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Research Priorities for Administrative Challenges of Integrated Networks of Care

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Abstract

In 2006, the Institute of Medicine advanced the concept of “coordinated, regionalized, and accountable emergency care systems” to address significant problems with the delivery of emergency medical care in the United States. Achieving this vision requires the thoughtful implementation of well-aligned, system-level structures and processes that enhance access to emergency care, and improve patient outcomes at a sustainable cost.

Currently, the delivery of emergency medical care is supported by numerous administrative systems, including economic; reimbursement; legal and regulatory structures; licensure, credentialing and accreditation processes; medico-legal systems; and quality reporting mechanisms. In addition, many regionalized systems may not optimize patient outcomes because of current administrative barriers that make it difficult for providers to deliver the best care. However, certain administrative barriers may also threaten the sustainability of integration efforts, or prevent them altogether.

This article identifies significant administrative challenges to integrating networks of emergency care in four specific areas: reimbursement, medical-legal, quality reporting mechanisms, and regulatory aspects. The authors propose a research agenda for identifying optimal approaches that support consistent access to quality emergency care with improved outcomes for patients, at a sustainable cost. Researching administrative challenges will involve careful examination of the numerous natural experiments in the recent past, and will be crucial to understand the impact as we embark on a new era of health reform.

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INTRODUCTION

In 2006, the Institute of Medicine (IOM) Committee on the Future of Emergency Care in the United States Health System published three reports.^{1–3} These reports described the emergency care system as stressed, overcrowded, and unable to appropriately respond to patient care demands. In 2009, the American College of Emergency Physicians (ACEP) released a National Report Card on the State of Emergency Medicine that reinforced these findings, with an overall grade for emergency care in America a dismal “C minus.”⁴

The IOM reports suggest that there is significant fragmentation of the emergency care system with poor coordination, inefficient use of resources, and because of these issues, suboptimal patient outcomes. The IOM recommended the development of “regionalized, coordinated, and accountable emergency care systems throughout the country.”¹ The word “regionalized” was used as a cornerstone of a vision for a new emergency care system with the following value proposition:

“Because not all hospitals within a community have the personnel and resources to support the delivery of high-level emergency care, critically ill and injured patients should be directed specifically to those facilities with such capabilities. That is the goal of regionalization.”¹

In 2009, however, the IOM’s regionalization workshop made some important clarifications to this definition, distinguishing regionalization and centralization.⁵ “Centralization” suggests the delivery of patients to an “expert” emergency care hospital, whereas “regionalization” simply emphasizes that patients receive appropriate care for their condition. Regionalization involves not only moving *patients* between geographically proximate facilities, but may also include moving *expertise* (cognitive skills) and at times, moving *technology* or other resources to certain patients (e.g., telemedicine, telephone consultation). The latter concepts offer the potential to reduce both expenditures and risks, without incurring the cost of a physical transfer. Through a combination of geographic- and knowledge-based regionalization, patients may benefit from the resources of centers with more experience (i.e., higher volumes of specific conditions), which may in turn improve outcomes.⁶

The IOM describes attributes of quality health care as “patient-centered, safe, effective, efficient, timely, and equitable.”¹ From a public health perspective, an effective emergency care system will 1) optimize access to emergency care, 2) deliver quality care, and 3) effectively allocate resources at a sustainable system-level cost.^{7–10}

The effects of spiraling costs of administrative aspects of health care in the U.S. have been well documented.^{11,12} True regionalization, or the creation of integrated networks across the entire health care continuum, can decrease costs as well as improve patient outcomes.^{13,14}

In our current system, administrative structures are created with certain boundaries in place. Examples may include: 1) hospital or facility boundaries, affecting clinical privileges, accreditation, and quality measures; 2) state lines, creating boundaries around professional licensure; 3) health insurance networks, affecting payment and coverage for participants; 4) medical malpractice systems, with issues of coverage limits, policy structures, number and size of limits available, and hospital acceptance of coverage; and 5) quality reporting and accreditation systems.

