

Integrating Health Informatics and Medical Secretary into Health Administration for Public Health Education for Dental Health

Ali Hussain Alkadhem¹, Areej Muslim Al Aqeeli², Ahmed Ibrahim Al Qumber³, Layla Ali Al Rebh⁴, Sana Hassan Al Khalil⁵, Alaa Redha Alhargan⁶, Fatimah Madan Alkhabbaz⁷, Rida Mohammed Khalifa⁸, Ali Hussain Althwab⁹, Adel Abdullah Alaradi¹⁰

¹ Health Administration - Ibn Hayyan Primary Healthcare, Alkhobar Health Cluster
(ali.h.alkadhem@gmail.com)

² Medical Secretary - Maternity and Children Hospital, Dammam (Areej.muslim.aqeeli@gmail.com)

³ Medical Information - Dammam Medical Complex (abuibrahim26@gmail.com)

⁴ Health Informatics Technician - Maternity and Children Hospital, Dammam (Layla.ali.r@gmail.com)

⁵ Health Informatics Technician - Maternity and Children Hospital, Dammam (Shalkhalil@hotmail.com)

⁶ Health Informatics Technician - Maternity and Children Hospital, Dammam (aalhargan@moh.gov.sa)

⁷ Health Informatics Technician - Maternity and Children Hospital, Dammam (Fmalkhabbaz@moh.gov.sa)

⁸ Dentist - Al Majid Primary Healthcare Center (Rikhalifa@moh.gov.sa)

⁹ Epidemiology Inspector - Al Mansoura Health Center (aalthwab@moh.gov.sa)

¹⁰ Technician - Public Health - King Fahad Hospital, Hofuf (aalaradi@moh.gov.sa)

Abstract:

Integrating health informatics and medical secretary roles into health administration is crucial for advancing public health education in dental health. Health informatics involves the use of technology to gather, manage, and analyze health data, providing valuable insights that can inform public health strategies and educational initiatives. By leveraging electronic health records, data analytics, and telehealth solutions, health informatics can facilitate the identification of oral health disparities among different population groups. This data-driven approach enables administrators to design targeted educational programs that address specific needs, promote preventive care, and improve health literacy around dental health. Additionally, medical secretaries play a vital role in the operational efficiency of health administration by managing patient records, scheduling appointments, and enhancing communication between patients and healthcare providers. Their involvement ensures that public health educators have timely access to relevant data and resources, allowing for more effective dissemination of information regarding dental health practices. Furthermore, medical secretaries can act as a bridge between the clinical and administrative aspects of health care, ensuring that educational materials are aligned with the latest clinical guidelines and community health objectives. The collaboration of health informatics and medical secretaries within health administration thus amplifies the effectiveness of public health education initiatives, ultimately leading to improved dental health outcomes.

Keywords: Health Informatics, Medical Secretary, Health Administration, Public Health Education, Patient Care, Data Management, Community Health, Health Data Analysis, Health Knowledge Gaps, Educational Interventions.

Introduction:

In the contemporary realm of healthcare, the convergence of technology and administrative practices has become increasingly pivotal in optimizing health outcomes and enhancing the effectiveness of public health education. The integration of health informatics—a multidisciplinary field that combines information technology, biomedical knowledge, and health sciences—with the essential functions of medical secretaries plays a vital role in innovating health

administration. This integration is especially critical in addressing the complex challenges faced by public health systems today, including managing large volumes of data, improving patient care, and ensuring seamless communication among healthcare providers, patients, and stakeholders [1].

The role of health informatics in public health cannot be overstated. As the healthcare landscape evolves, so do the methods employed in data management, patient care, and disease prevention. Health informatics encompasses the systematic

collection, storage, and analysis of health data, which can be utilized to inform decision-making, track health trends, and implement public health initiatives. Additionally, the advent of electronic health records (EHRs) and data analytics has transformed traditional practices, allowing for more efficient ways to capture and disseminate valuable health information. Through the lens of health informatics, public health education can be tailored to meet the needs of diverse populations, promote community engagement, and facilitate the delivery of targeted health interventions [2].

On the other hand, the function of a medical secretary extends far beyond mere administrative support. Medical secretaries serve as the crucial link between medical professionals, patients, and administrative systems. They are responsible for a myriad of tasks, including scheduling appointments, managing patient records, processing insurance claims, and ensuring compliance with health regulations. By integrating their training and skill set into health informatics systems, medical secretaries can significantly enhance the quality and efficiency of health information management. Their frontline experience in patient interactions equips them with unique insights into the challenges faced by healthcare providers and patients alike, thereby positioning them as essential contributors to health administration and public health education [3].

In the context of public health education, the integration of health informatics and medical secretarial roles can lead to several transformative outcomes. First, effective data collection and management form the backbone of successful public health campaigns. When medical secretaries leverage health informatics tools, they can streamline data input and ensure that accurate and timely information is available for public health officials and educators. This synergistic relationship not only fosters better communication but also enhances the overall quality of health education initiatives, enabling them to focus on evidence-based practices tailored to specific community needs [4].

