

AI IN INDIAN HEALTHCARE STARTUPS: INTEGRATION & IMPACT

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Master of Business Administration (MBA)
in
Hospital and Health Management

By

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Under the Supervision and Guidance of

Dr Sanjay Gupta

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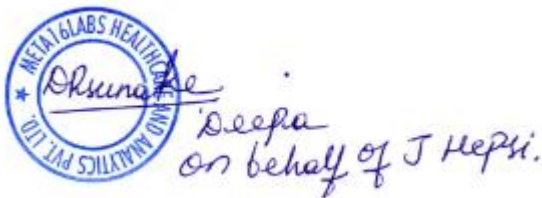
TO WHOMSOEVER IT MAY CONCERN

29th June 2024

This is to certify that **Mr. Harsh Bansal** has successfully completed his internship as a **Business Analyst Department** of “Platform” from **1st April 2024 to 29th June 2024**. We want to express his hard work, dedication, and contributions during his tenure with us. During his internship, his efforts have contributed positively to our team and organizations, and we are grateful for his contributions.

We wish you all the best in his future endeavours and hope the experience gained during his time with us will contribute to his professional development.

For Meta16 Labs Healthcare & Pvt Ltd

A circular blue ink stamp with the text "META16 LABS HEALTHCARE AND ANALYTICS PVT. LTD." around the perimeter. Overlaid on the stamp is a handwritten signature in blue ink that appears to be "Deepa". To the right of the stamp, the text "on behalf of J Hepsu." is handwritten in blue ink.

J Hepsu
Senior Manager
Human Resources.

DECLARATION BY STUDENT

I hereby declare that this dissertation titled 'AI In Indian Healthcare Startups: Integration and Impact' is the bonafide record of my original researchwork. I declare that it has not been submitted to any other university or institution for the award of any degree or diploma. Information derived from the published or unpublished workof others has been duly acknowledged in the text.



Signature

Name of Student: Harsh Bansal

Date: 04/07/2024

CERTIFICATE

This is to certify that dissertation titled “AI in Indian Healthcare Startups: Integration & Impact” is a record of the research work undertaken by Harsh Bansal in partial fulfillment of the requirements for the award of the degree of MBA (Hospital and Health Management) from the IIHMR University, Jaipur under my guidance and supervision and his approach to the research study has been sincere, scientific, and analytical.



Dr. Sanjay Gupta
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ABSTRACT

Title: AI IN INDIAN HEALTHCARE STARTUPS: INTEGRATION & IMPACT

Author Name: Harsh Bansal

Advisor Name: Dr. Sanjay Gupta

Keywords: AI (Artificial Intelligence), Indian Healthcare, Startups

Background: Synthetic intelligence (AI) is crucial for enhancing scientific effects and administrative efficiency in healthcare. Previous studies have shown that AI can enhance healthcare offerings by promoting cognitive development, augmenting human abilities, and offering correct diagnoses. AI technology lets us collect, manner, and supply clean results to medical professionals. Its statistical mining and pattern recognition capabilities permit prediction, diagnosis, and treatment. Early packages of AI in medication aimed to copy human brain functions and create rule-based total structures to assist clinical reasoning. future AI improvement's goal is to imitate the cognitive capabilities of docs. However, contemporary AI technology is overcoming the restrictions of physicians and the complexity of the healthcare system. AI-driven answers for cognitive engagement beautify diagnostics, enhance prognostic treatment, and increase healthcare productivity via reworking analytical facts.

Objective:

- Identify key challenges hindering AI adoption and potential opportunities through qualitative research methods.
- Evaluate the potential impact of AI on accessibility, affordability, and efficiency of healthcare delivery in India using a mixed-methods approach.

Methodology: The report is based on descriptive secondary research data. To offer a complete knowledge of AI applications in the Indian healthcare industry, a literature search was done through published research papers, journals, and reports to integrate the material accessible online.

Results/Findings:

Early Detection: AI can process sizable amounts of clinical facts, inclusive of scientific pics, genetic facts, and patient histories. This capability allows the identity of subtle ailment signs at advanced levels, making an allowance for faster interventions and doubtlessly better

consequences. As an example, AI's capacity to hit upon pre-symptomatic cancers or tuberculosis drastically improves the possibilities of successful treatment.

Beyond Individuals: AI's abilities extend beyond individual patients to analyzing records across entire populations. This evaluation offers insights into sickness patterns, risk elements, and ability outbreaks. Using analyzing population facts, AI can expect emerging epidemics and help in resource allocation to save you big fitness troubles.

Conclusions: To perform the complete capability of modern AI in healthcare, it's far critical to address those intrinsic issues via strong supervisory foundations that ensure moral use, dossier solitude, and safety. Investments in basic and trained people education are owned via expedited the easy unification of trendy AI electronics. Additionally, crafty AI resolutions that can be contextually suitable, especially for far-off and property-weak backgrounds, are crucial.

Despite those challenges, healthcare manufacturing in India is testifying an increasing interest in AI applications, situated between two together family and international events. For AI to simply revamp healthcare, a balanced method is wanted—one that helps novelty whilst making sure of obligation and transparency. An inclusive processes framework that addresses freedom, solitude, and righteous issues may be partially responsible for knowing this stability.

ACKNOWLEDGEMENT

Learning is a never-ending process. Our quest to learn increasingly by grabbing every possible opportunity that comes our way proves to be the reason behind our success one day.

I would like to thank the management for providing me with this learning opportunity which has enhanced my knowledge related to Evaluating the Integration and Impact of Artificial Intelligence in Indian Healthcare Startups. Working on this report has made it possible for me to explore the topic in all possible dimensions to extract the best out of all the data available and turn this opportunity into a beautiful learning experience.

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Above all, I thank the Almighty for giving me patience and strength to overcome the difficulties, which crossed my way in accomplishing this endeavor.

Title: AI in Indian Healthcare Startups: Integration & Impact

Research Objectives

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CHAPTER 1; Introduction

Around 50,000 experts graduate, in India annually which falls short of meeting the healthcare needs by 2030. India will require 2.3 million experts to achieve the recommended physician-to-patient ratio of 1:1000. The efforts of twelve healthcare entrepreneurs could play a role in advancing Indian healthcare and alleviating the strain on the state's healthcare system. Artificial intelligence (AI) serves as the foundation for fields such as computing, software development, and data transmission. AI technologies include learning, machine learning, voice recognition, robotics, and biometric identification. Industries like healthcare, manufacturing, and business utilize AI extensively along with the transportation sector. Artificial intelligence (AI) refers to machine-exhibited intelligence that is increasingly shaping industries and society at large. In healthcare specifically, AI aims to replicate human cognitive processes. The abundance of healthcare data and rapid advancements in research technology are steering a shift towards leveraging AI in healthcare has the potential to enhance productivity and efficiency in care delivery by enabling healthcare organizations to offer improved care to many patients. It can also improve the experience for healthcare providers by allowing them patient care time while reducing burnout through faster completion of tasks typically performed by humans at a lower cost. Overall, AI simplifies processes for patients, physicians, and hospital administrators.