Regionalization efforts must consider how to overcome barriers within our current system. Forming affiliations across these boundaries will often invoke changes that permit the reduction or elimination of current boundaries.

This article is a product of a working group on administrative challenges from the 2010 *Academic Emergency Medicine* consensus conference “Beyond Regionalization: Integrated Networks of Care.” We provide a brief history of some administrative challenges to regionalization of emergency care services, and discuss these challenges through the lens of reimbursement structures, medical-legal and risk considerations, quality reporting, and legal/regulatory systems. We suggest a research agenda that involves studying “natural experiments” with changes in emergency care systems, and implementing demonstration projects to improve the delivery of emergency care through improving patient outcomes for populations that will benefit from a newly designed emergency care delivery system.

History of regionalization in the United States

Regional networks first developed in the 1950s around trauma, and several decades later also around acute myocardial infarction (AMI) and stroke.¹⁵ These networks were focused on prehospital care – bringing the patient to an expert hospital by ambulance. This disease-oriented model of regionalization has not progressed significantly since then. Current regionalization efforts still surround conditions such as trauma, AMI, stroke, cardiac arrest (including therapeutic hypothermia), and sepsis,^{16–23} as well as certain services such as burn and critical care.^{24,25} Many systems involve prehospital and hospital care, through accredited centers of excellence (such as the trauma system). However, many of the networks of hospitals that treat these seemingly “regionalized” conditions are themselves fragmented and not truly integrated. Often, hospitals must work with a variety of partners, each of which may have individualized, disease-specific data collection and reporting requirements.

Beyond these conditions and a general push for public health preparedness,^{26–29} there has been little development in creating truly integrated networks, despite a growing awareness of the need to reduce redundancy and leverage resources optimally.³⁰

During the 1990s, the anticipation of health reform and the pressures of managed care pushed hospitals³¹ to form systems through mergers and acquisitions. By 2000, 57% of private, acute care hospitals were part of hospital systems.³² This trend peaked around 2000 and began to fade shortly after, as hospitals’ initial financial goals were not realized and the pressures of capitation and health reform began to fade.³³ However, many hospitals remain in systems, ranging from fully integrated delivery systems such as Kaiser, to looser affiliations such as Catholic Healthcare, and Hospital Corporation of America (HCA).

The primary factors limiting integration of emergency care relate to the absence of explicit system-level objectives, a lack of adequate funding or effective mechanisms of resource deployment, regional and health system variability, competitive factors, challenges in partnering with hospitals and prehospital systems, and administrative systems designed around functional silos, rather than integrated systems.⁵ Hospitals may also resist integration due to the loss of revenue streams for services that have high margins, such as interventional cardiology services.

Current models may allow for research into regionalization’s effects on the medical-legal environment and patient outcomes. Existing microcosms may serve as a laboratory for assessing what is likely to occur when regionalization is attempted on a larger scale. Four examples of successful regionalization projects were listed in the IOM report – the Maryland Emergency Medical Services (EMS) and Trauma System; Austin/Travis County, Texas; Palm Beach County, Florida; and San Diego County, California – but certainly many more exist.

New research must identify administrative systems and processes that support quality care, reduce risk, improve outcomes, drive system efficiencies, and allow cost-effective deployment of both economic and workforce resources. Even now, in a relatively non-integrated emergency care system, there are insufficient data to guide decision-making, system development, and resource deployment. Efforts to regionalize emergency care are expected to exacerbate current issues and create new challenges. Since the process of integrating systems will merge previously segregated, competitive, or even conflicting elements, it is critical to evaluate both current and proposed systems to ensure that optimal and sustainable patient care benefit is achieved.