Moreover, the integration of these roles allows for the development of more robust training programs for healthcare professionals and medical secretaries alike. By incorporating health informatics education into the curriculum for medical secretaries, future practitioners can gain essential skills in data

analysis, cybersecurity, health policy, and information management. In turn, these skills enable medical secretaries to contribute meaningfully to health informatics projects and initiatives, ensuring that they are well-equipped to navigate the data-driven landscape of modern healthcare [5].

Furthermore, this integration addresses critical issues related to equity and access in public health education. The deployment of health informatics tools can help identify health disparities within different populations, enabling targeted educational efforts that resonate with specific communities. Medical secretaries, aware of the social determinants of health affecting their patients, can utilize data to advocate for inclusive public health interventions. By raising awareness of health issues pertinent to diverse populations, this integration promotes health literacy and empowers communities to engage in preventive health measures more effectively [6].

The Role of Health Informatics in Public Health Administration:

Health informatics is an interdisciplinary field that combines information technology, healthcare, and information management to improve health care delivery and patient outcomes. As global health challenges evolve, the integration of health informatics into public health administration has become increasingly vital. This integration not only enhances data management and decision-making processes but also improves health outcomes, optimizes resource allocation, and fosters effective communication within the public health infrastructure [7].

Health informatics encompasses a wide range of technologies and systems that facilitate the collection, storage, analysis, and dissemination of health-related data. Key components of health informatics include electronic health records (EHRs), clinical decision support systems (CDSS), telehealth technologies, health information exchanges (HIE), and data analytics tools. These tools enable health care providers and public health officials to better manage health information, streamline workflows, and improve care coordination [7].

In the context of public health, informatics plays a crucial role in disease surveillance, health promotion, and population health management. By

harnessing data from diverse sources—such as hospitals, laboratories, and community health assessments—public health officials gain valuable insights into health trends, epidemiological patterns, and the effectiveness of interventions. This comprehensive understanding enables proactive health planning and the allocation of resources to address emergent health issues effectively [8].

Applications of Health Informatics in Public Health Administration

1. **Disease Surveillance and Outbreak Management:** One of the most critical applications of health informatics is disease surveillance. Public health agencies utilize informatics tools to monitor disease outbreaks in real time, track epidemiological data, and identify trends over time. For example, geographic information systems (GIS) can map out outbreaks of infectious diseases, allowing health officials to visualize the spread and intensity of incidents geographically. This capability supports timely interventions, such as vaccination campaigns or public health advisories [9].
2. **Decision Support Systems:** Health informatics empowers public health administrators through clinical decision support systems (CDSS), which provide evidence-based recommendations to guide decision-making. These tools can analyze large datasets to generate insights that assist public health professionals in developing effective policies and allocating resources. Moreover, they can integrate clinical guidelines and best practices, ensuring that interventions are based on the latest scientific evidence [10].
3. **Resource Management:** Efficient resource allocation is essential in public health administration, particularly during health emergencies. Health informatics facilitates the management of resources, such as hospital beds, medical supplies, and health workforce deployment, ensuring that communities have access to essential services when needed the most. By analyzing data on disease incidence, population demographics, and health care

utilization patterns, public health officials can optimize the distribution of resources and personnel [10].

4. **Patient and Community Engagement:** Health informatics also fosters better communication between public health agencies and the communities they serve. Through telehealth and mobile health applications, individuals can access health information, schedule appointments, and participate in health education programs. This increased engagement not only improves community awareness of public health initiatives but also encourages healthy behaviors, leading to better population health outcomes [11].
5. **Evaluating Interventions and Outcomes:** Systematic evaluation of public health interventions is fundamental to understanding their effectiveness. Health informatics enables a data-driven approach to assess the outcomes of various public health initiatives. By analyzing pre- and post-intervention data, public health administrators can identify successful strategies, recognize areas for improvement, and adapt future activities to maximize impact [11].

Benefits of Health Informatics in Public Health Administration

The benefits of health informatics in public health administration are profound and far-reaching. Firstly, it enhances data-driven decision-making, allowing officials to use evidence to shape public health policies and interventions. This results in improved health outcomes and more efficient use of public resources [12].

Secondly, health informatics promotes collaboration across different sectors of public health, facilitating the sharing of information between various stakeholders. This collaboration is crucial for comprehensive health responses, particularly during public health emergencies like pandemics [12].

Moreover, health informatics enhances health equity by making health information accessible to underserved populations. By leveraging mobile technologies and online platforms, public health agencies can communicate health information

effectively, ensuring that marginalized communities receive the necessary support and resources [13].

Despite its advantages, integrating health informatics into public health administration is not without challenges. One of the primary hurdles is the issue of data privacy and security. As public health agencies collect and manage sensitive health data, they must ensure compliance with regulations like the Health Insurance Portability and Accountability Act (HIPAA) while fostering trust with the communities they serve [14].

