Report On

The Integration of AI and Human Contribution by Augmedix in Assisting the US HealthCare System

By

Tasfia Zaheen

ID:20104141

An internship report submitted to the BRAC Business School in partial fulfillment of the requirements for the degree of
Bachelor of Business Administration.

BRAC Business School
BRAC University
May 2024

Declaration

It is hereby declared that

1. The internship report submitted is my/our own original work while completing degree at Brac University.

2. The report does not contain material previously published or written by a third party, except where this is appropriately cited through full and accurate referencing.

3. The report does not contain material which has been accepted, or submitted, for any other degree or diploma at a university or other institution.

4. I/We have acknowledged all main sources of help.

Student's Full Name & Signature:

Tasfia Zaheen
ID: 20104141

Supervisor's Full Name & Signature:

Saif Hossain

Assistant Professor & Director (BBA Program), BRAC Business School

BRAC University

Letter of Transmittal

Saif Hossain

Assistant Professor & Director (BBA Program), BRAC Business School

BRAC Business School

BRAC University

KHA 224, Progati Sarani, Merul Badda, Dhaka 1212

Subject: Submission of Internship Report on Augmedix Inc.

Dear Sir,

I trust this letter will find you well. Enclosed is my internship report, reflecting my experience in the Human Resource Department as per the guidance provided. It has been a rewarding opportunity to complete my internship with Augmedix Inc under the guidance of my onsite supervisor who assisted me to complete the report.

I aimed to present the information in a clear and comprehensible manner, drawing on both internal and external sources for data and insights. I hope that you find my report satisfactory and appreciate the effort I invested in its preparation.

Moreover, I hope this report is beneficial to all who read it, aligning with the primary objective of those who read it.

Sincerely yours,

_____

Tasfia Zaheen
20104141
BRAC Business School
BRAC University
Date: 22th April, 2024

Non-Disclosure Agreement

This agreement is made and entered into by and between Augmedix Bangladesh and the undersigned student at BRAC University named Tasfia Zaheen for the responsibility to prevent information disclosure of the firm's classified data and also the protection of the obtained data

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Tasfia Zaheen

20104141

BRAC Business School

BRAC University

Acknowledgment

This report was completed as part of the requirements for a bachelor's degree in BUS490 at BRAC University. I extend my sincere gratitude to all those who played a pivotal role in completion of this report. First and foremost, my deepest gratitude goes to my supervisor, Assistant professor and Director Saif Hossain whose constant support was instrumental in facilitating a smooth and seamless completion of the report.

I am also very grateful to my HR Team lead and Manager whom I had the opportunity to interact with during the course of this internship report. The relationship I've built with them during my internship was immensely valuable.

Special Thanks to Zaved Parvez, the head of the department and Sabrina Ahmed, the Team Lead of MDS team who served as my supervisor of Augmedix Bangladesh. Their assistance in gathering information and providing guidance for the development of my internship report was invaluable.

Executive Summary

Augmedix's innovative use of technology like Artificial Intelligence (AI) alongside with human expertise to enhance the US healthcare system. Augmedix integrates AI technology to streamline medical documentation and record-keeping, easing administrative burden for physicians through its collaboration with Electronic Healthcare Record (EHR) systems. The study evolves the impact of AI-human collaboration on healthcare outcomes, acknowledging both advantages and challenges. Augmedix's creation of Medical Documentation Specialists (MDS) in Bangladesh and synergy between AI and Human skills enhancing documentation efficiency and accuracy. With the aid of the "Scribe Cockpit" software MDS provides real-time documentation support, enabling physicians to focus more on patient care.

The study on the integration of AI and human contribution by Augmedix in the US Healthcare System aims to achieve several goals. Firstly, it seeks to gather insights from frontline workers, scribes to examine the effectiveness of AI-human collaboration. Secondly, the study explores the capacity of AI to delivery accurate healthcare outcomes and its potential to replace human involvement. To add, it identifies the advantages and disadvantages of using AI in patient care. Moreover, the study aims to enhance AI-powered tools like Scribe Cockpit to better support doctors in their daily tasks. Subsequently, it evaluates the effectiveness of Scribe Cockpit in improving in patient care outcomes.

By employing a mixed-methods approach, the study explores the impact of AI-human collaboration on patient outcomes, the potential of AI in healthcare and the enhancement of AI-powered tools for supporting healthcare professionals. The finding reveals while AI has the potential to improve efficiency and accuracy in healthcare documentation, human involvement remains crucial for maintaining empathy and ensuring the completeness of medical records. Participants during survey acknowledged the benefits of AI in enhancing diagnostic accuracy and workflow efficiency but express concerns about the potential loss of human connection in patient care. Ultimately, the study underscores the importance of achieving a balance AI and human input to optimize the effectiveness of the US healthcare system.

Keywords: Artificial Intelligence, Medical Documentation Specialists, Electronic Health Records, Healthcare System,

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List of Acronyms

AST	Augmedix Scribe Training
CD	Country Director
DR	Doctor Ready
DA	Doctor Approved
EHR	Electronic Healthcare Record
HIPAA	Health Insurance Probability and Accountability Act
MDS	Medical Documentation Specialist
NRT	Night Shift Scribe
NLP	Natural Language Processing
RT	Day shift Scribe

Glossary

Artificial Intelligence (AI)	Refers to the stimulation of human intelligence processes by machine, particularly computer systems, to perform tasks that typically requires human intelligence.
Burnout	A state of emotional, physical and human exhaustion caused by excessive and prolonged stress.
Competitor's Analysis	The assessment of other companies operating in the same industry or offering similar product/ services aiming to understand the strength, weaknesses and strategies in order to improve one's own competitive position.
Electronic Healthcare Record (EHR)	A digital version o a patient's paper chart, containing all medical history, diagnoses, medications, treatment plans, immunization dates, allergies, radiology images and laboratory test results.
Health Insurance Probability and Accountability Act (HIPAA)	The Health Insurance Portability and Accountability Act of 1996 (HIPAA) is a federal law that required the creation of national standards to protect sensitive patient health information from being disclosed without the patient's consent or knowledge.
Medical Documentation Specialist (MDS)	Professionals trained to assist healthcare providers with real-time medical documentation tasks offen using AI powered.
Natural Language Processing (NPL)	A brunch of artificial intelligence (AI) which allows computers to comprehend, generate and manipulate human language.
Scribe Cockpit	Software developed by Augmedix, designed to provide a user-friendly interface for medical documentation specialists to navigate electronic

	healthcare record (EHRs) and assist physicians with accurate documentation of clinician encounters.
Strategic Partnership	Collaborative relationships formed between two or more companies to achieve mutual business objectives such as expanding market reach, sharing resources or developing new product/services.
Scribe	A person who transcribes documents in a professional setting.
Service Portfolio	The range of services offered by a company to its clients or customers, which may include core service as well as supplementary offerings aimed at enhancing value and meet diverse needs.
Qualitative Method	Research approaches aims at understanding phenomena in-depth often through interviews and observations or texture analysis.
Quantitative Method	Research techniques focused on gathering numerical data and performing statistical analysis to draw conclusion and make predictions. Example: Surveys, experiments and data analysis.
Revenue Stream	The source of income generated by a company from its business operations which may include sales of products/services, licensing fees, subscription fees.
Remote Medical Documentation	The process of documenting medical records and patient encounters by medical documentation specialists (MDS) working remotely often facilitated by technology platforms like Augmedix services.
Thematic Analysis	A method of analyzing qualitative data that involves identifying patterns, themes and categories within the data to uncover underlying meaning and concepts.

Telemedicine	The provision of healthcare services remotely, typically through telecommunications technology allowing patients to consult with healthcare providers and receive medical care without the need for in-person visits.

Chapter 1: About the Internship

1.1 Student Information

Name: Tasfia Zaheen

ID: 20104141

Programe: Bachelor of Business Administration (BBA)

Double Major: Human Resource Management & Marketing

1.2 Internship Information

1.2.1. Period, Company Name, Department/ Division, Address

Period: 3 months. Starting from 8th January 2024 to 8th of April 2024.

Company Name: Augmedix Bangladesh

Department: Human Resource (Recruitment)

Location: 191 level 15, Rahman's Regnum Centre, 1 Bir Uttam Mir Shawkat Sarak, Dhaka 1208.

1.2.2 Supervisor's Information

Name: Sabrina Ahmed

Position: Talent Acquisition Lead

Email: sabrina@augmedix.com

1.2.3 Job Responsibilities

I, as an HR Recruitment Intern, assisted the HR Recruitment team with different administrative work related to recruiting, employee engagement, employer branding, and maintaining records of applicants. My pivotal duties were:

- Conducting both online and offline screening exams of MDS to understand the recruitment process better and assist them sourcing and screening potential candidates from a range of CVs.
- Collecting screening exam marks and keeping excel sheets updated on a day-to-day basis.
- Conducting phone screening of candidates who are finally selected for interview round and scheduling their interviews with the HR recruitment team
- Continuously, maintaining both email communication and verbal communication with candidates regularly.

- Moreover, ensuring all necessary paperwork is completed for the new hires.
- Assisting with the onboarding process for new hires which included conducting orientations and ensuring any necessary support needed.
- Liaising with universities to create a strong network for campus recruitment and organizing and running job fairs and career events. Furthermore, processing documentation and preparing reports relating to our campus activities.
- Supporting the design and implementation of the overall activation strategy in university campuses through sourcing and attracting candidates via usage of data and various social media.

1.3 Internship Outcomes

1.3.1 Internship Outcomes 1.3.1 Student's Contribution to the Company

I, as an HR Recruitment Intern at Augmedix Bangladesh contributed in the ways mentioned below:

- Invigilating Exams on Premises: I supported the HR recruitment team with their everyday on-premises screening test of candidates alongside taking online assessments. This enabled the HR recruitment team to conduct day to day exams smoothly.
- Youth Engagement: I gave ideas on how Augmedix can engage a younger population with their organization. Here, I provided them with innovative ideas and some were implemented and the company saw the light of success like taking seminars in universities and enlightening them with potential opportunities in Augmedix Bangladesh.
- Introducing Campus Ambassadorship Program: I proposed exclusive concepts for coming up with campus ambassadorship programs, which will help create a bridge between various public and private universities in the foreseeable future.
- Supervisor Assistance: I assisted by onsite superiors with various duties, lessening their burden ensuring the HR team's procedures ran properly.

Hence, my work with the HR recruitment team availed in increasing productivity of the recruitment team ensuring sound and motivating work environment.

1.3.2 Benefits to the student

The advantages of working with HR recruitment team at Augmedix Bangladesh

- Learning Corporate Work Culture: As an HR intern I learned and adapted the work culture of the corporate world working with different corporate personnels which involved Team Leads, Co-Ordinator, Head of HR Department.
- Understanding work of Talent Acquisition team: Working with the recruitment team helped me understand what and why recruiters see while they look for a suitable candidate for various positions.
- Networking: The pool of networking I could do in my academic internship held significant importance to my career as I got to know a lot of individuals who foster extraordinary ability to work in difficult situations and hold great perseverance.
- Enhancing Interpersonal Skills: During my three months of internship period, I dealt with a range of dynamic people starting from my onsite supervisor and co-supervisors, my fellow peers and managers I got to brush up my communication and comprehension skills. These skills play a pivotal role in every employment.