1.1 All about AI?

Synthetic intelligence (AI) is a term used to describe how machines are skilled to suppose and behave like humans emulating human intelligence a humanoid is any machine displaying tendencies related to the human thoughts which include getting to know and problem-solving ais maximum top notch function is its capability to reason and perform actions with the best chance of reaching a specific goal machine studying a subset of ai refers back to the idea that pc systems can study from and adapt to new statistics without human intervention this self-sustaining mastering is facilitated by way of deep gaining knowledge of algorithms which process huge quantities of unstructured information which includes textual content photographs and video the muse of synthetic intelligence is the idea that human intelligence may be defined in a manner that allows a machine to duplicate it acting responsibilities starting from the most effective to the most complex ai ambitions to simulate cognitive processes researchers and builders are making speedy advancements in replicating talents

together with studying reasoning and belief to the extent that those may be distinctly characterized some believe that soon inventors will create structures able to gaining knowledge of and reasoning about any subject faster than humans however others are skeptical arguing that everyone cognitive obligations are inherently tied to price judgments primarily based on human experience

The sector of software engineering referred to as guy-made awareness AI frequently referred to as machine insight is concerned with making and overseeing apparatuses that could determine a way to genuinely choose and create actions for people various advances are included beneath the umbrella of AI it fills in as a sweeping period for any piece of equipment or programming that works with AI computer vision everyday language figuring out NLU and everyday language dealing with NLP.

-Source: <https://onlinecs.baylor.edu/news/will-ai-replace-SWEs>

Artificial intelligence refers to the intelligence exhibited by machines, in preference to the natural intelligence displayed with the aid of animals and human beings. AI research includes analyzing intelligent seller structures that perceive their surroundings and take moves to beautify their probabilities of achieving their desires. In the past, robots that replicated and established human-like cognitive abilities, which included gaining knowledge of and hassle-fixing, had been defined as having "synthetic intelligence." but, main AI researchers have shifted away from this view, as a substitute defining AI in terms of rationality and performing logically, without limiting the expression of intelligence. AI studies are divided into several subfields, every focusing on specific targets and techniques. not unusual areas of AI studies include developing reasoning, expertise in illustration, making plans, gaining knowledge of natural language processing, perception, and the ability to control and circulate gadgets. One of the long-term goals of the sector is popular intelligence-the capability to clear up any problem. To tackle these challenges, AI researchers have adapted and combined an extensive variety of hassle-solving strategies, together with search algorithms, mathematical optimization, formal common sense, artificial neural networks, and processes from statistics, possibility, and economics. AI draws on various academic disciplines, which include PC science, psychology, linguistics, and philosophy.

1.2 AI in healthcare

Synthetic intelligence (AI) is crucial for enhancing scientific effects and administrative efficiency in healthcare. Previous studies have shown that AI can enhance healthcare offerings by promoting cognitive development, augmenting human abilities, and offering correct diagnoses. AI technology lets us collect, manner, and supply clean results to medical professionals. Its statistical mining and pattern recognition capabilities permit prediction, diagnosis, and treatment. Early packages of AI in medication aimed to copy human brain functions and create rule-based total structures to assist clinical reasoning. future AI improvement's goal is to imitate the cognitive capabilities of docs. However, contemporary AI technology is overcoming the restrictions of physicians and the complexity of the healthcare system. AI-driven answers for cognitive engagement beautify diagnostics, enhance prognostic treatment, and increase healthcare productivity via reworking analytical facts. AI could boost the shift from traditional medical institution settings to affected person-targeted care environments which include outpatient surgical treatment centers, retail clinics, and domestic care. Moreover, wearable generation and domestic care have the potential to reduce standard healthcare charges by 20 to 32 percent. AI-enabled technologies have made home infusion and monitoring care fashions feasible, with a predicted boom of over 18 percent within the next five years. Advances in predictive analytics now permit clinicians to remotely monitor patients using domestic care or related devices, making it easier to evaluate fitness styles. stepped forward preventive, diagnostic, and treatment methods have consequently benefited scientific experts. However, AI's inherent strength poses tremendous dangers to trendy supply chains, firms, and stakeholders. Research suggests that as AI develops, so will the risks and demanding situations it provides for humanity. Those risks consist of the safety of main AI structures, the safety and privacy of consumer facts, and societal risks. As instance, AI's collection of affected person facts raises severe concerns approximately privacy, transparency, and records breaches. The use of such superior technologies exposes people to various risks all through information series and processing. Therefore, there's developing concern over the ethical and felony troubles surrounding AI generation. In current years, there has been tremendous concern about AI within India's various communities, companies, and government bodies. The Clinical Council of India has set up statistics security pointers to alter "non-public facts." As a result, the point of interest has shifted to the development and use of socially accountable AI technology.

1.3 Uses of AI in Healthcare:

Within the healthcare region, artificial intelligence (AI) is utilized in various contexts. To realize the exceptional sorts of AI that are being advanced, the application of AI in healthcare can be classified into the subsequent standard areas:

1.3.1 Descriptive Analysis

Presently, descriptive AI is the maximum commonly used type in healthcare, imparting the most immediate blessings. It analyzes past activities and uses these records to gain deeper insights, including identifying tendencies and sudden changes that might otherwise be ignored by way of medical specialists. for example, this method may be used to come across styles in diagnosing pores skin situations, and fractures. Additionally, it's been proven that these technologies are more effective than human beings at diagnosing minor wrist fractures.

1.3.2 Predictive Analysis:

Predictive AI makes use of descriptive facts to make destiny predictions, supplying forecast insights and moves for clinical experts. AI can revolutionize the healthcare era and health center management. Examples of methods to boost efficiency and reduce prices consist of:

1. Placing affected person priorities primarily based on criticality to lessen morbidity and boost scientific productiveness.
2. This process, referred to as triage, entails prioritizing affected person care primarily based on the severity of their circumstance and may utilize predictive AI.
3. Accelerating ailment prognosis and decentralizing diagnostic tests.
4. Predicting heart assaults through ECG-like analysis of coronary heart rhythms.
5. Improving operational performance, consisting of reducing the time required for patient admission and discharge. Enhancing and adapting fitness management statistics structures to permit real-time reporting.
6. Making use of analytics to healthcare information to beautify administrative strategies.

There is a modern-day shortage of number-one care docs in diverse regions of India, constrained by the supply of physicians and the capability of healthcare applications. AI can be useful in this case. In understaffed rural regions, Artemus is ambitious to apply AI for

initial screenings. For instance, Wysa can monitor and expect mental health issues. This technology also can attain excessive levels of engagement by employing people presenting personalized interest to each patient. Nonverbal cues, like judgment, cannot be expressed, and the conventional hierarchical shape among clinicians and sufferers is absent. therefore, virtual dealers are much more likely to be honest with their patients, and sufferers are much more likely to adhere to their care and remedy plans.