Furthermore, the adoption of health informatics tools can require significant financial and human resources, particularly for smaller public health departments. Limited budgets, inadequate infrastructure, and a shortage of trained personnel can impede the effective implementation of informatics initiatives [14].

Additionally, the integration of disparate data systems poses another challenge. Different public health entities may operate using distinct technologies, leading to data silos that hinder comprehensive data analysis. Achieving interoperability among various systems is essential to obtaining a unified view of public health data [15].

The role of health informatics in public health administration is poised to grow significantly in the coming years. Future advancements in artificial intelligence (AI) and machine learning will allow public health officials to make more accurate predictions about disease outbreaks and population health trends. As predictive analytics evolve, public health agencies can shift from reactive to proactive health management strategies [16].

Moreover, the ongoing rise of consumer health technologies, such as wearable devices and health apps, presents new opportunities for health informatics. These tools can generate real-time health data, empowering individuals to take charge of their health while providing public health agencies with invaluable insights into community health status [17].

Finally, increased investment in health informatics training and education will be crucial for the next generation of public health professionals. By equipping public health workers with the necessary skills to utilize advanced technologies, the field can

ensure a more effective and data-driven approach to health administration [18].

Impact of Medical Secretaries on Healthcare Efficiency:

The healthcare industry is a complex, multifaceted environment where numerous professionals work towards the shared goal of providing quality care to patients. Among these professionals, the role of medical secretaries has often been understated yet is crucial in maintaining the efficiency and efficacy of healthcare delivery [19].

Medical secretaries form the backbone of healthcare administrative functions. They manage a plethora of tasks that include scheduling appointments, maintaining patient records, processing billing and insurance claims, and overseeing correspondence. By managing these administrative duties effectively, medical secretaries allow healthcare providers to concentrate on patient care. This organization reduces the likelihood of errors and delays that can arise from mismanagement of paperwork or scheduling conflicts [19].

For instance, a well-organized appointment schedule managed by medical secretaries not only optimizes the use of the healthcare provider's time but also improves patient access to care. They can dynamically accommodate emergencies and special cases while minimizing downtime. By implementing effective systems for managing patient information, medical secretaries ensure that the right data is available to healthcare practitioners at the right time, bolstering clinical decision-making [20].

In healthcare, communication is pivotal. Medical secretaries act as key points of contact between patients, healthcare providers, and other stakeholders, such as insurance companies or laboratories. Their role in facilitating effective communication cannot be overstated. They bridge the gap between various departments, ensuring that information flows smoothly and efficiently [21].

For example, a medical secretary may coordinate referrals from primary care physicians to specialists, an essential process that entails proper documentation, scheduling, and follow-up. Effective communication also includes relaying test results to patients and ensuring that healthcare providers have all necessary patient histories and

documents before consultations. By streamlining these communications, medical secretaries reduce the risk of mishaps and enhance the continuity of care, which ultimately contributes to better health outcomes for patients [22].

Medical secretaries play a vital role in enhancing the patient experience, which is increasingly recognized as an important component of healthcare efficiency. By handling patient inquiries, managing appointment reminders, and addressing patient concerns, medical secretaries ensure that patients are engaged and informed throughout their healthcare journey. This proactive patient management not only enhances patient satisfaction but also promotes adherence to treatment plans and follow-up appointments [23].

In recent years, the integration of technology in healthcare has further empowered medical secretaries. Digital appointment systems and patient management software have enabled more effective tracking of patient interactions, follow-ups, and the overall care pathway. Thus, medical secretaries can utilize these tools to maintain a responsive environment. When patients feel that they are being cared for and their needs are being promptly met, it promotes higher engagement, reduces no-show rates, and fosters a positive perception of the healthcare provider, ultimately contributing to a more efficient healthcare system [24].

Beyond their direct impact on patient care and administrative efficiency, medical secretaries also contribute to broader operational improvements within healthcare settings. By analyzing patterns in scheduling, patient flow, and resource utilization, they can offer insights that lead to optimized operations. For instance, their detailed knowledge of peak patient times and departmental capacities enables better resource allocation, whether this means adjusting staff schedules or redesigning workflow processes [25].

In addition, their role in maintaining compliance with healthcare regulations, such as HIPAA (Health Insurance Portability and Accountability Act) in the United States, is vital for minimizing legal risks and ensuring the integrity of patient data. By managing confidential patient information and adhering to stringent regulations, medical secretaries help healthcare organizations avoid costly legal

entanglements, which can detract from the overall efficiency and availability of services [26].

Despite the clear impact of medical secretaries on healthcare efficiency, the role faces challenges. As the field of healthcare evolves with technological advancements, medical secretaries must constantly update their skills and adapt to new processes. Automation and artificial intelligence present both opportunities and threats; while they can relieve secretarial workloads, they may also lead to job displacement. It is essential for healthcare organizations to invest in ongoing training and professional development opportunities for medical secretaries, emphasizing their value and adapting to an increasingly automated environment.