1.3.3 Problems/Difficulties (faced during the internship)

Some challenges that I faced during my internship are:

- Coping up with the US time zone as Augmedix Bangladesh works in real time.
- The nature of my work required a lot of walking as I invigilated exams on premises which were laborious and this was significantly challenging during the month of Ramadan.
- The absence of a digital database leads to a significant amount of work done manually which was time-consuming and tedious.

1.3.4 Recommendations (to the company on future internships)

- Augmedix, Bangladesh can tag interns with specific assignments which will be a great assistance to them and interns can explore their abilities and implement them.
- Encouraging and allowing interns to showcase their abilities and permit them to work which aligns with their perspective.

  By offering these following recommendations, Augmedix Bangladesh can offer more structured, rewarding internships that will provide an insightful experience to fresh graduates in the HR profession.

Chapter 2: About the Organization

2.1 Introduction

Augmedix is a prominent healthcare tech company based in the United States that specializes in medical record-keeping services. The company offers a unique solution which allows doctors to assign administrative work via utilizing an online medical documentation specialist work in real-time. The primary shareholders of Augmedix include Redmile Group, Mckesson Ventures and DCM Ventures. The company expanded its operation in Bangladesh where it employed numerous medical documentation specialists. Augmedix maintains a strong digital presence utilizing platforms like Facebook and LinkedIn for advertising its job and to maintain a smooth communication with potential employees. In Bangladesh, a dedicated time oversees the section of such as recruitment, training and supervision of the medical documentation specialists showing resilience in the avatar of competition and regulatory challenges. Augmedix stands out in the healthcare record-keeping industry with its highly innovative business model which it enables with cutting-edge technology.

2.2 Overview of the Company: Augmedix Inc.

Augmedix Inc is a healthcare technology company established by Ian Shakil in 2012 and Pelu Tran in San Francisco, California. The company is a Silicon Valley company which is enrolled in Nasdaq. The company provides an online record-keeping platform and digital scribe service to simplify and provide better medical documentation service and record keeping for health care provider (Augmedix, 2020).

Augmedix's AI-driven products transform authentic interactions between doctor and patient into organized into comprehensive medical notes allowing physicians to emphasize patient care. The service that Augmedix provides is personalized which involves medical documentation specialists (MDS) to ensure the quality of medical documentation. This high-end service is ensured with the usage of innovative networks to observe records and patient conversation. This allows healthcare practitioners to spend more time with patients and lesser time handling the administrative duties.

The firm collaborates with numerous pivotal hospitals and healthcare organizations in the US and an enormous number of healthcare practitioners who utilize the software around the nation. Moreover, over the time Augmedix has attracted financing from various venture capitalists and

strategic financiers like DCM Ventures, McKesson Ventures and Redmile Group (Augmedix, 2020). Augmedix Inc takes the responsibility of safeguarding the patents electronic healthcare records (EHRs) and other medical data in compliance with the Health Insurance Portability and Accountability Act (HIPAA) since the firm was founded in 2012. In the US, the federal regulation is highly maintained by medical professionals to protect patients' electronic health records and other sensitive medical data. The company has ensured high-touch service which involves medical documentation specialists to make certain of the quality. The product suite of the company involves a voice recognition tool for immediate input of notes into patient records and virtual appointment system in scenarios of remote consultancy. Furthermore, the company has failed patents in relation to electronic health records, health informatics and telehealth illustrating its commitment towards innovative healthcare technology.

2.2.1 Augmedix Bangladesh

The company operates in Bangladesh and operates by the name "Augmedix Bangladesh". Augmedix Bangladesh currently has 1100 employees. The company employs staff of medical documentation specialists that provide documentation services to US doctors. Scribes from Bangladesh transcribe conversation with patients virtually in real time utilizing the company's technological support. This leads to reduction of load from doctors' shoulders

To add, Augmedix Bangladesh is involved in corporate social responsibility initiatives which includes health education and awareness campaigns to improve healthcare outcomes in the country. Consecutively, the company believes in employee growth, retention offering through training and opportunities for professional uplifting.

2.2.2 Organogram

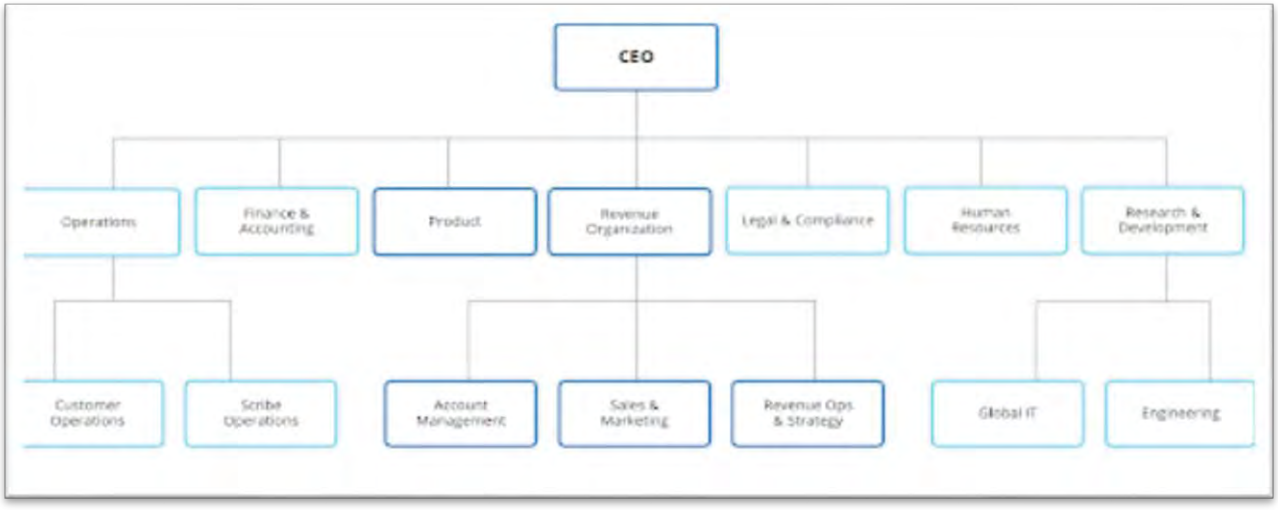

Figure 1: Company Organogram

2.2.3 Mission

"Augmedix's mission is to re-humanize the healthcare business by leveraging technology to foster more significant clinical-patient relationships and address the largest pain point in the US Healthcare System." (Augmedix, 2020)

2.2.4 Vision

"Augmedix aims to expand and lead the platform for digital assistance and medical documentation worldwide providing medical professionals with a comprehensive tool to serve top-tier patient care." (Augmedix, 2020)

2.2.5 Number of employees

- Corporate departments: 107 employees
- Number of MDS: 587 employees

(Data collected from internal source)

2.2.6 Product

The technology that Augmedix uses has both the elements of hardware and software. There is a full-suite of AI- powered products used by Augmedix. The program that the medical documentation specialists use are Natural language Program (NLP) and Artificial Intelligence (AI) technology to transcribe doctor-patient conversation in real-time in an EHR and it is known as Augmedix LIVE. Moreover, Augmedix Notes is another AI tool that is solely used to control the quality of medical notes. Here the medical documentation gets processed that comes through the

EHR. Afterwards, the efficiency is redefined by Augmedix Go, another AI tool which is a clinical control mobile app that uses strong AI-technology and structured data to create a fully automated drafted medical note instantly. Last comes Augmedix Prep where chart preparation is done before the report is delivered to the patient.

2.2.7 Service

Augmedix Platform can be used as an application to healthcare businesses. This requires some high-quality support which includes hardware devices, application systems and expert support from Augmedix. The whole service is designed to ease the process of health records, aiming to reduce physician's administrative work. This allows doctors to offer more time to patient care, which leads to better treatment outcomes. Subsequently, Augmedix offers customized platform and integration solutions, which permits healthcare organizations to customize their exact needs and flawlessly inject it with their current healthcare system.

Figure 2: Service model for documentation

2.3 Management Practices

Augmedix's approach is a combination of participatory and instruction technique. Founder, Ian Shakil oversees the entire business while the other employees beneath him in the hierarchy lead other necessary sections of the business. Many of these employees who are in the decision-making authority were recruited by Shakil himself to meet the company objectives. Augmedix workplace culture is significantly different in the US than that of Bangladesh as in the US it works independently without any intervention of the government.

Augmedix follows a flat hierarchy which allows employees to assist and motivate one another which is also led by the managerial approach and social norms that is also recognized in the US. The company's leadership is very approachable, so whenever any concern is being raised, the culture here allows firm, affirmative communication. Here, employees can thrive and showcase their full potential and venture out their abilities and expand their boundaries as Augmedix has always provided this supportive environment. Many organizations do not provide such flexibility to their employees' face politics and power struggles which leads to job dissatisfaction. However, Augmedix always prioritizes its employees and follows the work ethos that are followed in the US.

2.3.1 Augmedix's Management Operation:

Augmedix's outermost Management System allows physicians to devote lesser hours to documentation and more pivotal times to treating patients. The statistics by Augmedix shows that accepting its offering saves a physician's three hours daily. Subsequently, this allows doctors to interact with patients more. It has been observed that since doctors took the service from Augmedix it allowed their productivity to take flight.

The investigation also revealed various supplementary outcomes:

- Physicians save approximately 40% of their time on documentation as with the assistance from Augmedix allows them to spend less time with the Electronic Health Record (EHR) tasks, averaging eleven minutes which was eighteen minutes previously. This results in a 20% increase in productivity (Augmedix, 2020).
- Furthermore, the standard professional outlook of doctors took a spike of 40%
- Regular disbursements of doctors, hospitals and clinics were seen due to quicker documentation.
- The satisfactory level of patients has increased by 35% on average.(Augmedix, 2020).

2.3.2 Remuneration System:

The Medical Documentation Specialists (MDS) compensation system is very different from that of regular corporate remuneration systems. As the MDS has to go through three months of training of LOM so their compensation structure is different. MDS gets the monthly remuneration of NRT and RT throughout the AST 1 learning period BDT 10,000 is of one and half months. Hence, MDS working in the RT will get BDT 12000 per month while those working in NRT will be compensated BDT 15000 per month. Now, the amounts shown for the next phase of learning, AST

2 which is BDT 18000 for RT Medical Documentation Specialists for a month and a half and BDT 22500 for NRT Medical documentation Specialists for the identical period. The RT MDS receives BDT 17000 monthly at DR stage whereas an NRT MDS receives BDT 20000 monthly.