1.3.3. Prescriptive analysis:

Prescriptive AI advances the intention of predictive AI with the aid of no longer most effective figuring out styles that people may not expect however additionally making remedy tips primarily based on diagnostic nuances. Prescriptive AI is the most exciting and disruptive use case due to its choice-making functionality. It can act as a cognitive assistant that mimics the brain, lowering the load on human cognitive talents. The healthcare industry is one of the most in-depth sectors. AI-powered dealers running along medical doctors, nurses, and researchers can look for, retrieve, present, and use modern-day scientific information. This notably improves clinician efficiency and ability, in addition to the usual care.

1.4 State of AI in the Indian Healthcare Industry:

By 2035, synthetic intelligence (AI) is projected to make contributions of \$957 billion to India's financial system, accounting for a 15% boom within the country's current gross fee brought (GVA). This giant financial effect is pushed by way of AI technology that beautifies productiveness and innovation across numerous sectors.

Investment in India's healthcare zone, specifically in AI, is likewise at the upward thrust. between July and September 2017, as a minimum sixteen Indian healthcare IT agencies secured investment from a global pool of \$5 billion raised by using virtual health startups. This fashion underscores the developing hobby and investment in AI-driven healthcare answers.

State governments are playing a good-sized function in assisting AI tasks. For instance, the Karnataka authorities projected an expenditure of INR 2,000 crore with the aid of 2020 to foster AI improvement. This support is a part of a broader method related to guidelines just

like the Karnataka begin-up policy and the Karnataka facts era task Capital Fund, aimed toward nurturing AI startups and innovations.

Key stakeholders, which include the Federation of Indian Chambers of Commerce & industry (FICCI) and the high Minister's workplace, advocate for AI integration in healthcare to enhance performance, quality, affordability, and accessibility. the focal point is regularly on assistive AI technology, which preserves the best ability for increase in India. The technology's goal is to increase healthcare services to underserved populations, specifically in rural areas with inadequate infrastructure and restrained right of entry to primary care physicians.

Additionally, foreign corporations are more and more checking out and developing new AI solutions in India, leveraging the US's specific demanding situations and opportunities to refine their technology.

1.4.1 DOMAINS OF AI IN HEALTHCARE

India's healthcare area is composed of numerous segments, each using artificial intelligence (AI) in awesome ways. in line with a survey of companies growing AI health answers, healthcare experts using AI, and researchers exploring AI's ability in healthcare, AI is included otherwise throughout those various categories. This diversification highlights the variety of programs and the progressive methods being pursued in the enterprise:

1. Hospital: In India, numerous healthcare centers, along with authorities' clinics including hospital treatment communities and district hospitals, in addition to private establishments like nursing houses and excessive-stop hospitals, are embracing superior technology like AI for improved patient care. for instance, the Manipal organization of Hospitals has partnered with IBM's Watson for Oncology to aid clinicians in diagnosing and treating seven forms of most cancers. This AI device is deployed throughout the clinic network, benefiting over a million cancer patients annually. Through AI analysis of records and proof, affected person reviews are greater, instilling extra self-belief inside the remedy manner while ensuring patient confidentiality and knowledgeable consent. Similarly, Aravind Eye Care Systems collaborates with Google Brain, leveraging their knowledge to develop retinal screening

technology. After contributing to the improvement of Google's retinal screening gadget, Aravind Eye Care structures is now focused on enforcing it in medical practice, in particular for detecting signs and symptoms of diabetes-associated eye damage, following a hit trial. Main non-public healthcare vendors like Fortis Healthcare, Apollo Hospitals, L V Prasad Eye Institute (LVPEI), Narayana Fitness, and Max Healthcare make use of advanced technology along with Microsoft Azure, device-gaining knowledge of, records Analytics, CRM online, and workplace 365 to beautify affected person care and operational performance.

Hospital AI domains and example use cases

Domain	Description	Examples of AI-enabled use cases
Continuity of care	Optimizing point-of-service and referrals to improve patient care	- Referral management - Patient transfers
Network and market insights	Tracking relationship strength among providers	- Provider segmentation - Benchmarking (e.g., quality, cost effectiveness)
Clinical operations	Optimizing clinical workflow and capacity throughout care journey	- Operations optimization (e.g., ED, OR, units)^d - Capacity / bed management - Supply chain optimization
Clinical analytics	Improving patient care journey with data at all points of care delivery	- Clinical decision support - Treatment recommendations - Care pathway design
Quality and safety	Reducing major adverse events with special attention to patient experience and legal compliance	- Condition deterioration - Readmissions - Regulatory compliance
Value-based care	Improving patient outcomes with value-based care models	- Patient stratification and risk scoring - Utilization management
Reimbursement	Automating and optimizing payment flows between providers and payers	- Coding - Denials management
Corporate functions	Managing back-office, administrative functions	- Talent management - Call center enablement
Consumer	Understanding how best to engage consumers using tools	- Segmentation and channel preference - Personalized engagement

Source: <http://www.nber.org/papers/w30857>

2. Pharmaceuticals: Producing, extraction, handling, refinement, and bundling of synthetic mixtures for use as human or creature drugs are among them. As per an evaluation of arrangements utilized, drug organizations in India are utilizing expressive and prescient AI, with prescriptive AI models being fabricated and tried.

The most pervasive use of AI in drugs is drug disclosure, in which AI filters all suitable writing on a specific particle for a medication (for example, designated particle disclosure), which would be hard for even a gathering of people to physically do.

As well as smoothing out the medication disclosure process, AI in pharma gives extra advantages, for example, recognizing both unmistakable and immaterial improved offers, upgraded contender separation, ideal asset allotment for the most extreme piece of the pie gain, income and benefit, capacity to expand development, tweaking deals and advertising informing for more noteworthy client commitment, and computerization of deals and showcasing messages and beat the board. 48 Abbott Healthcare has involved India as a proving ground for creative innovation, including heart and liver applications, as well as dizziness works (which utilize increased and computer-generated reality). Pharmarack is a cloud-based programming-as-a-administration (SaaS) program that utilizes computerized reasoning (AI) to mechanize the drug store network on the board.

3. Diagnostics: In India, a wide range of organizations and studies centers, along both hooked-up giants like Google and IBM, as well as several startups, are dedicated to harnessing artificial intelligence for disease detection and healthcare diagnostics. utilizing each descriptive and predictive AI strategy, those entities are revolutionizing diagnostics in the us.