Furthermore, the recognition of the medical secretary role must be amplified within healthcare teams. Often hidden behind the scenes, their contributions should be acknowledged in professional settings, where the interdependence of various roles is fundamental to operational success [26].

Bridging the Gap: Communication and Collaboration in Health Settings:

In an increasingly complex healthcare landscape, communication and collaboration are more critical than ever for the delivery of effective healthcare services. The effectiveness of patient care hinges on the interactions among the myriad stakeholders involved, including healthcare professionals, administrative staff, patients, and their families. The interconnectedness of these relationships emphasizes the necessity for effective communication and collaboration in health settings, aiming to bridge gaps that can adversely affect patient outcomes [27].

The Importance of Communication in Healthcare

Effective communication is foundational to the process of healthcare delivery. It encompasses the exchange of information among healthcare providers, patients, and support staff. In a health setting, communication plays several crucial roles, including conveying medical information, building patient trust, and fostering teamwork among healthcare professionals.

1. **Patient Safety:** One of the primary goals of healthcare communication is to enhance patient safety. Research has established a strong correlation between miscommunication and patient harm. For instance, the Joint Commission reports that approximately 80% of serious medical errors involve miscommunication during patient transfers. Clear, concise, and accurate communication can help mitigate these risks, safeguarding patients from potential harm [28].
2. **Patient Education and Engagement:** Effective communication is vital for educating patients about their conditions, treatment options, and preventive measures. Empowering patients with knowledge not only enhances compliance with medical guidance but also encourages them to take an active role in their own healthcare decisions. Informed patients are more likely to ask pertinent questions and share important information with their healthcare providers, leading to improved health outcomes [29].
3. **Building Trust:** Trust between healthcare providers and patients is paramount for a successful therapeutic relationship. Candid communication fosters trust and rapport. When patients feel their providers listen to them and validate their concerns, they are more likely to share delicate information that could affect diagnostics and treatment. Trust also extends to communication among providers; interprofessional collaboration is enhanced when clinicians openly communicate and respect each other's expertise [29].
4. **Reducing Misunderstandings:** A considerable portion of communication challenges arises from the jargon and technical vocabulary common in medical fields. Effective communication entails translating complex medical terminologies into layman's terms to ensure that patients understand their circumstances. An educated patient is less likely to face misunderstandings that could hinder treatment adherence and recovery [30].

The Role of Collaboration in Health Settings

Collaboration in healthcare involves professionals from various disciplines working together towards shared goals, primarily improving patient outcomes. The emergence of integrated care models underscores the importance of collaboration, with a growing move towards patient-centered approaches.

1. **Multidisciplinary Teams:** Modern healthcare often requires a multidisciplinary approach in which physicians, nurses, pharmacists, social workers, and other specialists engage in collaborative practice. These teams draw upon their diverse expertise to deliver holistic care. For instance, in treating chronic illnesses, a collaborative team may include nutritional consultants, physical therapists, and mental health professionals alongside physicians, ensuring a comprehensive approach to patient health [31].
2. **Shared Decision-Making:** Collaboration also fosters shared decision-making, wherein healthcare providers and patients work together to make informed choices about treatment plans. Sharing knowledge and preferences leads to decisions that reflect the values and needs of patients, ultimately enhancing patient satisfaction and adherence to treatment protocols [31].
3. **Care Coordination:** The coordination of care requires seamless collaboration among multiple providers. A well-coordinated healthcare system reduces the incidence of duplicated tests, conflicting therapies, and medication errors. Electronic health records (EHRs) have emerged as pivotal tools in facilitating communication and sharing patient information among providers, thereby improving care coordination.
4. **Interprofessional Education (IPE):** Educating healthcare students together emphasizes collaboration skills before they enter the workforce. IPE programs help future professionals appreciate the roles of other disciplines, fostering respect and understanding that contribute to better teamwork in practice. As professions learn

from each other, they can break down silos that often inhibit effective communication and collaborative efforts [32].

Challenges to Effective Communication and Collaboration

Despite the clear benefits, numerous challenges impede effective communication and collaboration in health settings.

1. **Hierarchical Structures:** Traditional hierarchical dynamics within healthcare organizations can stifle open communication. In environments where providers do not feel empowered to voice their opinions or concerns, crucial information may not be shared, leading to gaps in patient care. Encouraging a culture of openness and mutual respect is essential to overcoming hierarchical barriers [33].
2. **Time Constraints:** High patient volumes and administrative responsibilities can limit the time healthcare providers have for thorough communication. Often, essential interactions become brief and transactional rather than meaningful exchanges. Organizations must prioritize communication in their workflows and consider innovative solutions, such as utilizing telemedicine services, which can provide more flexible communication options for patients and providers [33].
3. **Cultural and Language Barriers:** Cultural differences and language proficiency can significantly hinder effective communication in diverse healthcare environments. Providers must be culturally competent and equipped with skills to navigate language barriers, ensuring that patients from various backgrounds receive the same level of understanding and care.
4. **Technology Adoption:** While technological advancements have the potential to enhance communication and collaboration, they can also pose challenges if not implemented thoughtfully. Over-reliance on technology can diminish face-to-face interactions, which are often crucial for building

relationships and trust. Striking a balance between technology use and personal interaction is vital [34].

