



## **Systems Integration in Healthcare: Driving Social Impact Through Centralized Waitlist Systems for Safety-Net Providers**

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### **Abstract:**

Healthcare delivery in the United States continues to face persistent barriers to equitable access, particularly for underinsured and Medicaid populations. Safety-net providers operate within fragmented administrative and technical environments. Scheduling, referral management, and care coordination are often fragmented, resulting in inefficiencies, duplication of effort, and loss of referral continuity. The lack of coordination in this process creates disparities among these populations. This article examines systems integration using cloud-based, event-driven microservices. Centralized waitlist systems are presented as an example of integration technology that prioritizes patients based on clinical urgency rather than administrative order. The broader implication is that system integration extends beyond efficiency to generate measurable social value. Integrating technology with equity-focused design reduces wait times, improves continuity of access, and strengthens patient trust. Integrated data systems support policymakers in optimizing resource allocation and improving equity across healthcare stakeholders. This framework demonstrates how integration-driven architectures can be operationalized within safety net healthcare systems to improve both operational efficiency and equity outcomes.

### **1. Executive Summary**

Access to healthcare in America remains plagued by challenges related to equal access, especially for those patients enrolled in Medicaid or who are still underinsured. Providers of safety net facilities, which provide healthcare services to these categories of people, exist in an environment marked by inefficiencies due to the lack of an integrated system of administration. This causes delay in referrals and even loss of referrals in the process. The result is a vicious cycle of inefficiency that negatively impacts healthcare services provision. The current article presents an approach that uses cloud-based event-driven microservices as a solution for the above problems. Through the case example of centralized waitlist systems, which represent an easy-to-implement example, it becomes clear that integration of health information technology tools can produce a common platform for prioritization based on clinical urgency. Event-driven architecture allows timely updates for different providers, making the process transparent, non-repetitive, and efficient. The larger implication

here is that system integration can make an impact on society. Through the integration of technology with social justice issues, healthcare institutions can be able to shorten waiting times, increase consistency in services, and increase customer satisfaction. With such a model, safety net institutions will be able to offer services that are not only effective but also socially just, where the provision of specialist services is based on need alone.

### **2. Introduction**

The present-day health system in the U.S. comprises many tiers of care delivery, from primary care offices to referral systems for specialty care. The safety net providers, who tend to see an unusually high number of under-insured and Medicaid patients, usually function in disintegrated IT environments. Processes of scheduling, managing referrals, and coordinating care are usually siloed, thereby hindering the provision of care and affecting its outcomes negatively. The problems arise either because the

patients get lost somewhere along the way or because of unnecessarily long waiting times. It is well known that fragmentation poses one of the biggest hurdles for the successful delivery of healthcare services [1]. Without a uniform system for managing data, it becomes impossible for doctors to receive relevant information in a timely manner, thus making it difficult for decision-support systems to perform effectively. The issue of fragmentation does not exist only within the clinical process; it also spans administrative procedures, which makes it hard for practitioners to refer patients efficiently. These difficulties are exacerbated by systemic issues [3]. Healthcare and social service organizations face an overwhelming burden of unsustainably high patient loads and bottlenecks resulting from a disjointed structure. Providers within the safety net system, who are already constrained by their own resources, are even more vulnerable to these systemic issues. In the absence of comprehensive infrastructure, these organizations find it difficult to manage the increasing demand for specialist services without having the requisite capacity. Data interoperability problems persist [15]. In many instances, diverse health information technologies fail to operate in concert, preventing coordinated action and reinforcing fragmentation. Interoperability becomes especially problematic in the safety-net context, in which patients require the services of various providers who do not necessarily exchange information efficiently. In this situation, integration is not only necessary from a technical perspective but also from a sociological one. Cloud-based systems facilitate scalability and resiliency, thereby allowing systems to manage large-scale patient data on patients without having any impact on performance. Event-driven microservices architecture provides flexibility through asynchronous communication between systems. Wait-listing systems that are centralized highlight the benefits of integration. Through the creation of a centralized system for making referrals, it becomes easier for providers to prioritize patients based on clinical need instead of process order. Using an event-driven architecture means that any changes made in the wait lists will reflect the changes among all other participating providers. The patients who have urgent needs get prioritized in turn, while the provider gets visibility into the referral process. There is thus the possibility of making an impact on society through integration. This includes timely access to specialty care for patients who are underinsured or enrolled in Medicaid. Integration helps avoid situations of lost patients within different departments while improving their satisfaction with the process. By