As an example, Niramai Fitness Analytix employs thermal analysis for early-level breast cancer detection, at the same time as Advenio Tecnosys makes use of chest x-rays and ultrasound photographs to pick out tuberculosis and acute infections. Qure.AI employs deep getting-to-know to diagnose illnesses and suggest personalized remedy plans primarily based on healthcare imaging statistics, at the same time as Orbuculum utilizes AI to forecast sicknesses such as most cancers, diabetes, neurological disorders, and cardiovascular diseases based on genomic statistics. In addressing mental health demanding situations, which remain stigmatized, revolutionary solutions like Wysa and Woebot are making huge strides. Wysa, a chatbot equipped with superior AI competencies, features a mental health and behavioral manual, leveraging telephone sensors to detect and assist people in need. Woebot similarly tracks changes in user mood through the years, identifying styles and offering answers, contributing to progressed mental well-being.

4. Medical equipment and supplies: In India, organizations specializing in the manufacturing of scientific devices and substances, masking areas which include surgical, dental, orthopedic, ophthalmologic, and laboratory devices, look like incorporating each descriptive and predictive AI into their operations, as in line with a survey of applied

techniques. as an instance, Niramai has advanced an excessive-decision thermal sensing tool named after its challenge "innocent hazard evaluation with device Intelligence." This tool scans the chest area comparable to a digital camera and analyzes thermal photographs to stumble on early symptoms of breast cancer with the use of cloud-hosted analytical structures. Ten3T has created a wearable patch for cardiovascular patients, constantly monitoring important symptoms and transmitting facts to the cloud for actual time monitoring by clinicians. In in-depth care units (ICUs), AI is deployed for affected persons essential symptoms tracking, alerting physicians to anomalies, as exemplified via Philips IntelliSpace Consultative Essential Care. Moreover, AI is carried out therapeutically, consisting of inside the Implantable Cardiovascular Defibrillator (ICD), which video displays unit coronary heart rhythms and provides shocks mechanically upon detection of abnormalities.

5. Medical Insurance: In India, the area of healthcare coverage and scientific reimbursement offerings, which cover hospitalization charges within the occasion of illness, seems to be integrating both descriptive and predictive AI techniques, as indicated with the aid of a survey of utilized techniques. Through processing significant amounts of statistics at a faster rate than expected, AI can automate claims management, thereby decreasing processing time and dealing with costs while additionally improving patron level. Detecting suspicious patterns in data can useful resource in identifying fraudulent claims, doubtlessly expediting the agreement of legitimate claims. Insurers can analyze consumers' way of life behaviors and provide personalized offerings by way of leveraging huge records and AI. Furthermore, insurers can make use of huge statistics to detect early-stage ailments and decrease the chance of remedy-associated headaches. However, insurers in India are nevertheless quite restricted in their operational skills.

For example, Bajaj Allianz standard insurance employs Boing, a chatbot that addresses consumer inquiries regarding vehicle and health insurance, at the same time as ICICI Lombard sells insurance rules through its MyRA chatbot platform. HDFC Life utilizes Spok, an electronic mail bot, which claims to be the first in India to routinely examine, interpret, categorize, prioritize, and reply to purchaser emails.

6. Telemedicine: Telemedicine includes the usage of electronic conversation and software to offer scientific treatments to sufferers remotely, permitting services consisting of observe-up visits, ongoing situation care, medicinal drug management, professional sessions, and other medical offerings through relaxed video and audio connections. This gets rid of time and geographical constraints, allowing the rapid transfer of scientific understanding to far-flung areas. organizations developing telemedicine platforms in India seem like making use of descriptive and predictive AI, as indicated by the aid of a survey of applied strategies.

Telemedicine can cope with healthcare shipping challenges in rural and far-flung areas and perform various features inside the fitness quarter, along with education, schooling, and management. However, it faces infrastructure problems and is predicated on the quality of services supplied through scientific specialists. AI allows standardization of the fine of care with the aid of lowering the human element.

For instance, SigTuple can examine blood slides and generate pathology reviews without the want for a pathologist, supplying this carrier at a fraction of the same old price, particularly beneficial in rural regions.

Microsoft has collaborated with the authorities of Telangana to make use of cloud-primarily based analytics for the Rashtriya Bal Swasthya Karyakram initiative, employing MINE (Microsoft intelligent community for Eyecare), an AI platform to assist in saving blindness in children. In Bengaluru, the Philips Innovation Campus (%) is leveraging the era to make healthcare greater, low-cost, and reachable. They've advanced software programs to diagnose tuberculosis from chest X-rays and a software device for detecting and coping with excessive-risk pregnancies (cellular Obstetrics monitoring). furthermore, percent has partnered with Fortis Escorts Heart Institute in Delhi to introduce Philips IntelliSpace Consultative Essential Care, enabling hospitals to control more than one in-depth care gadget (ICUs) from a single, geographically remoted command center.

CHAPTER 2: Literature Review

“Robotics, AI, and IoT in Medical and Healthcare Applications” The integration of AI in Indian healthcare startups has the potential to revolutionize the industry by automating

and streamlining processes, improving patient care and diagnosis, and increasing access to healthcare services in remote areas. (Dixit et al., 2021)

“Artificial Intelligence and Machine Learning for Healthcare Solutions” The integration of AI in Indian healthcare startups holds immense promise for improving the healthcare landscape in the country. By harnessing the power of AI, healthcare startups in India can overcome challenges such as lack of access to healthcare, shortage of skilled healthcare professionals, and inefficient administrative processes. (Sharma et al., 2021)

“The Future of Medicine: Harnessing the Power of AI for Revolutionizing Healthcare”, The rapid advancements in artificial intelligence (AI) have significantly impacted various sectors across the globe, and the healthcare industry in India is no exception. AI-driven technologies are revolutionizing the way healthcare services are delivered, making them more efficient, accessible, and patient-centric. (Harry, 2023).

“Artificial intelligence: opportunities and implications for the health workforce” The use of intelligent interfaces and predictive modeling in AI-powered healthcare solutions can improve patient engagement and compliance, as well as optimize resource allocation and patient flow management within healthcare organizations. (Hazarika, 2020)

“Artificial Intelligence for Healthcare Insights from India” India's healthcare system is beset by serious problems, such as poor access to care in remote places, a lack of qualified experts, and expensive private treatment. AI has the potential to increase access to high-quality healthcare, particularly in underprivileged areas. Through programs like the national AI approach and virtual fitness infrastructure, the Indian government is advancing AI in healthcare. Innovation is being fostered by greater financing for AI startups and public-private partnerships. (Claire Muñoz Parry and Urvashi Aneja 2020).

“A Comprehensive Review on Smart Health Care: Applications, Paradigms, and Challenges with Case Studies”. Healthcare has transformed thanks to artificial intelligence (AI), which has allowed Indian firms to swiftly and reliably evaluate vast volumes of medical data, resulting in more precise diagnoses and individualized treatment regimens. AI-powered healthcare solutions improve efficiency and cost-effectiveness while offering convenient living environments. AI is also essential to these firms' hiring and performance evaluation processes, improving patient care and overall productivity. (Raooof & Durai, 2022).