Strategies for Improvement

To enhance communication and collaboration in health settings, several strategies can be employed:

1. **Training and Development:** Continuous professional development programs focused on communication skills, cultural competency, and teamwork should be mandatory for all healthcare professionals. Workshops, role-playing, and simulations can help build competencies that enhance interprofessional collaboration [35].
2. **Standardized Communication Protocols:** Implementing standardized communication protocols, such as the SBAR (Situation, Background, Assessment, Recommendation) technique, can facilitate effective and consistent communication among providers. Training staff on these protocols can create a common language that reduces misunderstandings [36].
3. **Promoting a Culture of Teamwork:** Organizations can foster a culture of collaboration by promoting teamwork through team-building exercises and recognizing and rewarding collaborative efforts. Regular interdisciplinary meetings can create opportunities for shared learning and enhance the collaborative environment among staff [37].
4. **Patient-Centered Communication:** Encouraging physicians and healthcare providers to adopt patient-centered communication strategies can greatly enhance interactions. This includes actively listening, demonstrating empathy, and encouraging questions from patients [38].

Data Management and Patient Privacy Concerns:

In the contemporary healthcare landscape, the intersection of data management and patient privacy has emerged as a critical area of concern. With advancements in technology and the increased

digitization of health information, managing vast amounts of data presents both opportunities and challenges for healthcare providers. Patient privacy concerns, particularly in light of these advancements, necessitate a thorough understanding of the implications of data management practices in healthcare settings [39].

Data management in healthcare refers to the collection, storage, use, and sharing of patient information while ensuring its accuracy, accessibility, and security. Effective data management systems enable healthcare providers to deliver high-quality care, facilitate research, and streamline administrative processes. The healthcare sector is increasingly embracing electronic health records (EHRs), interoperability, and data analytics to improve patient outcomes and enhance operational efficiency [40].

One of the primary benefits of robust data management systems is the potential for personalized medicine. By analyzing patient data, healthcare professionals can identify trends, predict disease outbreaks, and tailor treatments to meet individual patient needs. For instance, data analytics can help identify patients at risk for certain conditions, allowing for early intervention and preventative measures [40].

Moreover, data management systems facilitate the sharing of information among healthcare providers, fostering collaboration and ensuring comprehensive patient care. The ability to access a patient's complete medical history can significantly improve diagnosis and treatment decisions. Given the complexities of modern healthcare, where patients often see multiple providers, seamless data sharing becomes essential to facilitate coordinated care [40].

Despite the benefits offered by enhanced data management, patient privacy concerns are paramount. Patients entrust their health information to providers under the assumption that it will be kept confidential and secure. The importance of maintaining patient privacy is further underscored by the ethical considerations inherent in healthcare practice: confidentiality is not just a legal obligation but also a cornerstone of the trust relationship between patients and healthcare providers [41].

The Health Insurance Portability and Accountability Act (HIPAA), enacted in 1996, represents a significant legislative effort to protect patient

privacy in the United States. HIPAA established national standards for protecting sensitive patient information and ensures that individuals have rights over their health data. However, as healthcare evolves, particularly with the advent of electronic health records and digital communications, the challenges of maintaining patient privacy become increasingly complex [41].

Several challenges arise in the realm of data management that may compromise patient privacy. First, the handling of large volumes of data increases the risk of unauthorized access and data breaches. Cybersecurity threats are rampant, with healthcare organizations being prime targets due to the sensitive nature of the information they manage. A successful breach not only jeopardizes patient data but also undermines the trust patients place in the healthcare system [42].

Data interoperability—the ability of different health information systems to work together—also poses significant challenges. While interoperability is vital for coordinated patient care, it can lead to inadvertently exposing sensitive information if security protocols are not consistently applied. When data is shared across various systems, maintaining uniform privacy standards becomes a complex endeavor. Additionally, the use of third-party vendors for data storage and management amplifies the risk of breaches since these external parties may not adhere to the same privacy regulations as the original healthcare providers [42].

Moreover, the use of artificial intelligence and machine learning in healthcare analytics raises ethical concerns around patient privacy. While these technologies can improve patient outcomes through predictive modeling and data analysis, they often rely on large datasets that may include sensitive information. Ensuring that algorithms are designed to respect patient privacy while still being effective presents a significant challenge [43].