After the DR stage the MDSs will be confirmed for the DR stage. Here, in this stage, the RT MDSs make between BDT 28,000 to BDT 30,000 monthly and the NRT MDSs make BDT 32,000 to BDT 45,000 monthly. The remuneration for managerial posts is no less than six figures.

2.4 Marketing Practices

2.4.1 Target Audience and Strategy

In Bangladesh Augmedix operates a substantial Medical Documentation Specialists program with a goal to recruit at least 1000 MDS annually. The firm aims to attract a diverse range of applicants to uplift their careers welcoming individuals of all educational backgrounds to participate in the recruitment process which includes students who are done with their academic courses. In the COVID-19 pandemic, in response to the increased demand of healthcare documentation, the US healthcare providers are employing MDS to assist with Electronic Health Record (EHR) documentation. Augmedix addresses this need by appointing the general population from the US. During the COVID-19, the rising concern of unemployment in Bangladesh played a vital role for Augmedix to devise a strategy to engage the masses and meet the demand for MDS. Augmedix, gives chances to fresh graduates who do not have prior experience like many other companies in Bangladesh which allows the firm to meet their recruitment target by encouraging a minimum of 100 applicants to apply regularly.

2.4.2 Marketing Plan

Augmedix is a service-oriented company that supports US doctors by providing Medical Documentation Specialists who document the doctor patient conversation in an EHR. The firm operates in Bangladesh extensively and has operations in some of the states in India and Sri Lanka to achieve its objectives. Augmedix has a global presence of providing MDS round the world via innovative technologies like Google Glass. Here, in Bangladesh, MDS utilizes tools such as Google Glass and virtual platforms like G-Suite to listen to doctor patient interactions and accurately transcribe them into the medical record system.

Promotion: Augmedix primarily focuses its promotion primarily on online platforms to attract a larger pool of qualified candidates for the MDS positions. Since Augmedix is consistently in need of MDS it regularly advertises its job opening on the internet and professional network platforms

such as LinkedIn. Consecutively, the company leverages youth influencers to endorse its operations.

Price: As Augmedix provides service provision to US doctors within the medical sector, pricing is established and maintained in compliance with US regulations. Since Augmedix is an international company, it primarily provides medical Documentation Specialists to healthcare professionals in the US, recognizing the demanding responsibilities of doctors. Hence, Augmedix is dedicated to supporting healthcare systems to benefit patients.

2.4.3 Methods for Advertising and Development

Augmedix constantly seeks MDSs to fill up the positions and advertises the opportunities across various platforms:

- Social media channels like Facebook, Instagram.
- Utilizing youth influencers on platforms such as YouTube.
- Professional networking sites such as LinkedIn and bdjobs.
- Newspapers and digital news platforms such as The Business Standard and The Financial Express.
- Active Participation in various career fairs in different institutes.
- Augmedix's official site.
- University campaigns, workshops and affiliations with renowned university clubs.

These platforms are strategically chosen to reach a quality, large audience especially considering the youth population. Social media in particular is a very effective tool to engage with a diverse demography. The firm's commitment to its strategy is evident as it regularly posts job vacancies on its official sites.

2.4.4 Promotional Efforts

When the promotional activities are compared alongside with competitors Augmedix's promotional activities are distinctive. The idea of Ian Shakil developed an innovative concept that doctors in the US can be very benefited by letting someone work from home and assist with their administrative work. The service that Augmedix provides is unparalleled in all parts of the world (Augmedix, 2020). MDS are always in demand and since the business is associated with the medical profession, the need for substantial brand initiative or advertising. The demand didn't just

stop after the pandemic but was there even after that. The slogan stands for “Rehumanizing Healthcare". Augmedix distinguishes itself from other international firms by its absolute strategy.

2.5 Financial Performance

Some quintessential financial ratios are shaded lights upon. All figures were generated from forecasted statistics and represent how the company will serve.

2.5.1 Profitability Ratios

Financial metrics named profitability ratio can be used to determine a company’s ability to generate its sales, operational expenses and assets or equity held by shareholders up to a specific point.

2.5.1.1 Gross Profit Margin = Gross Profit / Sales

Figure 3: Gross Profit Margin

Augmedix gross margin also referred to as gross profit percentage, serves as a critical financial indicator used to evaluate the company’s financial status. It examines the relationship between the gross profit (revenue minus cost of goods sold) and total sales revenue. The company has demonstrated a positive trend in its gross profit margin since its establishment. Notable projects indicate an upward trajectory, with the gross profit margin expected to increase from $30 in the initial year $40 in the second year and $50 in the third year. A stability is anticipated in the fourth year’s gross profit.

2.5.1.2 Operating Profit Margin = Operating income (EBIT)/Sales

Figure 4: Operating Profit Margin

The operating margin, derived from dividing operating income (revenue minus cost of goods sold minus operating expenses) by revenue serves as a key metrics of assessing a company's financial health. Augmedix, a developing company has witnessed growth over the years. Consequetively, its operating profit margin experienced a decline to -1.25 in the initial years. However, there was a slight enhancement to -0.72 in the second year followed by a minor adjustment in the third year to -0.75 and eventually reaching.

2.5.1.3 Net Profit Margin = Net Income/Sales

Figure 5: Net Profit Margin

The net profit margin, which reflects a company's profitability after deducting all expenses is a critical metric for evaluating financial performance. Augmedix began with a net profit margin

slightly exceeding -1.5% in the initial year. Subsequently, there was an increase in the second year, with the net profit margin with the net profit estimated to approach -1%, followed by a minor decrease of around -0.50% in the third year. In the fourth year, stability is witnessed with an anticipated net profit margin of 6% roughly.

2.5.1.4 Return on Assets (ROA) = Net income/Total assets

Figure 6: Return on Assets (ROA)

Assessing the Return on Assets (ROA) provides insights into a company's overall profitability from its investments. Augmedix experiences a decline in sales by -1.25% in the first year followed by increases of 0.40% and 0.35% in the second.

2.5.1.5 Return on Equity (ROE) = Net income/Common Equity

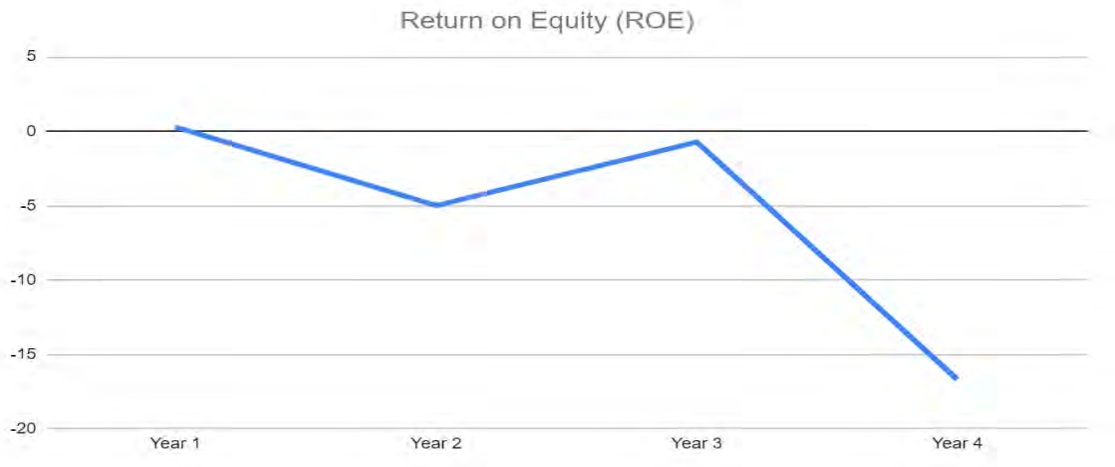

Figure 7: Return on Equity (ROE)

Return on Equity (ROE) is a financial metric indication that correlates between a company's profit and the return for its investors, reflecting the return on its net assets. Augmedix had a ROE of 0%, from the very inception of asset investment in the first year. The ROE was -5%, -1% and -17% for the parallel years.

2.5.2 Stock Market Ratios

2.5.2.1 Earnings per Share (EPS) = Net Income / Total Number of Common Share

Figure 8: Earning Per Share

A major financial ratio, Earning Per Share (EPS), is derived by dividing the net income by the total number of common stockholders. As shown in the data depicted from the graph. The EPS for the initial year is projected to be -$1. In the following year there is a significant sharp decline to -$20 followed by a remarkable rebound to $0 and the same figure is maintained in the final year.

2.5.2.2 Price/Earnings = Price per share/Earnings per share

Figure 9: Price per Earning Ratio

The price earning ratio (P/E ratio or PER) evaluates a company's stock price relative to its per share earnings. Augmedix's stands at 0 in the first two years. Then, it takes a decline to -0.20% representing a 20% decrease. As it reaches the fourth year it reaches -0.14% making a 6% increase from the former year. In the fourth year Augmedix's P/E witnessed a more favorable percentage.

2.6 Operations Management and Information System Practices

Augmedix's core operation is providing Medical Documentation Service to US doctors. Employees who do this are known as MDS. The section below gives a complete description of MDS.

2.6.1 Overview of the Scribe operations of Augmedix Bangladesh

The bulk of Augmedix's Bangladesh workforce is dedicated to the transcription operations. Totaling approximately 800 MDSs who digitally assists US medical professionals, doctors, healthcare organizations and hospitals. These frontline employees play a vital role in delivering the service to its clients. The MDSs documents the doctor-patient conversation in real time and capture relevant data instantaneously while the doctors focus on quality patient care.

Utilizing advanced tools, the Operation Department ensures swift and accurate record-keeping. The MDS go through three months of rigorous training where they learn medical terminologies, anatomies and physiologies to ensure proper medical documentation of patient information. Augmedix collaborates with various healthcare professionals including primary care physicians, specialists and medical technicians.

2.6.2 The Selection Process for the MDS

The entire recruitment process is managed by the Bangladesh team (HR team) in collaboration with the training team. The primary focus is bulk recruitment to satisfy growing customers. The recruitment step is divided into five stages that access the credentials and abilities needed for the position of MDS.