“Trends in IoT-based solutions for health care: Moving AI to the edge” The use of AI in healthcare startups in India is gaining momentum and is likely to have a significant impact on the industry. Artificial intelligence in Indian healthcare startups holds immense potential for improving patient care, streamlining processes, and enhancing medical research and diagnosis. By leveraging the power of AI, healthcare startups in India can analyze vast amounts of data to identify patterns, predict diseases, and personalize treatment plans. Furthermore, AI can automate administrative tasks, thereby reducing paperwork and improving efficiency in healthcare delivery (Lee et al., 2019).

“Edge Intelligence for Empowering IoT-Based Healthcare Systems” AI can improve telemedicine and remote patient monitoring, expanding rural residents' access to medical treatment. AI integration in Indian healthcare companies has the potential to completely transform the sector by increasing medical research and diagnosis, optimizing patient care, and streamlining operations. Enhancing patient care and diagnosis, increasing access to healthcare services in rural locations, and automating and streamlining operations are all possible with this integration. (Hayyolalam et al., 2021).

“Application of Artificial Intelligence in Modern Healthcare System” shows that artificial intelligence (AI) has the potential to analyze large amounts of data, spot patterns, and forecast illness, which is why AI is becoming more and more popular among Indian healthcare entrepreneurs. Treatment strategies that are more precise and individualized may result from this. Additionally, AI can automate administrative duties, increasing the effectiveness of healthcare delivery. Additionally, it can help with telemedicine and remote patient monitoring, which will increase rural residents' access to healthcare services. (Datta et al., 2020).

CHAPTER 3: Methodology

Rationale

The integration of AI within Indian healthcare startups is investigated in this study using a qualitative methodology, with possible consequences for the accessibility, affordability, and efficacy of healthcare delivery in India. By collecting and analyzing rich, descriptive data, the qualitative approach enables in-depth investigation of complex phenomena.

Furthermore, case studies of selected businesses are used to provide contextual knowledge and subtle insights into AI software in actual global contexts. The necessary policy files, business enterprise reviews, and instructional publications are also analyzed through file analysis to supplement and validate the results obtained from observations.

Thematic analysis of the qualitative data is used to identify important trends and problems that show up in the records. With this method, the researcher may capture a wide range of reviews and criticisms, providing complete expertise on the modern landscape and destiny capacity of AI in Indian healthcare startups.

Research Question

- How is AI being integrated within Indian healthcare startups, and what are the potential implications for accessibility, affordability, and efficiency of healthcare delivery in India?

Research Objectives

- Identify key challenges hindering AI adoption and potential opportunities through qualitative research methods.
- Evaluate the potential impact of AI on accessibility, affordability, and efficiency of healthcare delivery in India using a mixed-methods approach.

Research Design - Systematic Literature Review

Data Collection Method - To benefit comprehensive know-how of the topic, a literature evaluation has been carried out by analyzing posted studies papers, journals, and reviews to be had online. This involves synthesizing and integrating the applicable data accessible via these digital assets.

The important factors are:

1. A radical literature seek turned into executed.
2. The sources reviewed covered published studies papers, educational journals, and reviews.
3. The goal is to consolidate and combine the fabric and facts available online in this challenge.

4. This literature assessment presents complete know-how and know-how based on the desired criteria.

In essence, existing digital guides throughout research papers, journals, and reports have been systematically reviewed and analyzed to broaden a holistic understanding of the subject under consideration.

1) How do AI and machine learning work?

2) Available AI-based solution in the Indian healthcare start-up industry.

Inclusion criteria - Startups actively utilizing AI technologies in their healthcare solutions.

Exclusion criteria - Startups not actively utilizing AI within their healthcare solutions.

Duration of study: 3 months

CHAPTER 4: Findings/Result

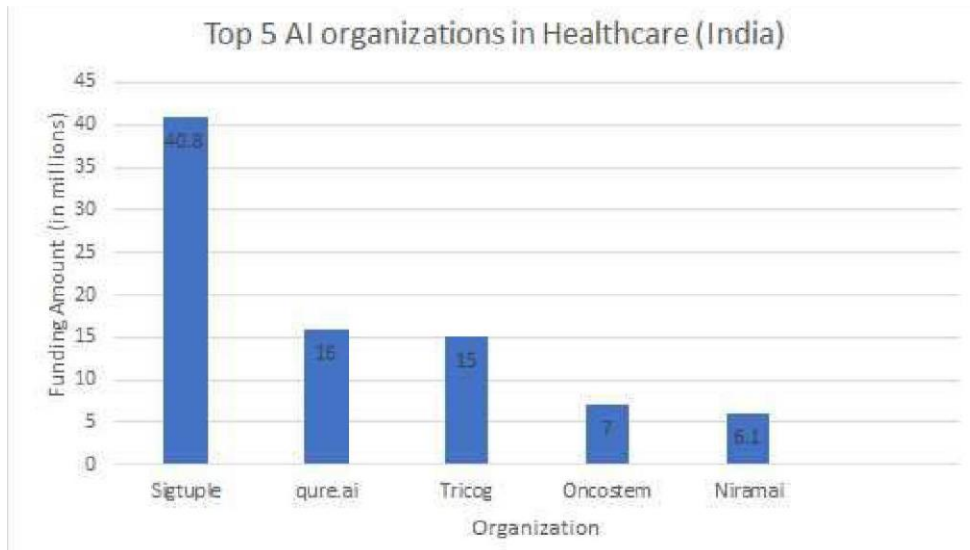


Figure: Top Five Artificial Intelligence (AI) organizations in healthcare in India in terms of funding amount

Source: <https://innohealthmagazine.com/2020/trends/top-artificial-intelligence-organizations-in-healthcare-in-India>

1. The marketplace for synthetic intelligence (AI) programs in the healthcare industry is projected to reach USD 10 billion with the aid of 2022, developing at a compound annual boom fee (CAGR) of 30%, consistent with custom marketplace Insights. AI's capacity to beautify physician productivity is expected to improve the health practitioner-to-patient ratio in India from 4.8:1000 in 2017 to 6.9:1000 using 2023. This growth in AI applications objectives to deal with demanding situations including choppy medical doctor-to-affected person ratios using presenting healthcare to rural populations and instructing healthcare specialists on executing complex scientific tactics.

2. Here is a list of start-up firms implementing AI in healthcare, as reported by Analytics India:

• **Niramai:**

Founded: 2016

Region: Bengaluru

Founders: Geetha Manjunath and Nidhi Mathur

Technology: Combines AI and high-decision thermal sensor gadgets for breast cancer screening and the usage of their proprietary Thermalytix generation.

Features: Low fee, computerized, and transportable, making it accessible in various healthcare settings.

• **Qure.ai:**

Founded: 2016

Region: Mumbai

Founders: Prashant Warier and Pooja Rao

Technology: makes use of deep mastering algorithms to analyze clinical images together with chest X-rays, head CT scans, and chest CT scans.

Features: offers less costly and handy healthcare answers for tuberculosis, public health, and COVID-19.