Strategies for Enhancing Patient Privacy

To address the privacy concerns associated with data management, healthcare organizations must adopt comprehensive strategies that prioritize the security and confidentiality of patient information. These strategies can include:

1. **Robust Cybersecurity Measures:** Implementing advanced cybersecurity protocols, such as encryption, firewalls, and intrusion detection systems, can help mitigate the risks of data breaches. Continuous monitoring for unusual activity is also essential in detecting potential threats before they escalate [44].
2. **Training and Awareness:** Regular training programs for healthcare staff on data privacy and security best practices are crucial. Educating employees about the importance of safeguarding patient information and recognizing potential security risks can help prevent accidental breaches [44].
3. **Data Minimization:** Limiting the collection of patient data to only what is necessary for specific purposes enhances privacy protection. By minimizing the amount of sensitive information collected and stored, healthcare organizations reduce their exposure in the event of a breach [45].
4. **Strengthening Policies and Compliance:** Healthcare organizations must establish and enforce clear data management policies that comply with existing regulations such as HIPAA. Regular audits and risk assessments can help identify vulnerabilities and ensure adherence to privacy standards.
5. **Engaging Patients:** Empowering patients by providing transparency about how their data is collected, used, and shared can enhance trust. Through informed consent processes and clear communication about privacy practices, healthcare providers can foster a culture of trust [45].

The Future of Data Management and Patient Privacy

As healthcare continues to evolve, the importance of integrating effective data management practices with patient privacy concerns will only grow. Emerging technologies, such as blockchain and decentralized health information networks, may offer innovative ways to secure patient data while enhancing accessibility. Blockchain, for instance,

could provide a tamper-proof ledger of patient information that allows for controlled access while ensuring data integrity.

In addition, evolving regulatory frameworks will likely adapt to address the unique challenges posed by advancing technologies. Policymakers must consider the balance between encouraging innovation in healthcare technology and protecting patient privacy rights [46].

Developing Targeted Public Health Educational Programs:

Public health education plays a vital role in promoting awareness, preventing diseases, and enhancing the overall health of communities. As public health challenges evolve, particularly in the face of globalization, technological advancement, and shifting demographics, it becomes paramount for health organizations and educational institutions to develop targeted public health educational programs. These programs must cater to the distinct needs of diverse populations, address prevalent health disparities, and empower individuals with the knowledge and skills required to make informed health choices [47].

The first step in developing a targeted public health educational program is to understand the specific characteristics of the target population. This includes conducting thorough community assessments to gather data on demographics, health behaviors, cultural beliefs, socioeconomic factors, and existing health disparities. For instance, a program aimed at addressing obesity in a low-income neighborhood may differ markedly from one designed for a higher-income community. This information is crucial in tailoring the program's content and delivery methods to suit the audience's unique needs, values, and preferences [47].

Community involvement is an essential component of effective public health education programs. Engaging local stakeholders—such as community leaders, healthcare providers, schools, and non-profit organizations—ensures that the program reflects the community's priorities and cultural dynamics. Collaborating with these groups can provide insights into the barriers community members face in accessing health information and services. Furthermore, involving individuals from the target population in the program development

process fosters a sense of ownership, encouraging participation and engagement [48].

One effective strategy is to establish community advisory boards that consist of representatives from various demographic groups within the community. These boards can provide valuable feedback regarding program design, delivery, and evaluation methods. Additionally, utilizing community health workers (CHWs) who are familiar with the local context can further bridge the gap between health educators and the community, facilitating trust and enhancing program outreach [48].

The development of program content must consider cultural appropriateness and relevance, ensuring alignment with the community's values and needs. Health communication materials should avoid jargon and technical language that may alienate participants. Instead, materials should be accessible and straightforward, employing visuals, storytelling, and analogies that resonate with the target audience [49].

Furthermore, it is critical to ensure that the educational content addresses the specific health concerns identified through the community assessment. For instance, in communities with high rates of diabetes, educational programs might focus on nutrition, physical activity, and diabetes management. Alternatively, in areas with significant mental health challenges, programs could prioritize mental wellness education, highlighting coping strategies, stress management, and access to counseling services. Tailoring content not only elevates its relevance but also enhances the likelihood of participant engagement and retention [49].

In an increasingly digital world, the integration of technology in public health educational programs is indispensable. Technology can enhance the reach and efficiency of educational efforts, particularly when targeting younger populations or those who are tech-savvy. Online platforms such as social media, webinars, and mobile health applications can serve as effective channels for disseminating health information and engaging audiences [50].

For instance, social media campaigns can raise awareness about health issues, promote healthy behaviors, and facilitate community discussions. Additionally, the use of interactive tools such as podcasts or video-based learning platforms can cater

to different learning styles and preferences, enhancing participant engagement [50].

However, while technology presents numerous opportunities, it also poses challenges, particularly concerning access and equity. Digital literacy must be considered, as not all members of a community may have the skills or resources to engage with technology. Therefore, hybrid models that combine online resources with in-person educational opportunities can help ensure inclusivity [50].

An often-overlooked but vital aspect of developing targeted public health educational programs is the establishment of robust evaluation processes. Evaluating the effectiveness of these programs is critical to understanding their impact and guiding future interventions. Evaluation should occur at multiple levels, including process evaluation (assessing the delivery of the program), outcome evaluation (measuring short-and long-term impacts on knowledge, attitude, and behavior), and impact evaluation (examining broader community-level changes) [51].