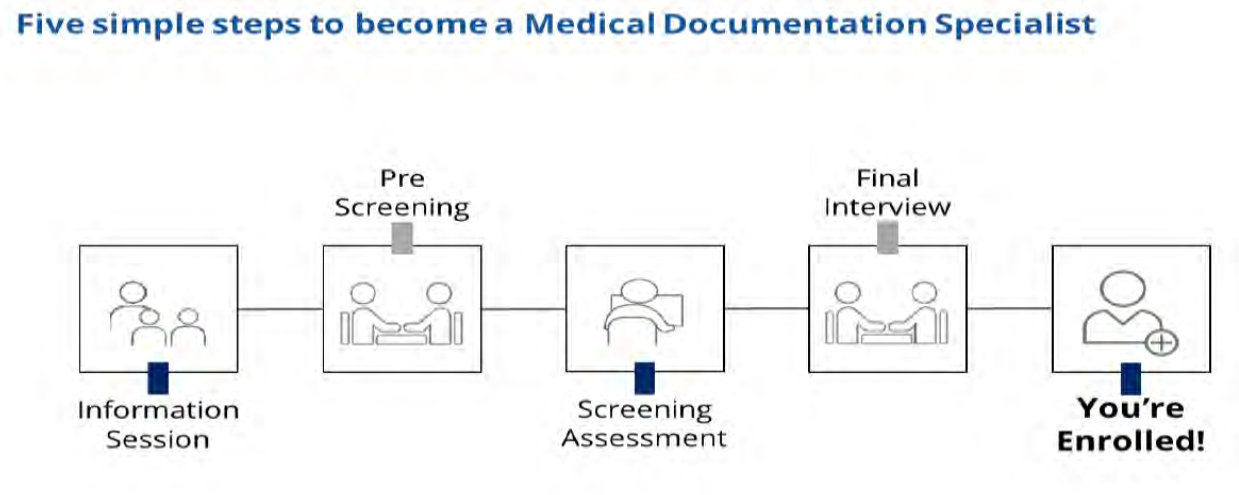

Figure 10: Recruitment phases for the position of the scribe

2.6.3 Program of Training The MDS

Augmedix applies a strategy to recruit a large number of employees by focusing on specifying skills required for the position of an MDS. They developed a structured training program which is divided into five steps each designed to teach the skills and language needed such as medical terminologies, advanced English and typing proficiency. Candidates undergo observation of real doctors under the supervision of experienced medical documentation specialists until they reach the doctor approved stage (DA). Upon reaching this stage, candidates are hired to full time employees.

Figure 11: Training Program Model

2.7 Industry and Competitive Analysis

2.7.1 Porter's Five Forces Model:

Porter's Five Forces Model is a framework used for analyzing the competitive forces in an industry (INSTITUTE FOR STRATEGY & COMPETITIVENESS, 2008). It looks into five factors that determine an industry's competitive level. Below, is an Industry and Competitive Analysis of Augmedix using Porter's Five Forces model.

Figure 12: Five Forces Model

The Threat of New Entrants: The healthcare technology sector faces limited threats from its competitors as it involves huge financial investment, expert requirements and regulatory clearance. Thanks to Augmedix's solid infrastructure, partnership with major healthcare systems and adequate investment in technological innovation.

Bargaining Power of Suppliers: Due to the abundance of suppliers in the healthcare technology sector, supplier's bargaining power is low. However, Augmedix faces a significant risk due to its heavy reliance on a remote workforce of medical documentation specialists based in Bangladesh. Augmedix's operation will face significant negative impact if the availability of these medical documentation specialists get hampered.

Bargaining power of buyers: The buyers in the healthcare technology market wield significant bargaining power due to a wild array of technology products or services available to healthcare providers. Whilst, Augmedix's platform faces significant competition from other medical documentation offerings. It maintains a competitive advantage through its strong relationships with healthcare systems and physician organizations.

The threat of substitute products or services: Since numerous healthcare providers continue to depend on manual documentation processes or outdated technology, the threat of substitute

products or services in the healthcare technology industries is minimal. Augmedix's virtual service is exclusive as a distinctive and innovative solution that greatly benefits healthcare professionals.

The intensity of competitive rivalry: The intensity of competitive rivalry in the healthcare technology industry is relatively high, as numerous companies offer a wide range of technology products and services. Some existing competitors are:

- Suki.AI: A company that offers clinical documentation to doctors via AI-powered.
- Robin Healthcare: Provides real-time scribing and medical assistance to healthcare providers and manage documentation tasks and provide insights into patient care.
- EHR Transpiration: A company that provides medical transcription to healthcare providers.

(Data was collected from internet sources)

Augmedix faces medium level competition in the healthcare industry but it does have a potential increase in competition as demand for remote medical documentation services is increasing. Thanks to its branding, partnership with large healthcare systems and ongoing commitment to product enhancement and innovation.

In summary, when Augmedix encounters moderate competitive pressures, it benefits from low threats of new entrants and substitutes. Additionally, it focuses on continuous improvement and strategic alliances which allows it a competitive edge in the industry.

2.7.2 SWOT Analysis

Augmedix's SWOT analysis to examine its business and competitive landscape. By identifying internal strength and weaknesses alongside external opportunities and threats. Augmedix can be benefited while addressing its weakness and it can mitigate the risks. The SWOT analysis will guide Augmedix to make informed decisions about its strategic directions and marketing positioning among the healthcare industry.

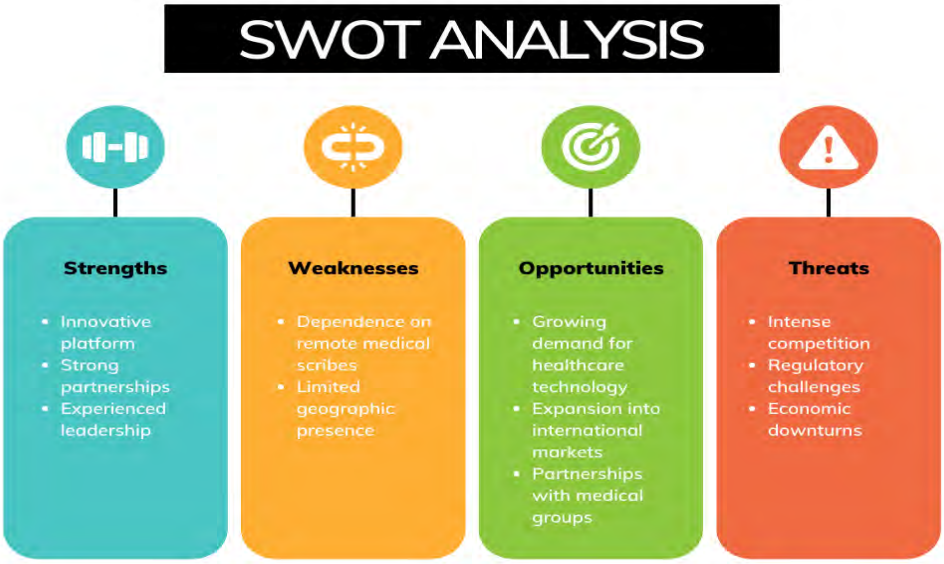

Figure 13: SWOT Analysis

Strengths:

- Cutting-edge platform: Augmedix's virtual scribing platform represents a pioneering approach to medical documentation upgrading the efficiency and precision of medical records.
- Robust Alliance: Augmedix has forged strong partnerships with prominent healthcare systems and various medical organizations, providing a substantial competitive edge.
- Seasoned Management: Augmedix encourages a leadership team with profound experts in healthcare and technology sectors, positioning a company's favorable compensation and expansion.

Weaknesses:

- Reliance on MDS: Augmedix's heavy reliance on its MDS creates risks in the event of disruption to the availability or performance of the scribes.
- Restricted geographical reach: The concentration of Augmedix's business is mainly in the US, Bangladesh and India. This limits its revenue prospect and expansion possibilities in other global markets.

Opportunities:

- Rising need for healthcare technology: Augmedix stands to benefit as the demand of digital healthcare enhances. Allowing more opportunities to grow its revenue and market presence.
- Global market Expansion: Augmedix has all the potential to venture into the new international markets, specifically regions facing storage in healthcare professionals and increasing demand for telemedicine service.
- Enhance Partnership with healthcare systems and medical groups: Augmedix can further strength its partnerships with healthcare systems and medical organizations. Allowing, generating additional revenue streams and fostering growth opportunities.

Threats:

- Fierce Competitors: Augmedix faces numerous competitions in the healthcare technology sector as numerous firms provide comparable offerings.
- Regulatory Hurdles: There is a huge compliance regulatory burden which causes significant expenses for healthcare technology enterprises like Augmedix.
- Economic Downturns: Augmedix's revenue and growth prospects may get affected by economic downturns, which naturally result in decreased healthcare expenditure.

Augmedix posse's notable strengths in the cutting-edge platform and robust partnerships. Nonetheless, there are challenges stemming from its dependency on its (Falcetta et al., 2023) MDS and the competitive landscape of the healthcare sector persists. The firm can maintain its leadership in the industry by capitalizing its strengths and grasping the chance of growth prospects.

2.8 Summary and Conclusions

Augmedix is a US based healthcare technology company which offers remote MDS services to physicians presenting a more efficient alternative to regular medical documentation methods. Its distinctive service of providing medical documentation specialists to doctors working remotely, resulting in contributing to its growth and global expansion efforts.

Its innovative approach to time efficiency, cost and rapid expansion into new markets is its strength. Thou, the company faces competition from other healthcare technology firms and an evolving industry revolution. The success of Augmedix swings on its ability to expand into new

territories, diverging its opportunities and continual innovation of technology. Despite all these challenges, Augmedix remains poised to its vision in the healthcare sector.

2.9 Recommendations

There are few recommendations based on the extensive report on Augmedix Bangladesh:

- Diversify Client Based: It will be better if Augmedix try to expand its clientele beyond the US medical professionals to reduce reliance on a single market. Pursuing opportunities can diversify its presence in the international market. Resulting in a revenue stream and lessen vulnerability to fluctuation in the US healthcare system.
- Invest in Training Programs: It will be better if the firm continues investing in training and development programs for its workforce to ensure service excellence. This may include additional training in medical terminologies, soft skill and technological tools to enhance efficiency and accuracy.
- Forge Strategic Partnerships: Augmedix could venture out and make partnerships with other healthcare and technology firms or service providers to extend its market reach and offer comprehensive solutions to clients.
- Enlarge Service Offering: To provide greater value to the client, it will be better if the company consider expanding its service portfolio beyond medical documentation introducing telemedicine service or other technology-driven solutions to aid healthcare practitioners in the mission to make better outcomes with patients.
- Broaden Brand Visibility: Augmedix can be beneficial if it allocates more resources to marketing and brand promotional activities to make its clients more aware about its brand.

Overall, these suggestions can assist Augmedix in standing on the top tier service provider in the healthcare technology sector while planning its foreseeable future growth in its market.

Chapter 3: The Integration of AI and Human Contribution by Augmedix in Assisting the US Healthcare System

3.1 Introduction

Online marketing, social media campaigns and healthcare conferences and events can help achieve their objectives. The computer-based intelligence has the potential that Artificial Intelligence can bring and expand the boundaries of AI into the cutting-edge medical care issue (Kasula, 2023). AI has the potential to transfigure the way healthcare sectors are serving their patients. A company that is vanguard in this sector is Augmedix, which integrates AI and human contribution to provide medical documentation, medical record and note-taking services to physicians in the United States. According to (Falcetta et al., 2023) a structured review presented that the automation of medical documentation has a direct strong correlation with AI. The Electronic Health Record (EHR) is proven to be beneficial in recording the patient's medical record resulting in better care coordination (Kataria & Ravindra, 2020). Augmedix is also in sync with EHR systems which reduces the stress of doctors to maintain the administrative part of their daily work.