• **HealthifyMe:**

Founded: 2012

Region: Bengaluru

Founders: Tushar Vashisht, Sachin Shenoy, and Mathew Cherian

Technology: Virtual fitness and wellness platform proposing Ria, an AI-based digital assistant.

Features: Communicates with customers in ten languages, gives nutritional guidelines, tracks calorie consumption with the use of AI, and provides wholesome recipes and advice.

• **Pharm Easy:**

Founded: 2015

Region: Mumbai

Founders: Dharmil Sheth, Mikhil Innani, and Dhaval Shah

Technology: Connects clients with pharmacies through a cell app and the usage of equipment like TensorFlow, Hadoop, HBase, Kafka, Spark, and Hive for data processing and evaluation.

Reach: Partners with over 80,000 pharmacies across more than 1,2 hundred places, serving over 5 million customers.

• **SigTuple Technologies:**

Founded: 2015

Place: Bengaluru

Founders: Tathagoto Rai Dastidar, Apurv Anand, and Rohit Pandey

Technologies: AI-based analysis of medical records from blood assessments, urine and semen microscopy, and retinal photo analysis.

Packages: Develop answers for pathology and ophthalmology, inclusive of automated digital microscopes and AI platforms.

• **OncoStem Diagnostics:**

Founded: 2011

Place: Bengaluru

Founder: Manjiri Bakre and Satyanarayana Thallam

Technology: makes use of device mastering algorithms to assess the threat of most cancers' recurrence over five months and evaluate tumor aggressiveness.

Product: Can Assist, which assigns chance scores based totally on biomarkers and clinical facts using statistical models like aid vector machines.

• **Artelus:**

Founded: 2015

Place: Bengaluru

Founders: Pradeep Walia, Rajarajeshwari K, and Vish Durga

Technology: Deep mastering generation for screening diabetic retinopathy.

Impact: Screened over 81000 sufferers across 502 locations globally, which include India, the US, and Dubai.

• **Tricog:**

Founded: 2014

Place: Bengaluru

Founders: Chirat Bhograj, Zainul Charbiwala, Udayan Dasgupta, and Abhinav Gujjar

Products:

InstaECG: Cloud-related device for short ECG interpretation.

InstaEcho: Assists in diagnosing echocardiograms unexpectedly and correctly.

Impact: Operates in over 12 nations, assisting over 2,600 healthcare experts, impacting over 3 million sufferers, and saving over 90,000 lives. provided the NASSCOM Synthetic Intelligence Game Changer Award in 2018.

Summarize the findings:

Early Detection: AI can process sizable amounts of clinical facts, inclusive of scientific pics, genetic facts, and patient histories. This capability allows the identity of subtle ailment signs at advanced levels, making an allowance for faster interventions and doubtlessly better consequences. As an example, AI's capacity to hit upon pre-symptomatic cancers or tuberculosis drastically improves the possibilities of successful treatment.

Beyond Individuals: AI's abilities extend beyond individual patients to analyzing records across entire populations. This evaluation offers insights into sickness patterns, risk elements, and ability outbreaks. Using analyzing population facts, AI can expect emerging epidemics and help in resource allocation to save you big fitness troubles.

Personalized Care: AI can compare an affected person's unique medical records, genetic profile, and different factors to expand customized treatment plans. This leads to more targeted and effective interventions, decreasing facet outcomes and improving character-affected person consequences. AI-powered digital assistants can manual patients closer to personalized preventative measures and remedy options.

Challenges & Solutions: India's thriving tech enterprise, demanding situations that include facts privacy issues, and infrastructure limitations need to be addressed. Imposing sturdy statistics, privacy guidelines and relaxed records garage infrastructure is critical for the moral and responsible use of AI. Investing in infrastructure upgrades and workforce schooling will guide the seamless integration of AI into healthcare structures.

Overall Impact: Harnessing AI's ability can remodel India's healthcare panorama, making sure a brighter and healthier destiny for tens of millions. AI-powered diagnostics, personalized medication, and green aid allocation will be painted collectively to create a greater on-hand and equitable healthcare gadget for all.

CHAPTER 5: Discussion

5.1 Ethical, legal, and cultural considerations

1. Social acknowledgment: This is frequently a challenge to the acknowledgment of AI since it increases "agree with issues" that patients might have, for example, the requirement for experts to be gifted or the hesitance of the old to tackle innovations. Contingent upon the locale or place in which they're utilized, system errands must be culture-explicit to consider one-of-a-kind social requirements.

The Wysa institution had comparative views, expressing that it turned hard to draw in new clients because getting conventional thoughts of belief, in India became troublesome. For instance, it is trying for agencies to fund-enhance even with horrible press titles pointing out that AI represents a hazard to occupations. moreover, India's absence of a mechanical framework means that AI doesn't yet have the profound getting-to-know abilities critical to managing the user's variety in semantic frameworks. This may be an enormous boundary to AI reception, in essential hospital therapy.

2. Characterizing an acceptable way of behaving: AI conduct in every software place must be precisely defined, preferably influencing layout choices, engineering procedures, and reliability. AI technologies want to perform in a comprehensible way, with utility outcomes aligning with local social norms and perceptions of fairness and equality. privacy standards for medical doctor-patient-AI dating, informed consent (for various techniques and use/get right of entry to private statistics related to fitness and past), and AI-driven clinical research ought to be advanced inside the context of AI use in healthcare.

3. Information Safety/security: Artificial intelligence (AI) can be exploited by way of hackers to collect touchy and private records, along with electronic health facts. Misuse of AI algorithms can result in self-sustaining methods that jeopardize the safety and safety of these sensitive statistics. using gathering and the usage of a huge amount of information in real time, which might not be disclosed to individuals with the right notification and consent, AI systems can compromise statistical integrity.

For instance, a breach of a diagnostic lab database in Mumbai in 2016 resulted in the exposure of scientific records for over 35,000 patients (including HIV reviews). This database

contained patient statistics from throughout India, many of whom might not also be conscious that their facts have been compromised.

This incident highlights the urgent need for stricter privacy and safety policies in India for sensitive non-public information, as well as necessities like breach notification. The Institute of Electrical and Electronics Engineers (IEEE) has advanced an international framework for autonomous and shrewd systems that emphasizes ethics. This framework goals to identify and outline the fundamental concepts that programmers and designers must recollect whilst growing self-sustaining systems.

4. Assent: Long viewed taking into consideration the maximum essential moral requirement for medical treatment and studies, knowledgeable consent is supported by way of hints for professional confidentiality and private privateness. Even patients capable of making selections can be swayed by way of their very own anxieties and comfortably receive the advice of reputedly knowledgeable clinical specialists, whom they will understand as authoritative and do now not wish to offend.

The dangers and problems associated with information safety are regularly not noted while adopting new technology. for instance, Google DeepMind's partnership with the Royal Unfastened Hospital in London faced complaints for now not completely informing customers approximately the character and extent of statistics sharing with Google.