Qualitative methods, such as focus groups and interviews, can provide insights into participants' experiences and perceived barriers. Additionally, quantitative methods, including surveys and assessments of health outcomes, help quantify program success. Collaborating with local universities or research institutions can enhance the robustness of evaluation efforts, providing access to expertise and resources for comprehensive assessment strategies [51].

Case Studies: Successful Integration in Health Administration:

Health administration is a multifaceted discipline that encompasses the planning, organizing, directing, and controlling of health care systems and services. In the context of evolving patient needs, technological advancements, regulatory changes, and the increasing emphasis on value-based care, the integration of various components within health systems has become paramount. Successful integration in health administration not only enhances operational efficiency but also improves patient outcomes, reduces costs, and optimizes resource utilization [51].

Case Study 1: Intermountain Healthcare, Utah

Intermountain Healthcare, based in Utah, is widely recognized for its pioneering approach to integrated health care delivery. The organization operates a network of hospitals, outpatient clinics, and specialty care facilities, serving millions of patients each year. One of the most significant strides in integration took place with the establishment of the “Patient-Centered Medical Home” (PCMH) model [52].

Integration Strategy

The PCMH model at Intermountain Healthcare emphasizes coordinated care through a centralized approach. Care teams collaborate across various disciplines, ensuring that patients receive comprehensive care tailored to their individual needs. Intermountain invested in robust electronic health record (EHR) systems that create a shared platform for information exchange among providers, allowing for real-time access to patient data [52].

Challenges and Solutions

One of the challenges faced by Intermountain was ensuring that all providers were adequately trained to utilize the new systems and understand the collaborative model. To overcome this barrier, the organization implemented a rigorous training program focused on enhancing communication skills and fostering teamwork. Regular workshops and simulations helped cultivate a culture of collaboration among healthcare professionals [53].

Outcomes

As a result of its integration efforts, Intermountain Healthcare observed significant improvements in patient care and satisfaction. There was a notable reduction in hospital readmission rates and emergency department visits. Furthermore, the organization reported an increase in preventive care measures, leading to better health outcomes for chronic disease management. Intermountain's success showcases the impact of a cohesive care model that prioritizes interprofessional collaboration [53].

Case Study 2: Geisinger Health System, Pennsylvania

Geisinger Health System has emerged as a leader in health administration integration through its

innovative use of technology and focus on value-based care. The organization's “Recipe” program is an excellent example of how integrated health services can drive improved patient outcomes while controlling costs [54].

Integration Strategy

The Recipe program combines clinical guidelines and best practices into actionable plans that align with patients' health goals. Utilizing data analytics, Geisinger can identify high-risk patients and tailor interventions accordingly. The integration of EHR systems with predictive analytics allows for seamless communication across specialties, ensuring that all providers are working towards common health objectives [54].

Challenges and Solutions

Geisinger faced resistance from some stakeholders who were reluctant to adopt new practices and technology. Addressing these concerns required a change management strategy focused on demonstrating the long-term benefits of integration. By engaging stakeholders through participatory meetings and encouraging feedback, Geisinger was able to foster a sense of ownership and accountability among providers [55].

Outcomes

The outcomes of the Recipe program have been striking. Geisinger reported a 20% reduction in overall health care costs while achieving better health outcomes for its patients. This case highlights the effectiveness of integrating technology, clinical best practices, and patient engagement strategies to enhance care quality while reducing expenses [56].

Case Study 3: Mayo Clinic, Minnesota

The Mayo Clinic is renowned for its commitment to patient-centered care and innovative health administration practices. One of its most notable initiatives involves the establishment of a comprehensive telehealth platform that integrates with traditional in-person services, improving access to care for patients, especially in rural areas [57].

Integration Strategy

Mayo Clinic's telehealth program incorporates advanced technology to facilitate virtual consultations, remote monitoring, and overall care

management. The initiative allows patients to connect with specialists from their homes, thereby reducing barriers to access. As part of the integration framework, the telehealth platform is fully integrated with Mayo's EHR system, ensuring that all patient records, test results, and treatments remain coordinated across various care settings [57].

Challenges and Solutions

The implementation of telehealth faced logistical challenges, including technological disparities among patients and concerns regarding the quality of virtual care. To address these issues, Mayo Clinic launched educational campaigns to inform patients about the benefits of telehealth. Additionally, they invested in user-friendly technologies to ensure that patients, irrespective of their tech-savviness, could easily navigate the platform [58].

Outcomes

The results have been overwhelmingly positive. Mayo Clinic saw a 50% increase in patient engagement through telehealth services, with higher satisfaction scores among patients who utilized the program. The integration of telehealth not only maintained continuity of care during the COVID-19 pandemic but also expanded access to specialists who otherwise may have been geographically restricted. This case study illustrates the transformative potential of integrating emerging technologies within health administration practices [58].