Although, the escalated use of AI in the healthcare system is challenging. According to the paper (Chikhaoui et al., 2022) the necessity of considering ethics and biases while using the AI algorithms is very vital to ensure accurate and proper care is ensured to patients. The inclusion of AI is also very expensive and requires humongous investments, starting from its infrastructure to giving training to employees regarding the usage of AI in the healthcare sector. AI can predict analytics which can assist identify high-risk health issues, provide timely medication preventing diseases from spreading further. Though, all of AI intervention spikes cost to extensive level Regardless, of all the demerits AI in the healthcare sector has many benefits and opens windows of opportunities to improve treating patients with advanced technology. Currently, Augmedix is an AI-powered platform creating effective impact in the healthcare sector in the US (Augmedix, 2020). The study investigates how the integration of AI and human impacts Augmedix platform and explores the potential implications of AI technology in the healthcare industry.

3.2 Background of the Study

Electronic Healthcare Record (EHR) gathers, creates and records patient details electronically. This recording system. Now, with the increased use of EHRs doctors spend their time in

administrative tasks more than patients resulting in burnouts which hampers their service to patients (Bertl et al., 2023) Augmedix Bangladesh has created Medical Documentation Specialists, a platform that allows both human expertise and artificial intelligence (AI) to offer real-time medical documentation assistance in medical recording. This support to US doctors is given from Bangladesh in real-time which is helping the doctors in the US in their care giving to patients and creating immense job opportunities here in Bangladesh.

MDS uses the "Scribe Cockpit" software offering a user-friendly interface to humans for navigation via Electronic Healthcare Record (EHRs). This software allows MDS to dive deep into patients' medical history, medications and lab results delegating accurate documentation of clinician encounters. This permits doctors to devote more of their time to check and interact with patients.

A systematic study by (Puaschunder & Feierabend, n.d.) shows that the automated documentation of professional healthcare documentation needs certain assistance of human support. On the other hand, (Kataria & Ravindra, 2020) weighs up the advantages and disadvantages of EHRs highlighting the necessity of effective documenting systems that don't create a burdensome situation to physicians.

MDS addresses these challenges by combining the combination of AI with expertise to ensure comprehensive medical book-keeping. The use of software has proven to reduce paperwork time, betterment in accuracy and increase time between physician and patient more (Augmedix, 2020).

To summarize, Augmedix Bangladesh's Scribe platform, supported by "The Scribe Cockpit" software has demonstrated to assist the physicians safe time and administrative tasks and prioritize patient care, thereby serving quality treatment to its patients.

3.3 Research Questions

Research Question 1:

Does the contribution of AI and humans impact the US healthcare system?

Research Question 2:

Does AI have the capability to deliver the accurate outcome in healthcare and the potential to replace human efforts? What are the primary benefits of AI and pitfalls of implementing AI for patient treatment within the US healthcare system?

Research Question: 3

How can AI driven solutions such as Scribe Cockpit be improved to better assist healthcare professionals in optimizing patient care outcomes?

3.4 Objective

The primary goal of this research is to examine the influence of participation between AI and humans together in the US healthcare system.

3.4.1 Specific Objectives

- To understand the effectiveness straight from scribes who are working first hand.
- To explore how AI can provide accurate results in healthcare and potentially replace human involvement.
- To identify the key benefits and drawbacks of using AI for patient care in the US healthcare system.
- To understand how AI-powered tools like Scribe Cockpit can be improved to support doctors.
- To evaluate the effectiveness of Scribe Cockpit in enhancing patient care outcomes in the US healthcare system.

3.4.2 Significance

The paper titled "The Integration of AI and Human Contribution by Augmedix in Assisting the US HealthCare System" beholds significance in multiple fronts. Firstly, the utilization of AI and Medical Documentation Specialists for record-keeping and data entry has amplified the efficiency of the doctors allowing them to allocate much more time to their patient care and ultimately improve overall patient experience. This entire procedure has the potential to better healthcare outcomes and also reduce healthcare costs.

Furthermore, the incorporation of artificial intelligence and MDS can elevate the burden on healthcare professionals by automated routine tasks such as paperwork, thus enabling them to focus on more multiplexed work allowing them to mitigate the risks of outburns. This is particularly crucial in the contemporary healthcare landscape where physician fatigue is an utmost concern.

In winding up, the integration of AI and Medical Documentation Specialists in the healthcare arena has the potential to enhance the accuracy and security in keeping the records safe which is pivotal for effective patient treatment, clinical researches and medical billing processes. High-end,

innovative technologies like Augmedix's Scribe platform and Scribe Cockpit software have the capabilities to minimize errors and ensure the accurate collection and transmission of patient data.

3.5 Methodology

The integration of Artificial Intelligence (AI) with human efforts is rapidly transforming various sectors, including healthcare, Augmedix operating from Bangladesh, has implemented AI-human collaboration to support the US healthcare system. This study aims to comprehensively investigate the impact of this collaboration on patient outcomes, the potential of AI in healthcare and the improvement of AI-powered tools for better support to healthcare professionals.

Objective 1: To compare the effectiveness of AI and human contribution in improving patient outcomes in the US healthcare system.

Method 1: Qualitative data collected via Google Forms filled by MDS, where metrics related to patient outcomes such as patient satisfaction scores, treatment adherence rate, and occurrence of medical error.

Objective 2: To explore how AI can provide accurate results in healthcare and potentially replace human involvement.

Method 2: Quantitative data from Method 1 has been analyzed to access the accuracy of AI generated data compared to human input. Additionally, scribe filled Google Forms gathered the understanding and perceptions and attitude towards AI's role in healthcare.

Objective 3: To identify the key benefits and drawbacks of using AI for patient care in US healthcare system.

Method 3: Semi-structured interviews were conducted with an Assistant Manager to generate in-depth insights into the advantages and disadvantages of AI implementation in patient care. Thematic analysis was employed to recognize emerging themes.

Objective 4: To understand how AI-powered tools like Scribe Cockpit can be improved to support doctors.

Method 4: Interviews with Medical documentation Specialists was conducted and analyzed using statistical software to generate descriptive statistics. This helped to understand the pattern in the data, informing the enhancement of AI-powered tools for better support to healthcare professionals.

Objective 5: To evaluate the effectiveness of Scribe Cockpit in enhancing patient care outcomes in the US healthcare system.

Method 5: Qualitative data collected from survey forms analyzed thematically to identify key themes and patterns related to the impact of Scribe Cockpit on patient care outcomes. To add, qualitative data from Method 1 will be utilized to measure the correlation between Scribe cockpit usage and in improvements in patient outcome.

This comprehensive mixed methods approach will provide valuable insights into the impact of AI-human collaboration on the US Healthcare System.

3.5.1 Demographics

The research group comprises Medical Documentation Specialists working for Augmedix Bangladesh who are acquainted with the Scribe Cockpit system and the company's technologies.

3.5.2 Data Collection

Data has been collected through a survey questionnaire based on Google Forms and an interview was taken of one Assistant Manager from Augmedix Bangladesh's Operations Department. The questionnaire's primary motive was to gather insightful knowledge, experience and perception of participants regarding integration of AI and human interaction in healthcare as well as their views on its impact on the US healthcare system. The google form was distributed to 170 randomly selected MDS. The interview with the Assistant manager was done to get deeper insights of the organization's implementation of AI and human- created technology in the US healthcare system.

The primary data collected from the survey questionnaire and the interview was analyzed utilizing statistical software to get descriptive statistics patterns and trends in the data. Furthermore, the qualitative data was collected via interviews which were thematically analyzed to identify significant themes and patterns.

3.5.3 Hypothesis

H0: Both Artificial Intelligence (AI) and human contributions are equally essential for the success of the US healthcare system.

H1: The success of the US healthcare system relies solely on Artificial Intelligence (AI).

3.6 Findings and Analysis

Artificial Intelligence (AI) has made quintessential advancements in healthcare while promising to ensure patient care, reduce costs and clinical decision-making (NUFFIELD COUNCIL ON

BIOETHICS, 2018). Although, the larger perspective of AI-powered healthcare tools and technologies is in the rudimental stage (Lee & Yoon, 2021). This study aims to explore the output of Artificial Intelligence (AI) and human involvement in the US healthcare system. It investigates the potential results of AI implementations in healthcare and the pros and cons of using AI for patient care and strategies to optimize AI integrated technologies to support healthcare professionals and enhance patient care experience.

3.6.1 Necessity of AI-Human Collaboration in US Healthcare

Information was collected via surveying 170 MDS to examine the impact of AI and human engagement on the US healthcare system. The survey aims to gather insights and experiences regarding the role of AI in patient healthcare. As per the results, 84.3% of the respondents support the notion of both AI and human contribution. As they believe the fusion of both AI and human contribution is vital for the effectiveness of the healthcare system. Intriguingly, a notable portion of respondents 64.9%, expressed that AI could potentially supplant human involvement in patient care, hence, it should albeit to a limited degree.

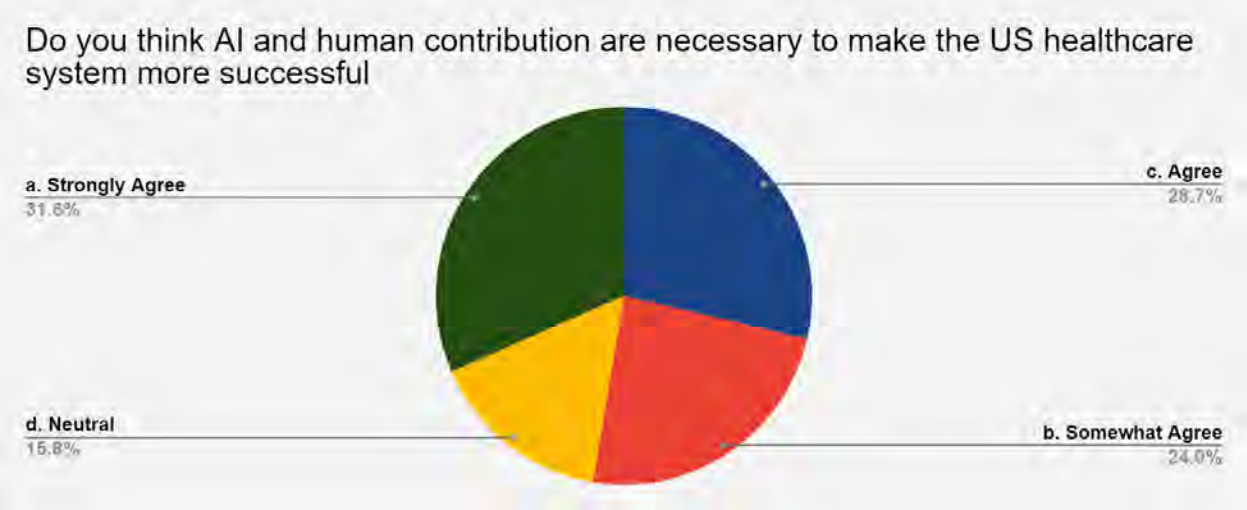

Figure 14: Successful AI and Human Contribution Rate

The data for participants' responses shows that 84.3% of respondents acknowledge the necessity of both AI and human inputs for the better effectiveness of the US healthcare system, with 15.8% expressing neutrality with this assertion.