aligning technology with equity goals, healthcare organizations can advance both efficiency and justice. This article frames the problem through the lens of health IT and cloud solution architecture, emphasizing how advanced integration strategies can produce tangible social impact. The article starts with insights on healthcare fragmentation and disparities, which is followed by the formulation of the problem. The following sections explore systems integration and its possible solutions, event-driven microservices, and an evaluation on centralized waiting list systems. The further implications in regard to social impact and equity are also discussed, along with some difficulties and factors to consider. The conclusion summarizes the key findings and highlights the opportunities offered by integration in transforming healthcare service delivery at safety-net facilities. Given how the issue is framed by its technical and social settings, it becomes evident that the solution requires addressing the two needs: improving system efficiency and promoting equality. Evidence of fragmentation [1], system pressures [3], and lack of interoperability [15] emphasizes the need for socially responsible innovations. In essence, the integration of cloud-based and event-driven systems is not only a technical advancement but also a means of ensuring equitable access to healthcare services.

### **3. Background: Healthcare Fragmentation and Inequities**

Healthcare delivery fragmentation continues to be a recurring problem that limits accessibility, efficiency, and equity. This phenomenon occurs in three interrelated forms, namely fragmentation due to information technology infrastructure, organizational barriers, and unequal access. Each form contributes to delays and coordination challenges across providers

#### **3.1 Disparate IT Systems**

Hospitals that provide safety-net services, community clinics, and specialty practices usually use different software platforms for EHRs and scheduling. In most cases, these platforms lack interoperability and do not allow effective information sharing. Lack of access to complete patient information leads to distributed systems without coordinated care delivery and poor management. Lack of unified infrastructure makes it difficult to deliver timely and high-quality medical services [1]. Furthermore, using proprietary software adds complexity as information is stored in different data formats.

### 3.2 Siloed Administrative Processes

Information transfer between different providers relies on outdated systems based on manual and partially automated procedures. Phone calls, faxes, and siloed portals continue to be used to exchange information among healthcare facilities. Such a strategy creates additional opportunities for misinterpretation and loss of information as well as the inability to follow up on activities. As a result, a patient may be lost between two specialists if the information is not transferred properly or follow-ups are not provided [3].

### 3.3 Inequitable Access

Both underinsured individuals and people receiving Medicaid are more affected by this. The priority for referral may be made based on convenience instead of urgency, leading to inequitable access to care. Those who are dealing with complicated health issues will wait for a longer period of time, whereas others will be scheduled earlier solely on the grounds of administrative priorities. Interoperability is another issue related to heterogeneous health information technologies, which increases the problem of inequity [15].

### 3.4 Steps Towards Integration

One way would be to use centralized care coordination systems, which can help reduce delays in care, increase efficient use of resources, and improve patient satisfaction. Such systems will help providers coordinate their actions better since all referrals will be made through a single portal and according to patient needs instead of administration. It would be advisable to develop cloud-based architectures, which could handle large amounts of patient information easily.

### 3.5 Social Impact

Underinsured and Medicaid-covered people may have better health if they gain access to specialist services without having to wait until problems arise. Integration enables specialists to maintain continuity of care by improving data sharing and improving patient satisfaction, as they will know when the procedure takes place, and help physicians save time and effort, as the process will be coordinated.

### 3.6 Conclusion of Background

Fragmentation in healthcare does not only represent technical difficulties that need to be addressed. Disparities in information technology solutions, isolated platforms, administrative processes, and

inequity of access contribute to this phenomenon and create conditions in which disadvantaged populations suffer more. All the above-listed evidence suggests the significance of overcoming this challenge by integrating different processes [1], [3], and [15]. A cloud-based framework can facilitate access based on clinical need rather than administrative convenience.

## 4. Problem Statement

Current healthcare IT architectures are not designed to manage the complexities of multi-provider coordination in real time. Safety-net providers, community clinics, and specialty care networks often operate on disjointed system infrastructures that fail to communicate effectively. These disjointed systems produce persistent coordination and workflow challenges across providers.