Future Trends and Recommendations for Health Professionals:

The rapid advancement of technology has increasingly influenced various sectors, especially healthcare. In this context, health informatics—the intersection of information technology, data management, and healthcare—has garnered substantial attention. Integrated effectively, it enhances patient care, optimizes workflows, and cultivates collaboration among healthcare professionals. The role of medical secretaries, traditionally focused on administrative tasks, has transformed within this milieu. As health informatics continues to evolve, there are several future directions and recommendations for health professionals, emphasizing the pivotal role of medical secretaries [58].

Health informatics encompasses a variety of components, including electronic health records (EHRs), telemedicine, clinical decision support systems (CDSS), and patient engagement tools. By harnessing these technologies, the healthcare sector aims to achieve improved patient outcomes, enhanced efficiency, and increased accessibility to health services. Transitioning to this digital-centric model necessitates the collaboration of all healthcare personnel, including clinicians, IT professionals, and administrative staff, with medical secretaries serving as vital intermediaries [59].

The role of medical secretaries has undergone a significant transformation from mere administrative assistants to integral players in the health informatics ecosystem. They are increasingly engaged in managing medical records, supporting communication channels between clinicians and patients, and contributing to data analytics efforts. As the profession evolves, it's crucial to identify future directions and actionable recommendations for integrating health informatics in the roles of health professionals and medical secretaries [59].

Future Directions in Health Informatics

1. **Increased Focus on Data Management and Analytics:** As healthcare organizations collect vast amounts of data, there will be a pressing need for professionals adept in data management and analytics. Medical secretaries will increasingly be entrusted with data entry, maintenance, and analytics, requiring ongoing training to maintain data integrity and leverage insights for improved patient care [60].
2. **Enhanced Interoperability Standards:** Health systems are often siloed, creating barriers to effective communication and data sharing. Future health informatics systems will prioritize interoperability, enabling seamless information exchange across various platforms. Medical secretaries will need to familiarize themselves with these standards to facilitate effective communication and ensure continuity of care [60].
3. **Telehealth and Remote Patient Monitoring:** The COVID-19 pandemic has accelerated the adoption of telehealth

solutions. Medical secretaries can play a critical role in coordinating telehealth appointments, managing virtual workflows, and ensuring that patient documentation is accurately captured and maintained. Future roles may expand to include support for remote patient monitoring technologies, integrating patient data into electronic health systems [60].

4. **Patient-Centric Care Models:** With an increasing emphasis on patient engagement and shared decision-making, health informatics will require a focus on accessibility and usability from the patient's perspective. Medical secretaries will need training to support and educate patients in navigating digital health solutions and optimize communication to enhance patient experiences [61].
5. **Health Information Exchange (HIE):** Efficient health information exchange can lead to improved patient safety and quality of care. As medical secretaries engage in HIE initiatives, they must understand policies governing patient data sharing and consent management, ensuring compliance with regulations such as HIPAA while also enhancing care collaboration [61].

Recommendations for Health Professionals

1. **Invest in Ongoing Education and Training:** Continuous professional development is essential in the rapidly changing landscape of health informatics. Healthcare professionals, including medical secretaries, should pursue relevant certifications and training programs in health informatics, data analytics, and emerging technologies, enhancing their competencies and contributing to more effective healthcare delivery [61].
2. **Foster a Collaborative Work Environment:** Encouraging interdisciplinary collaboration enhances the integration of health informatics into routine practice. Medical secretaries should be empowered to work closely with IT teams, clinicians, and administrative staff in the deployment of new systems and

processes. This teamwork is key to addressing challenges and maximizing the benefits of health informatics [62].

3. **Embrace Change Management Strategies:** Implementing new technologies and systems requires proactive change management. Health professionals should be trained in effective change management practices, promoting adaptability among staff and ensuring smooth transitions during technology adoption. Medical secretaries can spearhead initiatives to facilitate the ease of embracing new tools among team members [62].
4. **Enhance Communication and Patient Relations Skills:** As medical secretaries evolve into roles supporting patient engagement, their communication, and interpersonal skills will be crucial. Training programs focusing on patient relations and effective communication techniques will help medical secretaries better support patients in their healthcare journey [62].
5. **Integrate Ethical Considerations and Data Governance:** With the increasing reliance on health informatics, ethical considerations in patient data management must remain a priority. Health professionals, including medical secretaries, should be well-versed in data governance policies, addressing ethical concerns related to patient privacy, data security, and informed consent [62].

Conclusion:

In conclusion, the integration of health informatics and the role of medical secretaries within health administration represents a transformative approach to improving public health education. This synergy enhances the efficiency and effectiveness of healthcare delivery and empowers both healthcare professionals and the community with valuable data-driven insights. By effectively managing health information and streamlining administrative processes, medical secretaries play a vital role in facilitating communication and collaboration among healthcare teams.

Furthermore, the application of health informatics allows for the identification of community-specific health needs, enabling the development of targeted educational programs that resonate with diverse populations. As public health challenges continue to evolve, leveraging these integrated roles will be essential in fostering informed decision-making, promoting health literacy, and ultimately improving health outcomes across communities. Future efforts should focus on continual training and support for medical secretaries and informatics professionals, ensuring they remain at the forefront of public health administration.

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