3.6.2 Perspective on AI Replacing Scribes

The survey assessing attitudes towards the potential replacement of human contributions or scribes by AI technology in various domains revealed nuanced perspectives

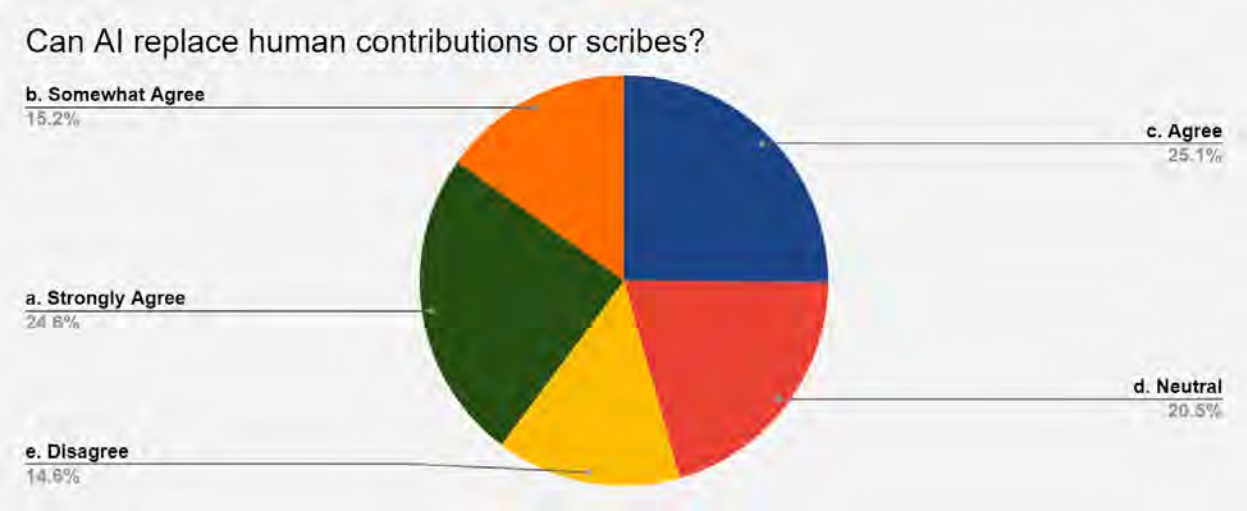

Figure 15: Replacement Rate

Notably, a combined 65.1% of respondents expressed agreement (strongly agree, agree, and somewhat agree) with the notion of AI replacing human contributions, indicating a substantial inclination towards technological integration. However, the presence of a sizable neutral stance at 20.5% suggests a significant segment with uncertainties or reservations. Additionally, 14.6% of respondents disagreed with the idea, highlighting a noteworthy opposition to the complete replacement of human roles by AI. These findings underscore the complexity of attitudes towards AI integration, indicating both receptiveness and skepticism within the surveyed population.

3.6.3 Cost Effectiveness

The survey investigating perceptions of the cost effectiveness of integrating AI within the US healthcare system unveils diverse viewpoints

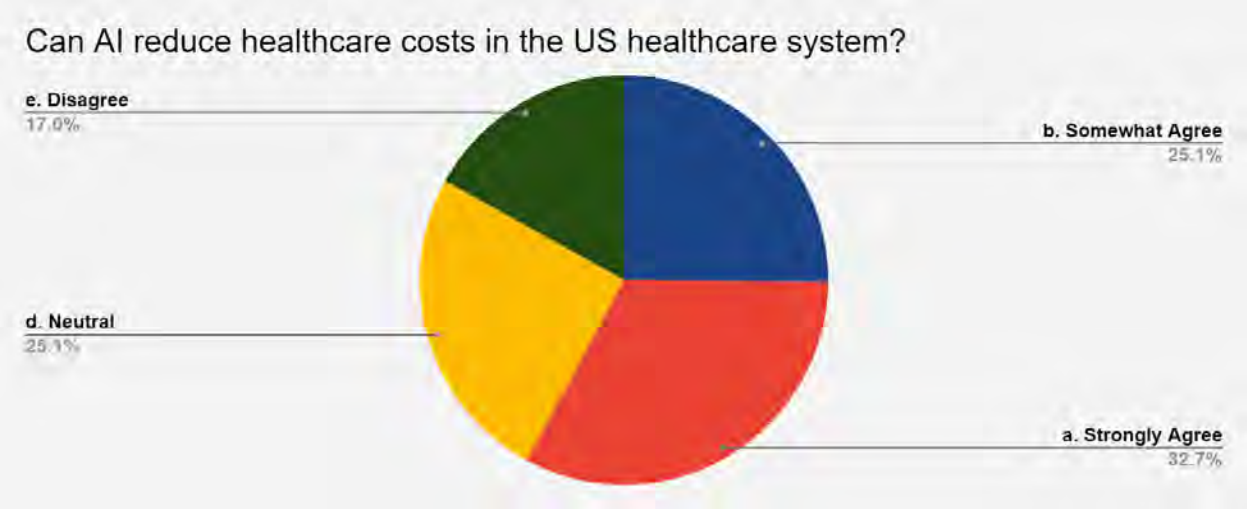

Figure 16: Reduce Cost Rate

A combined 57.8% of respondents (32.7% strongly agree and 25.1% somewhat agree) indicate agreement with the notion of AI's cost effectiveness in healthcare. However, 17% of respondents express disagreement, suggesting skepticism regarding the financial benefits of AI integration. Additionally, a notable proportion of respondents (25.1%) adopt a neutral stance, reflecting uncertainty or indecision. These findings illuminate the varied viewpoints surrounding the economic viability of AI implementation in healthcare.

3.6.4 AI Applications for Enhanced Patient Care

The survey aimed at exploring the potential applications of AI to enhance patient care within the US healthcare system reveals several key insights.

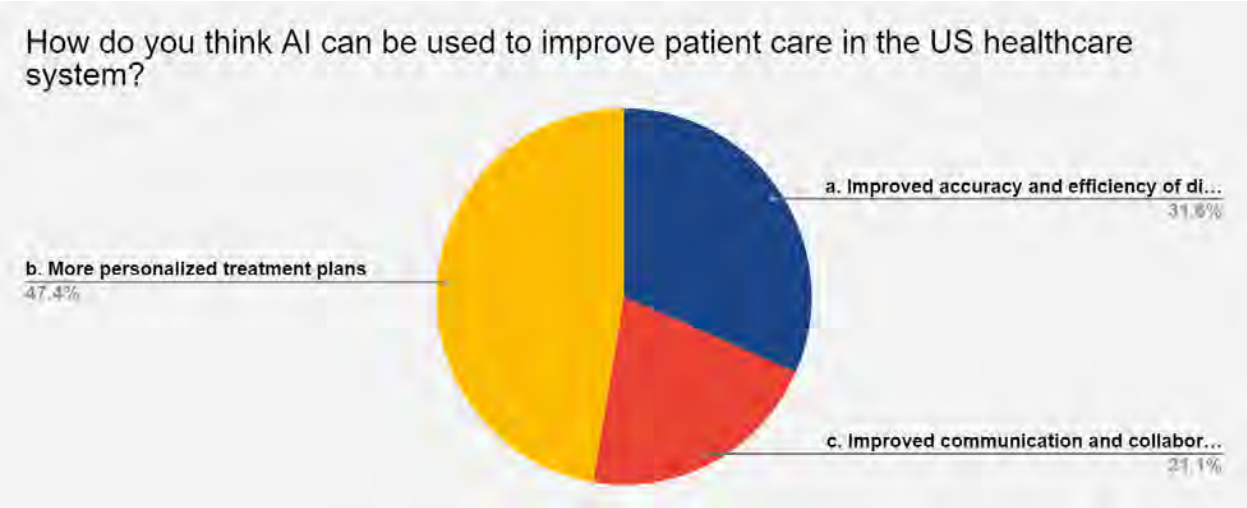

Figure 17: Use of AI in improving patient care

The majority of respondents (47.4%) advocate for the adoption of AI to facilitate more personalized treatment plans. This emphasis on personalization underscores the growing recognition of AI's capacity to tailor healthcare interventions to individual patient needs, potentially leading to more effective outcomes. Additionally, 31.6% of respondents prioritize the improvement of accuracy and efficiency in diagnosis through AI utilization, highlighting the technology's role in augmenting diagnostic capabilities and streamlining healthcare processes. Furthermore, 21.1% of respondents emphasize the importance of AI in fostering improved communication and collaboration among healthcare providers, reflecting its potential to facilitate seamless information exchange and interdisciplinary teamwork.

3.6.5 AI Accuracy in Medical Documentation

The survey assessing perceptions of the accuracy of AI-powered medical record documentation and note-taking provides valuable insights into attitudes towards AI utilization in healthcare documentation.

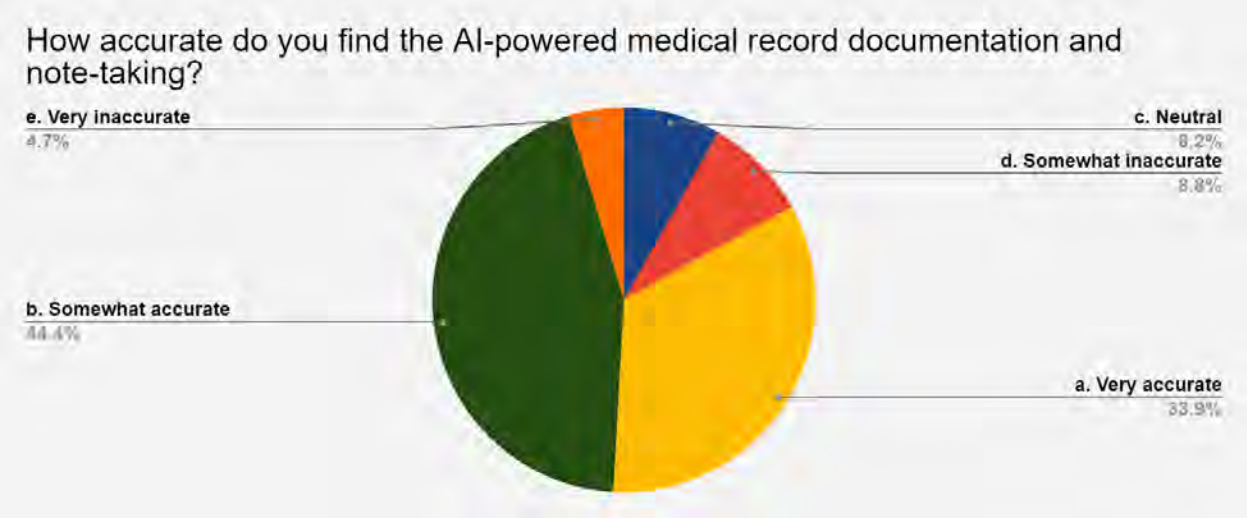

Figure 18: Accuracy AI in medical documentation rate

A significant majority of respondents (78.3%) express confidence in the accuracy of AI-generated medical records, with 33.9% considering them "very accurate" and 44.4% deeming them "somewhat accurate." This widespread acknowledgment of AI's accuracy underscores growing trust in its ability to reliably document patient information. However, a notable proportion of respondents (17%) adopt a neutral stance, suggesting some level of uncertainty or reservation. Additionally, while a small percentage (4.7%) considers AI documentation to be "very inaccurate," another 8.8% perceive it as "somewhat inaccurate." These findings highlight both the perceived

strengths and limitations of AI-powered medical record documentation, indicating a need for further validation and refinement of AI algorithms to enhance accuracy and reliability.