### 4.1 Lost Referrals

Patients get repeatedly referred without any outcome as a result of systemic, siloed infrastructure. Where electronic health records and scheduling systems do not interact effectively, referral details may not be transmitted to subsequent physicians. Consequently, patients wait for follow-ups or have to repeat the process themselves. The lack of a comprehensive information management system hinders efficient data exchange among practitioners and decreases the overall effectiveness of care coordination [1]. Inability to receive medical assistance results in a loss of confidence in the healthcare system.

### 4.2 Unbalanced Wait List Management

Specialized medical facilities use different methods for organizing their respective waitlists, with many of them operating in manual mode. Therefore, resource allocation is disproportionate as patients are prioritized based on ease of management instead of need. The pressure in the health and social care environment exacerbates this problem and contributes to the prolonged process of booking appointments [3]. Patients with less serious conditions may be seen before others, despite the situation.

### 4.3 Administrative Burden

The personnel spend an enormous amount of time matching patient lists across various platforms. Manually performing activities like making phone calls, sending faxes, and updating portals takes up precious time, leaving less time for treating patients directly. The inability to integrate data among

various health information technologies makes the task even more burdensome for personnel because it takes additional effort to guarantee that all data is complete and accurate [15].

#### 4.4 Equity Disparities

The most vulnerable patient groups, including the underinsured and Medicaid-covered individuals, endure extended waiting periods along with limited availability of specialty services. The referral process is influenced by the sequence dictated by bureaucracy instead of urgency. In consequence, people who require treatment can experience unnecessary complications due to delayed procedures. Furthermore, the inability to exchange data efficiently between dispersed systems contributes to the problem [3].

#### 4.5 Compounding Impact

These problems do not stand alone but are compounding factors in a system of inefficiencies that counteract the goals of safety net organizations. For instance, when referrals are missed, employees will need to use more time to reconcile their records, thus increasing the administrative workload. This slows down the process of managing the waiting list, thereby exacerbating any existing equity issues. Such compounding impacts reveal why disconnected workflows and IT structures are inherently flawed within contemporary healthcare systems.

#### 4.6 Strategic Threats

Aside from any immediate impact on patient welfare, disconnected workflows carry strategic risk to healthcare organizations. Poorly managed infrastructure diminishes scalability, decreases collaboration opportunities, and decreases resilience in times of public health emergencies. Providers unable to integrate data through different platforms find themselves ill-equipped when confronted by increased demands or the need to manage their services during times of crisis.

#### 4.7 Pathways to Resolution

Real-time integration technologies, where cloud-based, event-driven architecture plays a vital role, provide a potential avenue through which providers can mitigate the problems mentioned. Through such integration technologies, unnecessary duplication of services and efforts is minimized. Waitlists can be created centrally, which would facilitate prioritization according to patients' needs rather than making the process convenient for

administration. Technology can be integrated efficiently to ensure equity in service delivery.

#### 4.8 Conclusion for Problem Description

The presence of lost referrals, inefficient management of waiting lists, administrative challenges, and equity problems speaks volumes about the shortcomings of existing healthcare information technology infrastructures. The distributed systems' lack of these systems [1], the pressures placed on them [3], and the interoperability problems that exist [15] clearly highlight why it is necessary to integrate healthcare systems. Without integrated healthcare systems, vulnerable populations will continuously suffer from inequities in receiving their healthcare services.

#### 5. Systems Integration Solutions

Systems integration facilitates the transmission of information between different entities that were previously isolated. For safety-net organizations, whose providers serve overlapping patient populations, systems integration is more than a simple technological advancement; it is a fundamental requirement. There are several core elements of successful integration strategies that correspond to the challenges mentioned above.

##### 5.1 Interoperability through Standardized Protocols

One of the most fundamental elements of integration is interoperability. Through the use of standardized protocols like FHIR and HL7 messaging, interoperability allows the exchange of consistent patient information between organizations' EHRs. The lack of standardization restricts information to each organization's proprietary format, thereby making it impossible for providers to have access to a full record of patient history. Research suggests that interoperability improves patient outcomes by ensuring that information is transmitted seamlessly between systems [1].

##### 5.2 Unified Patient Identifiers

One issue common to disconnected workflows in healthcare systems is duplicate patient identification. With duplicate patient IDs, referrals become difficult to trace, and patients may not receive proper treatment. With unified patient identifiers, the ability to identify every patient uniquely becomes feasible. Duplicate patient information will no longer pose a problem for

medical practitioners, reducing administrative work. Tracking patients' progress becomes easier when their records are consolidated from several healthcare providers [15].