5. Risk: Who's responsible in the event of diagnostic errors, a mechanical failure, or using wrong or inappropriate records — the specialist or the software engineer? In India, the medical professional is chargeable for any medical negligence and may face civil and criminal prison motions. Many believe that the corporation chargeable for developing the software should additionally be regulated, as code and software programs are crucial elements of the era. completely changing scientific experts with AI (i.e., AI making unbiased selections) is presently unrealistic because of issues of belief, duty, and the current skills of AI.

6. Information uprightness: To supply reliable and equitable effects, datasets used to educate AI structures ought to be precise and comprehensive. In India, wherein there are many unstructured datasets and a large population, ensuring fact integrity calls for unique interest. Those datasets may comprise traces of social biases, such as those associated with caste and sexual orientation. Consequently, it's miles vital that the data and assets used to teach AI algorithms come from a sufficiently large and sundry population.

5.2 Challenges to AI in India

1. Advancement: Indeed, even while many variables are urgent at this phase of the exploration, two stick out: the difficulties in acquiring organized, complete, and delegated datasets, as well as the infrastructural, human, and monetary assets expected to foster AI arrangements. Regardless of the way that these issues are far-reaching, the Indian setting aggravates them:

1.1 Access to information

India lacks a centralized database for fitness data and suffers from inconsistent and non-standardized digitization practices. commonly, a brand-new registration quantity or patient file is created for every newly affected person, or even in principal institutions, prescriptions are often handwritten. Frontline healthcare employees in India keep affected person facts in notebooks using their custom notation techniques. consequently, an enormous portion of the populace is probably underrepresented within the data handy to AI initiatives.

Health policy in India is decided by using state governments in preference to the vital authorities, resulting in great disparities between states and ranging levels of readiness to proportion health data. States regularly chorus from sharing populace statistics as it can jeopardize their potential to control. fitness data are also often misreported or exaggerated. Incomplete or unrepresentative records can lead to poor records of satisfaction and coherence, which may bring about flawed algorithms and potential misdiagnoses.

1.2 Blind spots in information assortment

Right now, multiple emergency clinics or research establishments have verifiable information that is applied to AI initiatives. the problem with verifiable data is that it's going to via definition mirror precise cultural prejudicial cycles, as has been abundantly exhibited in before concentrates on AL for instance, there are occurrences of ladies from decreased standings being denied medical attention due to the medical provider's class bias. due to the fact much fewer human beings from these classifications are chosen for such preliminaries, medical preliminary information used to illuminate AI additionally uncovers comparative underrepresentation concerning ladies, minorities, and the antique. As a result, the prescriptions made the usage of those records honestly gain populaces.

In remarkable times, new agencies are making use of open information shops, yet a ton in their paintings are for individuals who are situated in awesome spots. The opportunity of a few other misdiagnoses may additionally want to ascend because of calculations which might be trying to use with Indian populaces. To assist specialists in recognizing and treating seven specific types of malignant growth, Manipal Hospitals in India has collaborated with IBM Watson for Oncology. However diverse clinical professionals have nowadays observed that Watson's coaching populace is now not a precise portrayal of the form of a malignant increase in patients around the world, and for this reason, the framework is vigorously one-sided for US sufferers and scientific requirements.

1.3 Infrastructure and cost

It thoroughly may be exorbitant to prepare, look at, and send AI frameworks. It expects cash to build up datasets, and coping with belongings and extra room is additionally high-priced. maximum clinical services institutions likewise arise quickly on statistics framework anticipated to acquire the data important to put together calculations to their finest degree, including the capacity to test them for predisposition, make critical version improvements, and continuously screen and affirm area effects. The shortfall of advanced bases anticipated to foster AI frameworks is another obstruction. Most of the servers used in the framework for allocated computing are prepared in India. along those traces, a vast quantity of recent companies have likewise enlisted themselves past India. the usage of AI in vital scientific

services in several rustic settings might be especially applicable to the check of constructing AI abilities throughout several dialects. The dearth of capable statistical researchers is another obstruction.

2. Reception

The degree of status and affirmation inside spread-out clinical benefits practices, as well as the gathering's structure and money-related acceptability, are two parts that are projected to have a particularly gigantic impact in India.

2.1 Affordability and Framework

The essential tale encompasses the usage of AI in-hospital treatment in Indian facilities across the hazard of coming to underserved populations, in the USA. regions with unfortunate frameworks or a deficiency of specialists or amongst monetarily hindered bunches in which the populace misses the mark on belongings to get to clinical workplaces.

Albeit a couple of pilot duties are being achieved for United States medical services, a greater vital gander at AI reception uncovers that most of the reception is restricted to big, extraordinary emergency clinics or facilities. As an example, the various critical personal organizations involved in the IBM Watson diploma for disorder locating had been the Manipal and Apollo medical institution gatherings. personal clinical doctors, more modest centers, and peripheral medical clinics are probably no longer going to have the economic assets to encompass these arrangements or to have extra belongings for attempting out and trying out, consequently, this might be related to monetary variables.

2.2 Institutional limits and social acknowledgment

Reception in rustic or underserved regions might be suffering from the degree of presidency aid presently installed in preference to depending upon direct admittance to human beings or marketplace arrangements. India has a country-run clinical services framework, as was at that thing referenced. Every state has one-of-a-kind institutional limits and statistical frameworks. Many states might not have the specialized skills expected to direct well-being guiding principles or to convey collective surroundings that extend get right of entry to and

help development. Furthermore, facts distortion is a regular event in failing to meet expectancies states, and statistics straightforwardness is via and big deterred. this can likewise recommend that failing to meet expectations systems are reluctant to permit outdoor checking and intercession

3. Deployment

At the arrangement level, security, misuse, and responsibility are three significant test sets that should be considered.

3.1 Privacy:

Since healthcare facts are particularly touchy, statistics breaches can affect an individual's proper privacy, dignity, or even professional potentialities. In 2016, a hacking assault on a diagnostic lab database in Mumbai uncovered the medical facts of over 35,000 individuals, consisting of HIV repute exams. As this database contained statistics from throughout India, many people may nonetheless be unaware that their private statistics become compromised. The database has been centered several times recently, with attacks occurring about 3 times a week, yet the laboratory has taken no measures to relax the records.

In March 2018, India's Ministry of Health and Circle of Relatives Welfare launched a draft of the proposed Virtual Information Protection in Healthcare Act (DISHA 2018). This act would allow hospitals and clinics to electronically percentage affected person fitness information. Below DISHA's rights-primarily based framework for medical privacy, sufferers might have proper confidentiality, security, and privacy. The proposed legislation mandates specific earlier authorization from the information proprietor for every example of digital fitness statistics transmission, giving patients the choice to withhold consent for the technology, storage, and series in their records.