3.6.6 Synergies between Human Expertise and AI in Healthcare

In the dynamic landscape of healthcare, the integration of artificial intelligence (AI) alongside human expertise represents a pivotal avenue for innovation and improvement. This survey explores the intricate relationship between human contribution and AI in healthcare, aiming to elucidate perceptions and insights regarding the synergistic potential of these two elements.

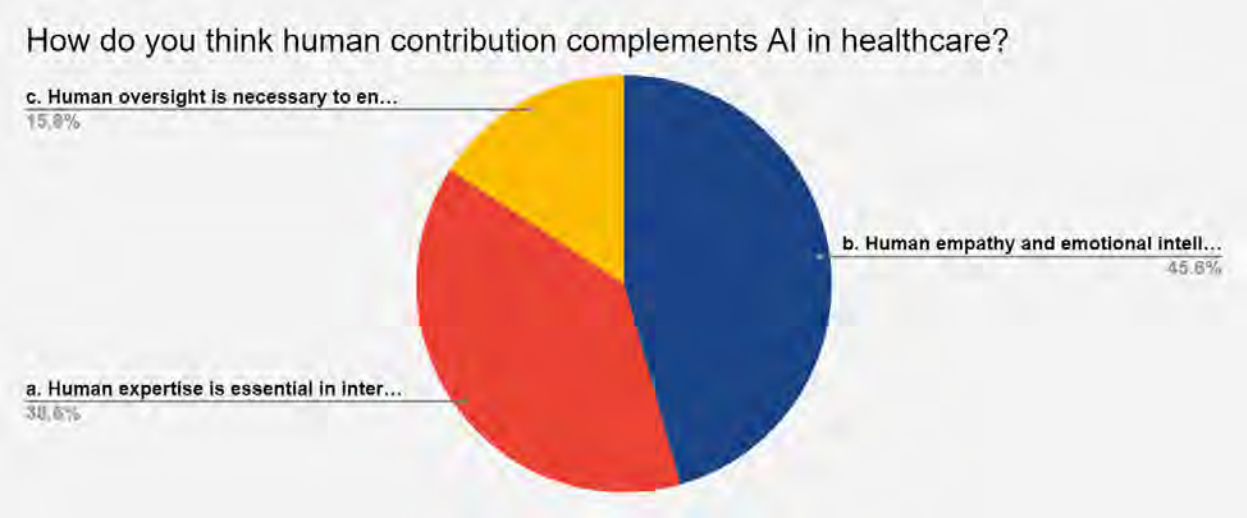

Figure 19: Human contribution to healthcare

The responses indicate human involvement compliments AI within the healthcare system. To add, human expertise is pivotal and is much needed for the interpretation and utilization of data generated by AI. Additionally, human empathy and emotional intelligence play a vital role in patient care. Subsequently, human supervision is necessary to ensure the ethical and responsible application of AI in healthcare.

3.6.7 Scribe and Scribe Cockpit Software on Work Efficiency

The survey evaluating the impact of scribe and scribe cockpit software on work efficiency reveals noteworthy insights into their effectiveness in healthcare settings.

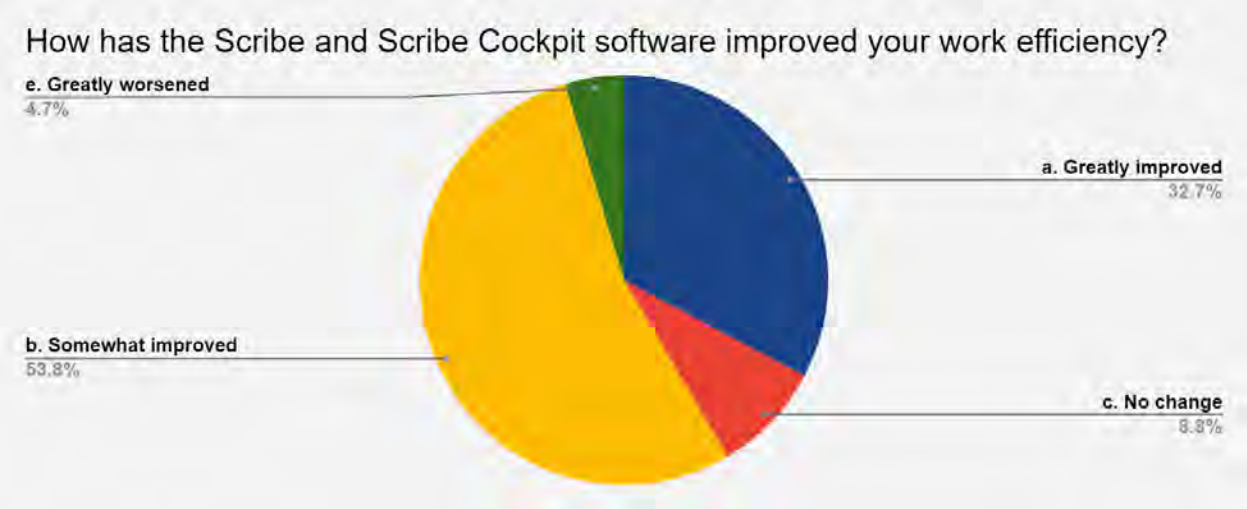

Figure 20: Benefit of Scribe Cockpit

A significant majority of respondents (86.5%) report positive outcomes, with 32.7% indicating that these tools have "greatly improved" work efficiency and a further 53.8% stating "somewhat improved." This widespread perception of improvement underscores the value of scribe and scribe cockpit software in streamlining tasks and optimizing workflow processes for healthcare professionals. However, it is essential to acknowledge the minority perspective, with 4.7% of respondents indicating that these tools have "greatly worsened" work efficiency. Additionally, a smaller proportion (8.8%) report "no change" in efficiency, highlighting variability in experiences and outcomes across different healthcare contexts.

3.6.8 Drawbacks and Challenges

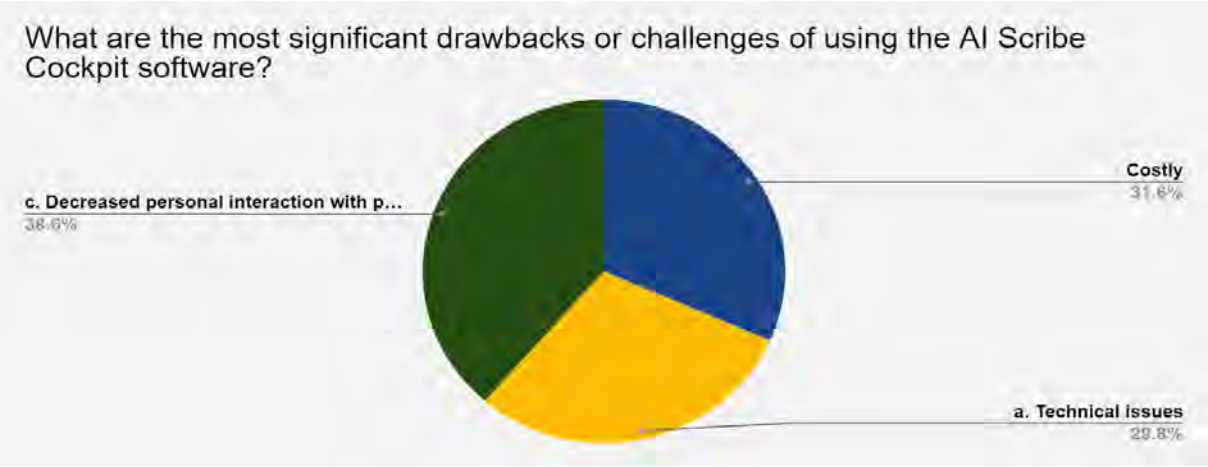

Figure 21: Drawbacks of AI Scribe Cockpit

The survey data reveals several drawbacks associated with the implementation of Scribe Cockpit. This includes high implementation costs and the urgency to overcome the scribe training language barrier and technical issues. Moreover, some respondents expressed concerns about the reduction of human involvement in the healthcare system.

3.6.9 Discussion:

Analyzing the questionnaire, the results it gave was, it is possible to conclude both AI and human involvement are crucial in the US healthcare system. Most respondents (86.5%) believed AI-driven solutions such as Scribe Cockpit bettered medical documentation productivity. They stated AI technology assists their responsibilities faster, more precisely and smoothly, resulting in better healthcare.

Despite acknowledging the positive impact of AI, respondents underscored the indispensable role of humans in the healthcare system. A majority of (64.9%) expressed that AI should complement humans rather than replacing them in the case of medical healthcare. They heavily emphasized the importance of interpersonal connections and empathy in serving quality patient care, particularly in sensitive situations. Human involvement was highlighted as crucial, with many participants emphasizing the significance of doctor-patient relationship. Many noted that while AI may excel in data analysis, human doctors are still essential in making decisions and tailor the treatment plans. All in all, the data suggests achieving a balance between AI and human input for the delivery of excellent patient care and ensuring a sustainable US healthcare system.

Additionally, the findings suggested participants view AI as a tool to enhance rather than replace human expertise. They acknowledged the factor that AI can assist doctors in making more informed decisions. However, it is ultimately the doctor's responsibility to interrupt and apply that information to provide optimal care to their patients.

Moreover, the results indicate the potential for improvement in the utilization of AI- powered tools such as the Scribe Cockpit within the healthcare system. Many even suggested that the software can be made better by providing more accurate, valuable data, especially in scenarios which involve complex diagnoses and detailed medical records.

Augmedix integration with AI technologies such as Natural Language Processing (NLP), voice recognition and machine learning, in its product and services represents a significant advancement in healthcare documentation. Through the automation process of medical documentation, these technologies enable healthcare professionals to focus more on delivering quality patient care while

also saving time. Additionally, AI-driven documentation reduces the likelihood of errors in medical documentation, leading to improved patient outcomes.