Recommendation # 1: Identify effective mechanisms that provide incentives to successfully develop and sustain integrated systems of emergency care, with the goal of reducing cost, and increasing access to quality of care

Background

Regionalization will require competitive hospitals or health systems to cooperate, rather than compete, and to share the information and strategies required to effect system integration. Historically, competitive systems have not shared sensitive information, which is often viewed as proprietary. Certain providers and facilities may resist regionalization for other economic reasons as well, as current for-profit and not-for-profit structures may legally prevent patient and revenue flows. For example, the 501(c)3 status of hospitals may be a barrier because of current prohibitions against “private inurement” – e.g., the operation of an organization for the benefit of private interests - being misapplied from the individual to the institutional level. For public institutions working with private facilities, there is also little ability to transfer public funds, including disproportionate share funds, graduate medical education funds, and local tax monies for uncompensated care. If one aspect of regionalization is knowledge movement through telemedicine, for example, reimbursement structures must support these objectives.

It is likely that not all systems of emergency care will integrate at the same time or in precisely the same way, due to differences in current systems, geography, and local resources. It is also vital to study how reimbursement structures should be customized for these differences, and what we can learn from historical attempts (failed or successful) to create integrated networks.

Looking forward, as part of large demonstration projects, the development of bundled payments and accountable care organizations will also create the impetus for system-wide change. These reimbursement structures must go beyond isolated episodes of care to truly enhancing coordination of care across settings.^{13,14} Studying the response to these incentives and the ultimate effect on patient care and outcomes will provide important information on both the intended and unintended consequences of the new reimbursement systems.

Research Questions

1. How do differences in state and local reimbursement and regulatory structures explain the level of integration of regionalized emergency care?
2. In regionalized networks, what types of reimbursement structures create optimal access to emergency care?

3. Which reimbursement structures produce the best outcomes in regionalized models?
4. How do differences in reimbursement and regulatory structures for different types of patients incentivize the development and sustainability of regionalized emergency care systems?

Recommendation #2: Identify medical-legal frameworks that support and facilitate sustainable networks of regionalized emergency care

Background

An ideal malpractice system reliably encourages attentiveness to quality care, reduces the incidence of preventable harm, and provides optimal outcomes while fairly compensating patients who are injured by deviations from care standards. In addition, the direct and indirect costs of an effective medical-legal system are palatable and sustainable at all levels of the health care system.

However, the current U.S. medical malpractice system faces significant challenges with both effectiveness and reliability. It does not consistently improve health outcomes,³⁴ and does not reliably benefit those who are harmed by medical negligence.³⁵ It may encourage defensive medicine: the ordering of diagnostic tests and procedures with the hopes of avoiding litigation,^{36,37} which is estimated to cost the 20 to 40 billion U.S. dollars annually in unnecessary health care expenditures.^{38,39} These effects, either alone or in combination, may be barriers to sustainable emergency care networks. Malpractice pressures have been shown to cause disruptions in the supply of physicians and alter their scope of practice.^{40,41} Current literature has documented breakdowns in the availability of patient care as a result of these disruptions and alterations in physician behavior.⁴² An example well-known to emergency physicians is the decrease in specialists taking ED call as a result of liability concerns.^{43,44}

Future regionalized models will require that patients or physicians cross state lines or facility boundaries to provide care, and failure to alter the current liability environment may negatively effect both the care of the patient and the success of regionalized care in general. For example, physicians may not be willing to keep patients in outlying facilities due to questions about their own facility's capability or their skill and proficiency with care, even with access to outside experts. They may revert to transfer of the patient, leading to increased cost and inconvenience for patients and families. Conversely, experts may be less willing to advise patient care from a distance due to a discomfort with the sending facility's personnel or resources, leading to the same costly, inconvenient, and unnecessary transfer decision. Concerns of this nature have been well identified in the telemedicine literature, and there is little evidence that future models will not face these same barriers.⁴⁵⁻⁴⁷

If these issues are not addressed, regionalization efforts may exacerbate current problems as health care providers and facilities are exposed to further potential liability depending on the location of the patient or the provider. Hospitals have already begun to reorganize their risk financing and their relationships with affiliated physicians based on the current costs of malpractice coverage.⁴⁸ Introducing further uncertainty into the existing system will likely alter the services those facilities and their physicians are willing to provide.