3.2 Misuse

The opportunity to make new discrimination channels by way of linking fitness facts with other systems increases huge worries. for instance, banks may use medical health insurance statistics to determine a borrower's eligibility for loans: bad fitness indicators might be seen

as a sign that the borrower may be not able to work, thereby increasing the risk of default. Sharing health statistics with businesses out of doors in the healthcare industry may lead to discrimination within the workplace or affect eligibility for diverse social advantages.

There were worries approximately the security of biometric statistics stored in Digilocker, which the proposed Healthlocker might be modeled after. protection issues are further exacerbated by way of the involvement of 1/3 events and the Indian government's introduction of the eSign digital signature machine, which lets Aadhaar cardholders sign files digitally.

3.3 Accountability

AI structures are presently regarded as choice-guide tools rather than replacements for docs, serving as an initial layer of screening. It's far expected that an "individual in the loop" will evaluate the effects and become aware of any mistakes. it's miles vital to bear in mind the qualifications, motivations, and abilities of the man or woman responsible for reviewing AI machine proposals. Mistakes can occur due to blind obedience or passivity when choice-guide technology is overused. those demanding situations are even more urgent due to the uneven law of the Indian healthcare area. Even respectable non-public institutions have visible numerous reviews of overlook and negligence in recent years. the principal cause of those frequent violations is the shortage of strong, uniform healthcare regulations across the United States.

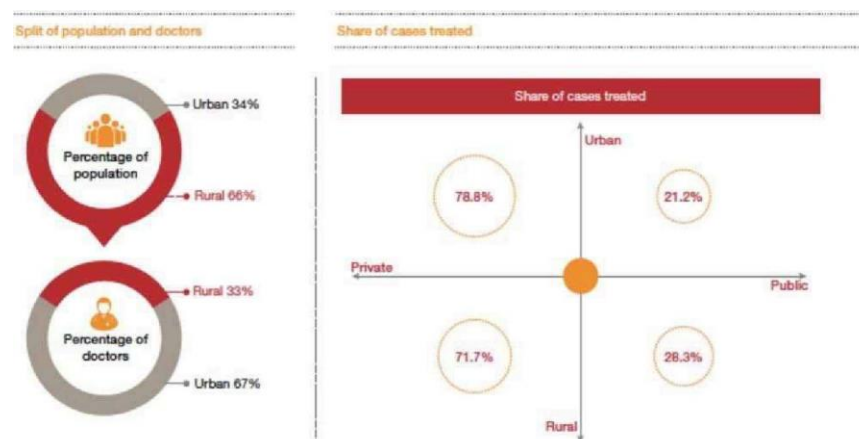


Figure: Accessibility of Healthcare across India.

Source: <https://ai4bharat.org/articles/overview-of-ai-in-indian-healthcare>

CHAPTER 6: Conclusion

The unification of trendy AI in India's healthcare subdivision holds huge promise for reworking affected person care through advanced outcomes, value discounts, and bolstered adeptness. However, this capability is calmed by significant challenges and restraints that need cautious consideration and vital education.

India's healthcare place grapples with accompanying ingrained issues to a degree incompetent investment, feeble rules, missing basis, and socio-enlightening practices that can't be in mind through AI. Moreover, the distinction in the mathematical foundation and the one-of-a-kind talents throughout states and healthcare companies pose meaningful hurdles to the sizeable adoption of modern-day AI. The life is that traditional personal nursing houses, typically in city areas accompanying higher digital basis, are willing to be the fundamental adopters of ultra-modern AI electronics. This synopsis dangers infuriating existent inequities, as AI blessings may also normally collect to the public then appreciating finest care, leaving us off and underserved regions in the back of.

To perform the complete capability of modern AI in healthcare, it's far critical to address those intrinsic issues via strong supervisory foundations that ensure moral use, dossier solitude, and safety. Investments in basic and trained people education are owned via expedited the easy unification of trendy AI electronics. Additionally, crafty AI resolutions that can be contextually suitable, especially for far-off and property-weak backgrounds, are crucial.

Despite those challenges, healthcare manufacturing in India is testifying an increasing interest in AI applications, situated between two together family and international events. For AI to simply revamp healthcare, a balanced method is wanted—one that helps novelty whilst making sure of obligation and transparency. An inclusive processes framework that addresses freedom, solitude, and righteous issues may be partially responsible for knowing this stability.

The non-stop research and pilot initiatives in AI approval offer valuable judgments and underline the significance of the latest proof-positioned strategies. carrying out randomized

management checks and growing a fundamental warehouse modern AI arrangement file can determine healthy evidence to help fuller AI integration in healthcare. These steps will assist in conquering lifelessness and building assurance with partners.

In the end, at the same time as AI technology particularly can't clear up all the demanding situations covering India's healthcare area, it can significantly improve the human quantity and develop miscellaneous aspects of present-day healthcare switch. by handling the identified demanding situations and leveraging AI's capacity tenderly and regarding the welfare of state-of-the-art mankind, India can precede an extra approachable, equitable, and healthcare environment. The next few ages can be detracting in determining whether the promise of modern-day AI in healthcare enhances a truth, in the end leading to higher patient care and a greater bouncy healthcare association.

CHAPTER 7:Recommendations

To maintain patient health information, India must develop human-system interaction components for AI in the healthcare industry, with a particular emphasis on security and safety concerns. Legal, moral, social, and cultural research is necessary to guarantee that the right strategy is applied. The association needs to handle the difficulties in applying AI to the healthcare industry, such as supplying public-private partnership (PPP) shows to manage important healthcare facilities. To better prepare all partners for AI innovation, the preparedness programs ought to be enhanced. In the Indian healthcare industry, boosting AI applications requires addressing immediate, follow-up issues.

They're as follows:

- Human-machine interaction element is to be created in the healthcare segments.
- Security and safety of the AI framework is to be assured, mainly, in the putting of conservation of fitness facts of patients.
- Works of R & D within the subject of AI application in healthcare divisions are to be progressed.
- To determine it out and to fight moral, felony, social, and societal suggestions of AI in the healthcare segments.
- Assessing and measuring AI advances about pointers. aside from, enhancing the utility capabilities of AI in healthcare groups of India, the preparations ought to be there within the arrangement rationalization to preserve the challenges as of now stated.
- In growth to a majority of these, other problems are to be kept in mind while defining the AI-incorporated healthcare coverage for India.
- Scope to be evolved for the aid of all the partners in the discipline of healthcare businesses of India to percentage inputs towards the inclusion of AI utilization within the numerous healthcare segments (encounter trade application).

- Via empowering the open information framework underneath strict administrative confinements in terms of safety, security, and interoperability, scope to be created for getting to facts to move forward and expand the utilization of AI in the healthcare framework.
- Putting in place a devoted legitimate gadget for building up modifications among safety and safety issues of managing with well-being statistics using AI innovation and trouble of development using the AI integration with Indian healthcare framework.
- Planning suitable recommendations and transferring forward gadgets of appropriate certification in the Indian healthcare framework driven with the aid of AI.

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