Although advancement in AI, human involvement remains essential for ensuring the accuracy and completeness required in healthcare documentation. Augmedix addressed the need by employing a team of medical documentation specialists who work alongside AI to deliver high-quality records. These MDS goes through training to understand medical terminologies and acronyms that may be challenging for AI systems. Collaborating with physicians in the US, these scribes ensure the capture of precision and comprehensive medical records in real-time.

The finding implies both Ai and human involvement is needed in the healthcare system to serve its ultimate goal which is providing valued healthcare. While AI-driven applications like Scribe-Cockpit can enhance the process of record book keeping, maintaining human interaction and empathy remains crucial for delivering excellent patient care.

In conclusion, this study investigates the impact of AI and human contribution on the US healthcare system. As per the results, extracted from the survey findings, while AI has the potential to assume some indispensable aspects of the human role to play in the medical care, it is not viewed as complete replacements. Hence, the mixture and balance are essential for the success in the healthcare system. Contrarily, the data also highlighted the drawbacks of employing AI in treating patient care. The usage of AI instruments can increase accuracy in diagnosis and patient satisfaction, alongside the concern of AI-tools becoming the reason for potential loss of human connection. All-inclusively, the study emphasizes the importance of balancing AI and human contribution to enrich the efficiency and effectiveness of the US healthcare system.

3.6.10 Future Prediction:

Using AI software called bigml, a future prediction has been shown here.

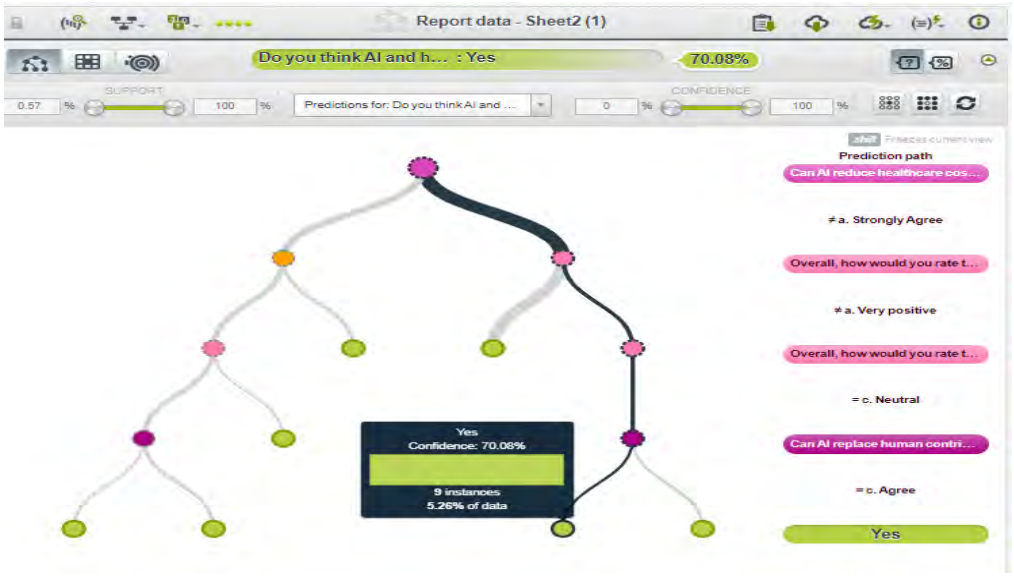

Figure 22: Future prediction of the importance of AI and human contribution

Based on the collected data, a future prediction has been made using the bigml software. To show the predictive analysis, I've chosen a decision tree analysis. A predictive analytics decision tree is a type of machine learning algorithm that employs a tree-like structure to predict outcomes by dividing the data into smaller groups according to various conditions (Divyashree & Divakar, 2018). This is a very powerful tool that helps in analyzing the complex data sets and making accurate predictions by identifying patterns and relationships (Divyashree & Divakar, 2018). This data driven analysis shows around 70.8% chances are there for AI and human contribution in the US healthcare system to be successful. This also aligns with the hypothesis of the research stated.

3.6.11 Summary and Conclusions

In summary, while AI holds promising transformation in the healthcare sector, it couldn't entirely replace human involvement. There are some inherited limitations in AI systems and electronic healthcare records which necessitate human intervention for accurate human expertise and decision-making. All Medical documentation Specialists (MDS) must undergo training to effectively collaborate with AI systems designed to assist physicians in their duties. As highlighted by (Reddy, 2024) adopting a human centric approach that keeps in mind the pivotal role of physicians in healthcare is very essential for the effective integration of AI in the healthcare system. The study successfully sheds light upon its objectives and validates its hypothesis, examining the impact of AI and human intervention in the US healthcare sector.

Overall, the research underscores the essentialness of human input in the medical field and stresses the need for collaboration between AI systems and healthcare professionals to enhance patient outcomes. Further research is warranted to explore the potential of AI in healthcare and devise strategies for the betterment of improving interaction between AI systems and healthcare providers.

3.7 Limitations

The study has several limitations, primarily focusing on the specific group of scribes employed by Augmedix Bangladesh with a sample size consisting of 170 MDS. This finding may not be applicable to other healthcare systems which are situated in various geographical and demographic groups. As described in (Kasula, 2023) in their critique of Electronic Healthcare Records (EHR) larger samples are typically preferred to enhance the generalizability of results. Additionally, replying on respondent input introduces the potential input for bias, such as social desirability bias, recall bias and other forms of prejudice, which influences the accuracy of the findings.

3.8 Recommendations

To overcome the investigation's shortcomings additional studies might try to repeat the investigations with an extensive range of samples for better results to come to conclusions' adaptability. Furthermore, research endeavors could enhance the reliability of outcomes by the integration of self-reported data with sources of information from diverse sources such as reports and evaluation of health records. To add, there is a potential exploration field in machine learning (ML) and Natural language Processing (NLP). These techniques are aimed at extracting information from patient interaction. According to the review by, (Falcetta et al., 2023) this could lessen the dependency on self-reported data in the future.

3.8.1 Further Implications

The research findings have considerable implications for the utilization of AI in healthcare. According to the survey findings physicians generally perceive AI as advantageous for improving record-keeping accuracy and reducing errors. However, concerns about the job displacement and regular issues with security underscores the need for further research and development in the field of ethical and legal implementation of AI in healthcare (Reddy, 2024) highlighted in their analysis of the emergency of AI in healthcare that establishes effective and ethical artificial intelligence in the healthcare sector. This requires collaboration among physicians, policymakers and technology innovators to make this process more effective and smoother at the same time.

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Appendix

Survey Questionnaire

1. How familiar are you with the concept of artificial intelligence (AI) in healthcare?
a. Very familiar
b. Somewhat familiar
c. Not familiar at all

2. How would you rate the importance of AI in healthcare?
a. Extremely important
b. Very important
c. Moderately important
d. Slightly important
e. Not at all important

3. How has your experience been using AI in your work at Augmedix?
a. Very positive
b. Somewhat positive
c. Neutral
d. Somewhat negative
e. Very negative

4. How would you describe the impact of AI on the US healthcare system?
a. Very positive
b. Somewhat positive
c. Neutral
d. Somewhat negative
e. Very negative

5. How do you think AI can be used to improve patient care in the US healthcare system?
a. Improved accuracy and efficiency of diagnosis
b. More personalized treatment plans
c. Improved communication and collaboration among healthcare providers
d. Other (please specify): _____

6. How do you think human contribution complements AI in healthcare?
a. Human expertise is essential in interpreting and acting on AI-generated data
b. Human empathy and emotional intelligence are important for patient care
c. Human oversight is necessary to ensure ethical and responsible use of AI in healthcare
d. Other (please specify): _____

7. How can Augmedix improve its use of AI to benefit the US healthcare system?
a. Expand the use of AI in healthcare operations
b. Increase training and education on AI for employees
c. Develop new AI tools and technologies
d. Other (please specify): _____

8. Overall, how would you rate the role of AI and human contribution in the US healthcare system?
a. Very positive
b. Somewhat positive
c. Neutral
d. Somewhat negative
e. Very negative

9. How long have you been working at Augmedix?
a. Less than 1 year
b. 1-2 years
c. 2-5 years
d. 5+ years

10. How frequently do you use the Scribe and Scribe Cockpit software in your work?
a. Multiple times a day
b. Daily
c. Weekly
d. Monthly
e. Rarely

11. How has the Scribe and Scribe Cockpit software improved your work efficiency?
a. Greatly improved
b. Somewhat improved
c. No change
d. Somewhat worsened
e. Greatly worsened

12. How accurate do you find the AI-powered medical record documentation and note-taking?
a. Very accurate
b. Somewhat accurate
c. Neutral
d. Somewhat inaccurate
e. Very inaccurate

13. Do you believe that the use of AI and human contributions together is the future of the US healthcare system?
a. Strongly agree
b. Somewhat agree
c. Neutral
d. Somewhat disagree
e. Strongly disagree

14. What are the most significant drawbacks or challenges of using the Scribe and Scribe Cockpit software?
a. Technical issues
b. Resistance from healthcare providers
c. Decreased personal interaction with patients
d. Other (please specify)

15. How do you feel about the implementation of AI and related technologies in the healthcare industry?
a. Excited
b. Nervous
c. Neutral
d. Unsure

AUGMEDIX, INC.
Condensed Consolidated Statements of Operations
(Unaudited, in thousands, except shares and key metrics)

	Quarter Ended December 31,		Year Ended December 31,	
	2023	2022	2023	2022
Revenues	$ 12,680	$ 8,751	$ 44,855	$ 30,933
Cost of revenues	6,434	4,702	23,329	16,979
Gross profit	6,246	4,049	21,526	13,954
Operating expenses:				
General and administrative	4,906	4,538	18,442	16,893
Sales and marketing	2,747	2,339	10,687	9,283
Research and development	2,940	2,612	11,176	10,149
Total operating expenses	10,593	9,489	40,305	36,325
Loss from operations	(4,347)	(5,440)	(18,779)	(22,371)
Other income (expenses):				
Interest expense	(645)	(373)	(2,253)	(1,675)
Interest income	384	177	1,110	245
Loss on debt extinguishment	—	—	—	(1,097)
Change in fair value of warrant liability	—	—	(105)	—
Other	93	108	1,001	560
Total other income (expenses), net	(168)	(88)	(247)	(1,967)
Loss before income taxes	(4,515)	(5,528)	(19,026)	(24,338)
Income tax expense (benefit)	(24)	71	145	111
Net loss	$ (4,491)	$ (5,599)	$ (19,171)	$ (24,449)
Weighted average shares of common stock outstanding, basic and diluted	49,021,095	37,435,000	43,946,263	37,418,463
Key Metrics:				
Average clinicians in service	1,789	1,246	1,585	1,093
Average annual revenue per clinician	28,200	27,500	28,100	27,900
Dollar-based net revenue retention	152 %	126 %	148 %	128 %