### 5.3 Centralized Scheduling and Waitlists

Specialty care clinics typically operate separate waitlists that are managed independently of other facilities. This results in inefficient allocation of medical resources, whereby patients are scheduled for consultation based on their arrival order at a facility, regardless of their clinical status. Centralized scheduling systems facilitate the consolidation of referral information into one centralized database, allowing for better triaging. Patients requiring immediate attention receive priority services, while healthcare professionals can view their referral processes [3].

### 5.4 Real-Time Alerts & Notifications

Integration allows for automatic notifications regarding any changes to the patient's condition or availability of new capacity. Real-time alerts ensure the providers receive such notifications immediately, which leads to quicker scheduling. For instance, the moment a specialty clinic becomes able to schedule more appointments, an integrated system is capable of notifying referring providers, thus ensuring the ability to schedule appointments without wasting time.

### 5.5 Impact on Safety-Net Ecosystems

Such capabilities have significant value in safety-net ecosystems. Providers who serve an overlapping population frequently encounter issues of redundancy, communication problems, and unequal access. Through integration, the problem can be addressed by creating a shared platform based on the patients' needs. In addition, because integration reduces administrative workload, the providers can devote themselves to providing direct patient care. Furthermore, thanks to integration, there will be no patient data siloing. Lastly, the integrated system creates one single list of wait times for all providers, thus ensuring equitable access.

### 5.6 Strategic Benefits

In addition to the immediate enhancements to patient care, integration creates resilience within the organization. Organizations that integrate their systems have the capacity to cope with spikes in demand and coordinate efforts in case of public health emergencies, as well as cooperate effectively with other organizations. Integration also enables

organizations to comply with regulatory requirements for information exchange. The strategic benefits ensure that safety-net organizations can provide effective and equitable healthcare services.

### 5.7 Conclusion of Systems Integration Solutions

Systems integration offers a comprehensive solution to the issues of fragmentation. With the use of standard protocols [1], patient identification numbers [15], centralized scheduling [3], and alerts, infrastructures can be created that are responsive, equitable, and resilient. Within the realm of safety-net organizations, such capabilities enable organizations to transform fragmented processes into systems where access to specialty care will be determined by medical necessity.

## 6. Event-Driven Microservices Architecture in Healthcare

The contemporary solution architecture of clouds paves the way for attaining integration objectives in healthcare. Event-driven microservices constitute a breakthrough in architecture that moves away from monoliths to modular and scalable designs. The features of event-driven microservices enable effective resolution of problems posed by a fragmented IT environment and ensure smooth and coordinated interaction between providers.

### 6.1 Decoupling of Services

Monolithic systems usually have multiple services integrated into a single application, which creates interdependencies that complicate maintenance and upgrade procedures. Decoupling services into separate entities addresses this issue by making each microservice accountable only for its particular function. Thus, one microservice is responsible for handling referrals, another for managing waiting lists, and another for notifying patients about appointments. This makes it possible to modify or enhance only one service at a time, which results in significant savings for safety-net providers when improving their referral process since there is no need to overhaul all other modules at once [1].

### 6.2 Asynchronous Communication

Coordinating healthcare often entails a series of activities that need to occur simultaneously. Event-driven architecture allows for asynchronous communication, whereby activities such as "referral submitted" or "patient scheduled" trigger

subsequent actions across different services without the need for synchronization. This ensures continuity of the process even if one of the services gets held up. In case of referral submission, for instance, the scheduling service can maintain referral records, and the notification service can inform healthcare practitioners without relying on synchronization of the central system [3].

### 6.3 Scalability

Cloud-based platforms scale out to meet the increased demand. Event-driven microservices allocate resources efficiently under varying load conditions. Scalability plays an important role when dealing with patients who belong to marginalized communities, where any delays in handling referrals can affect their lives significantly [15].

### 6.4 Resilience

Resilience is crucial for the reliable functioning of the healthcare system. Event-driven microservices improve resilience by isolating any potential failures. For instance, a failure in the patient notifications service will not stop the other services from operating, such as the referral processing and waiting list services. In other words, event-driven microservices reduce the risk associated with a single point of failure [1]. For safety-net systems, resilience becomes critical very quickly because any failure affects vulnerable communities disproportionately.

