactive (reaction) from the pointer (from proactive (previous) wrestler) model to transfer service does .

Blockchain technology transparency and to safety added contribution separately is emphasized . From sources in one It is said that “ Blockchain technology health storage with related every one transactions , such as settlements , payments safe observation through fraud activity opportunities noticeable at the level reduces ” [5, p.

287]. This financial funds protection in doing of technology role about evidence be takes .

Automation and supply chain Robotic Process Automation (RPA) is also known as “ administrative additional expenses reduces and financial of operations accuracy provides ” [7, p. 287]. Just as so , modern supply chain systems " term" past medicines and items gathered stay the risk reduces ” [8, p. 287], which and noticeable financial of the disappearances prevent takes .

DISCUSSION

1. Information Basically Decision Making : Big Data and Analytical Platforms

Big Data analysis main power various from sources (ETQ, laboratory (results , genomics , wearables devices) many voluminous and diverse information combining , unique concepts to take It is possible . Cloudy calculation platforms this information storage and again work for infrastructure expenses noticeable at the level reduces , because " health " storage systems information use opportunity improve and management with related expenses reduces ” [6, p. 287]. This is especially true for resources limited developing countries for important .

In practice , Big Data analysis following in directions expenses optimization possible :

a) **From services ineffective use clarification :** Statistical analysis through known treatment methods average from the effectiveness to much lower results take coming situations determination and them correction .

b) **Resources demand prophecy to do :** Seasonal flu , pandemic or local epidemiological trends based on hospital beds , medical equipment and employees demand in advance planning .

c) **Prevention and early Diagnosis :** Large population groups information analysis chronic diseases (heart and blood) risk of stroke , diabetes

high was groups determination and to them intended intervention programs working exit

2. Processes Optimization and Automation

Medicine in institutions many administrative and assistant processes employees time and resources big requires a lot of resources . Like Robotic Process Automation (RPA) technologies calculations , insurance payments seeing exit , planning such as recurring tasks to do It is possible . It is not only mistakes reduces , but " human factor on the surface to the body coming mistakes to reduce help gives ” [7, p. 287]. Employees this time patients with directly to work work in progress it is possible , this and service quality and patient satisfaction increases .

3. Service Show Model Change : Telemedicine

Telemedicine not only convenience , maybe economy tool also be considered as It is necessary . It is infrastructure . expenses reduces , because " patients' to the hospital visit to order for expendable funds economy to do , system for and medical to the institution , to the infrastructure was need reduces ” [2, p. 287]. Uzbekistan such as big to the area own , population points disproportionate distributed in countries telemedicine edge in the regions resident to the population good quality advice to take opportunity giving , that with together central to hospitals was unnecessary pressure This is especially true when checking and requiring observation chronic diseases for effective .

4. Transparency and Reliability Strengthening : Blockchain

from Public Funds in use transparency and report to give requirements grass important . Blockchain technology this regarding new opportunities opens . Medicines supply in the chain , it is every one of the drug working from the release patient in hand arrived until it goes was movement following going , fake of products enter to come prevent to receive possible . Just like yes , grants and state orders according to financial streams transparent and indestructible as observation , " fraud" activity opportunities noticeable at the level reduces ” [5, p. 287]. This is not only funds it will save , maybe public to the system trust increases .

5. Uzbekistan Context : Opportunities and Problems

in Uzbekistan " Health " to save digitalization ” program , the ETQ system current to do , teleconsultation services develop such as affairs take However , Big Data analysis complete from the potential use for following to factors attention to give necessary :

- ✓ **Your information quality and Standardization : From** various institutions taken of information to be combined and analysis to be done for they one kind standard based on introduction need .
- ✓ *Privacy and security :* * Medical of information confidentiality provider strict legal and technician mechanisms working exit necessary .
- ✓ **Staff preparation :** Information data scientists , bioinformaticians and digital technologies understandable doctors preparation
- ✓ **Infrastructure and investments :** Cloudy platforms and strong calculation to resources to enter to provide .

RESULTS

Research results this shows that digital technologies health storage system all in syllables efficiency increase and expenses optimization for strong The tools are :

1. **Electronic medical notes** administrative the load reduce and unnecessary diagnostics prevent to take through straight away and indirectly expenses saving opportunity gives .
2. **Telemedicine** infrastructure expenses reduce , the same at the time population coverage to expand service does .
3. **Artificial intellect and Big Data analysis** for prevention directed , prophetic to medicine to move , resources clear to distribute and clinical decisions to support opportunity gives .
4. **Blockchain** financial of streams transparency and medicines chain reliability provides .

5. **Procedures automation (RPA)** administrative expenses reduces and employees the effect increases .

Uzbekistan for main result from that consists of this technologies consistent and strategic in a way current to exist , to exist financing reforms (e.g. , disease type looking at pay) with when combined , from the funds more efficient use and to the population good quality medical service show level noticeable to increase take is coming .

CONCLUSION

Technological progress today health storage system again build for beautiful opportunities "Big data " analysis , artificial intelligence intelligence , telemedicine , blockchain and automation such as digital tools not only clinical the results improve , maybe of the system economic stability of providing They are the key to the budget . funds more efficient management , fraud and of extravagance prevent to get , employees efficiency increase and medical services every how on the spot to patients delivery to give opportunity gives .

Uzbekistan for important task – this technologies not only separately projects as , maybe only digital ecosystem integral part as development . This for strict political will , belonging legal and normal-legal base , infrastructure construction and qualified personnel preparation programs important importance has . Only good planned and consistent done increased digital transformation through health storage system financial in terms of stable , patient for comfortable and high to efficiency has was to the system convert possible . Future health save is information based on built , proactive and personalized It is medicine .

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