### 6.5 Equity and Responsiveness

With the integration of decoupling, asynchronous processing, scalability, and resilience, the system retains its responsiveness and equity. Patients are processed according to their clinical importance, while providers have access to real-time notifications that reduce redundancy and inefficiency. Event-driven architecture promotes technical efficacy through social responsibility, ensuring that healthcare institutions can offer reliable and fair services [3].

## 7. Case Example: Centralized Waitlist Systems

The use of a centralized waitlist for specialty care is an example that illustrates the practical implications of systems integration in the context of event-driven microservices.

### 7.1 Scenario

For quite some time, several safety-net clinics providing referrals to cardiologists and endocrinologists operated separate waitlists. These

lists were non-transparent, disparate, and mostly managed offline. Patients' appointments occurred according to the order they came rather than the level of medical necessity, resulting in discrimination in access.

### 7.2 Integrated Framework

An integrated cloud microservice infrastructure collects all referrals in one system. Every time there is a referral, events trigger updates within different services. Scheduling services update central waitlists, notification services notify clinicians about availability of capacity, and reporting services monitor patient progress. Asynchronous event processing enables a seamless workflow. Patients are triaged according to the clinical urgency of cases, their location, and insurance coverage status, not administration [10].

### 7.3 Outcome

Integration yields noticeable results. Patients receive faster appointments, as there are no delays in accessing specialist physicians. Clinics are working more efficiently, as there is even resource allocation and no duplication of tasks. Administrators have reduced workload in reconciliation, which allows them to attend to patients directly. Instant notifications provide visibility so that there are no unnecessary delays due to lack of timely information. At-risk groups experience equitable treatment since clinical needs influence appointments rather than administrative sequence [11].

### 7.4 Implications

The centralized method of the waitlist system offers guidance for other specialty services as well. Through an example showing how event-driven microservices can create a single workflow out of scattered activities, it shows the benefits of wider implementation. The integration of technologies that offer interoperability, scale, and resilience has a significant impact on patient outcomes and generates social change [3]. It is critical for technology innovation to address equity issues so that access to care is based on clinical needs only.

## 8. Social Impact and Equity

The integration of systems in healthcare generates social impact by addressing inefficiencies and inequalities that have negative impacts on vulnerable groups. This not only improves the technical aspect of systems but also contributes

positively towards patient experience, performance, and public health.

### 8.1 Improved Timelines of Referrals

In order to deliver effective healthcare services, the timely provision of healthcare services is essential. In fragmented systems, patients have to wait for weeks or months in order to get specialist services. This issue can be addressed through an integrated system that centralizes wait lists and allows coordination. Studies reveal that the reduction in wait times has led to less usage of emergency departments because patients are able to get care in time before their condition worsens [3].

### 8.2 Prioritization Based on Equity

Fragmented systems schedule patients based on their administration order, putting those who require urgent attention at a disadvantage. Through integration, scheduling is prioritized based on clinical needs. The centralized platform schedules patients depending on their clinical urgency, creating an equal opportunity to receive care. Equitable prioritization is highly significant in safety net systems because disadvantaged groups are more prone to the challenges created by fragmented systems [10].

### 8.3 Policy Decisions Driven by Data

The availability of aggregated data from an integrated system enables identification of opportunities to improve public health through policy decisions. It is important to conduct an evaluation of the referral rates, waiting times, and the results to develop strategies that will mitigate any inequalities. Having a better understanding of the inequalities in the healthcare sector, the decision makers will be able to allocate the necessary resources to the right areas.

### 8.4 Trust and Patient Engagement

Transparent processes foster trust between patients and providers. With the ability for patients to know that the referral process is being monitored and aligned with patient clinical needs, trust is built in the process. Trust supports adherence to care plans, since the patient will feel like he or she is being well taken care of. This transparency strengthens engagement and improves long-term outcomes [3].

### 8.5 Implications for Social Justice

In summary, integration is useful not only for efficiency but also for social justice. Through cutting down wait times, prioritization of services, informing policies, and building trust, integration

ensures that technology works toward equity. This way, disadvantaged groups receive their care without delay, and medical professionals are better equipped to deliver care.

## 9. Challenges and Considerations

Despite having several advantages, adopting integrated solutions requires careful planning due to various difficulties that need to be considered.

### 9.1 Privacy and Data Security Issues

The data in healthcare is extremely sensitive, which means strict compliance with regulations such as HIPAA is required. In order to prevent any leakage of health-related information, cloud computing environments will require strong encryption methods and monitoring. There should be no compromise on privacy because security violations lead to serious consequences [1].

### 9.2 Interoperability Limitations

An outdated electronic health record system could pose a problem in terms of integration due to the proprietary nature of technology. There may be a need for the implementation of middleware or some type of adapter for integration purposes. While the use of standards like FHIR and HL7 makes integration more effective, there is inconsistency in the adoption of these standards [15].

### 9.3 Change Management

Successful deployment of interoperable systems is heavily reliant on staff adoption. Staff have to be trained in new workflows and automation algorithms. Change management should facilitate employee adaptation to new systems through gradual implementation, trial, and maintenance. Training will enable the users to understand the significance of integration and utilize new technology effectively [3].

### 9.4 Equity Oversight

Systems require continuous monitoring to ensure that any unintended preference towards digital natives and speakers of English does not occur. Equity oversight requires monitoring of results among various groups and tweaking of the algorithm so as to eliminate any bias. In the absence of oversight, there will be chances of worsening the problem instead of solving it. Quality assurance is important in ensuring equity in systems [11].

### 9.5 Mitigation Strategies

There are some mitigation strategies that may come into play. The first strategy involves phased implementation, where systems are tested in controlled environments. There is also the use of

pilots whereby systems are put in place to ensure proper workflow processes. Training is important in ensuring staff adoption. Continuous quality assurance ensures equity in systems.

**Table 1. Dimensions of Healthcare Fragmentation [1, 3, 15]**

Dimension	Description	Impact on Safety-Net Providers
Disparate IT Systems	Separate EHRs and scheduling platforms with limited interoperability	Incomplete patient records, duplication, lost referrals
Administrative Silos	Manual referral processes via phone, fax, or isolated portals	Miscommunication, delays, staff burden
Inequitable Access	Prioritization based on administrative sequence rather than clinical urgency	Longer wait times for underinsured and Medicaid patients

**Table 2. Core Problems in Current IT Architectures [1, 3, 15]**

Problem Area	Explanation	Consequence for Patients and Providers
Lost Referrals	Fragmented systems fail to transfer referral data reliably	Patients repeat referrals, delays in treatment
Inefficient Waitlists	Independent, manual lists maintained by specialty clinics	Unequal distribution of resources, inequitable access
Administrative	Staff reconcile lists across multiple	Reduced time for direct care, increased burnout
Equity Gaps	Vulnerable populations disadvantaged	Preventable complications, systemic disparities

Capability	Functionality	Benefit for Safety-Net Ecosystems
Interoperability Protocols	Use of FHIR and HL7 for consistent data exchange	Seamless record sharing, improved continuity of care
Unified Patient Identifiers	Unique identifiers across providers	Prevents duplication, ensures accurate tracking
Centralized Scheduling	Aggregates referrals into a single platform	Equitable triage based on clinical urgency
Real-Time Alerts	Automatic notifications of status changes or new capacity	Faster scheduling, transparency, reduced duplication

**Table 3. Systems Integration Capabilities [1, 3, 15]**

**Table 4. Challenges and Mitigation Strategies [1, 3, 11, 15]**

Challenge	Risk Description	Mitigation Strategy
Data Privacy & Security	Sensitive patient data requires HIPAA compliance and secure cloud infrastructure	Encryption, access controls, continuous monitoring
Interoperability Limits	Legacy EHRs resist integration	Middleware, phased adoption, standards alignment
Change Management	Staff resistance to new workflows and algorithms	Training, pilot programs, phased rollout
Equity Oversight	Risk of bias favoring digitally connected or English-speaking populations	Continuous monitoring, demographic outcome tracking

## 10. Conclusions

Integration of the healthcare system using cloud-based, event-driven microservices is a scalable framework that addresses historical inequalities in specialty care access. Waitlist mechanisms are a good example of how technology makes it possible to consider patient needs rather than administrative processes, making sure that uninsured and Medicaid-insured patients get their care. It promotes efficiency and generates social value within the healthcare sector. Issues such as inequalities can be tackled by shortening wait

times, which helps improve health outcomes because of early interventions, and creating useful information for policymakers. The future lies in collaboration among the healthcare organizations, politicians, and technologists. By adopting an integrated architectural strategy, it will become feasible to progress towards efficiency and equity at once. The integration concept is not only an inventive one, but it is also one that promotes fairness. It makes safety-net organizations prepared to deliver resilient services.

### Author Statements:

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