In order to address these barriers, evaluation of regionalized models must examine multiple elements of medical-legal risk, including: 1) limits of liability, 2) policy structure, 3) mechanisms for adjudicating claims, 4) hospital (or health care entity) acceptance of malpractice coverage (credentialing), 5) community standards of care, 6) physician practice

behavior, 7) attribution of accountability for malpractice, and 8) risk financing mechanisms and results.

Analysis of medical-legal metrics in successful regionalization examples will be important in establishing how metrics have changed (or how the legal system has evolved in response to regionalization as well) with more integration. Although no metrics are perfect, and many confounders exist (tort reform, for example), possibilities include: claims per 100,000 visits, medical board complaints, complaints based on violations of the Emergency Medical Treatment and Active Labor Act (EMTALA), complaints to The Joint Commission(TJC), total cost of medical malpractice (to the practice), cost as a proportion of total cost of care, claims with no indemnity payment, and indirect costs (e.g. defensive medicine, excessive utilization).

Research Questions

1. What medico-legal and risk-related considerations may be challenges to integrating networks of emergency care? How can existing models of regionalized care be used to identify potential legal barriers to the implementation of future systems?
2. What are properties of malpractice systems that promote highly effective regionalization models? What are the characteristics of regionalized models that have developed in those environments?
3. Do physicians practice more or less defensively in regionalized emergency care systems? What elements of regionalized systems permit physicians to practice less defensively (more in the interest of patient outcomes)?

Recommendation #3: Identify mechanisms for reporting quality measures that differentiate high-performing systems of regionalized emergency care

Background

High-performing systems establish meaningful and actionable definitions of quality care, and use quality measures to indicate successful performance. From an administrative perspective, quality reporting *mechanisms* (as distinguished from the metrics themselves) should then 1) use evidence-based quality measures, 2) address system-level reporting needs, 3) indicate proper attribution for different contributors to emergency care, 4) reflect accountability for compliance with standards of care (or reflect noncompliance meaningfully), 5) advise decision-making for resource allocation, 6) address short-term and long-term outcomes and selected processes of care, and 7) allow efficient capture of data.

In the current emergency care system, quality reporting mechanisms present numerous challenges, many of which will be exacerbated when integrating networks. Currently, quality reporting mechanisms involve reporting or extraction of data, documentation systems that facilitate data collection, and reporting tools. Multiple documentation modalities used in various ED, hospital, and prehospital environments make data extraction a variable, time consuming, and expensive process. Quality measures are reported on many levels: the physician and the service line or facility. Comprehensive patient-specific quality mechanisms have been slower to evolve, and not widely adopted. In addition, many data elements in the current system are not actionable or are reported without a meaningful patient-centered context.

As new quality reporting systems are developed, it will be important to study these new systems.

Research Questions

1. Is higher performance on quality measures related to system integration (i.e. the interconnectedness of a regionalized system) associated with better patient outcomes?
2. What are the unintended consequences of quality reporting mechanisms?

Recommendation #4: Identify efficient, cost-effective, regionalized systems for licensure, credentialing, and accreditation that facilitate timely delivery of quality emergency care

Background

Numerous regulations, laws, and processes influence the delivery of emergency care, while acting at many different levels of the system. At the state, hospital, and physician levels, requirements related to licensure, credentialing, and prescriptive authority are intended to insure that physicians are qualified to provide care (verifying education, background, experience, references, and qualifications); protect patients and health care entities (verifying medical malpractice coverage); and ensure prescribing capability (verifying proper Drug Enforcement Administration registration, etc.). At the physician group or business entity level, applicable laws (including anti-trust, anti-kickback, Stark physician referral, and the corporate practice of medicine) are intended to prevent anti-competitive behavior and prevent inappropriate business considerations from affecting patient care.

At the ED and hospital level, certification and accreditation is intended to encourage quality care, support safety, and improve outcomes by critically evaluating elements of hospital and ED performance. In addition, categorization efforts are designed to describe an ED's patient care capabilities to patients, health care providers, and hospitals.

Many well-intentioned administrative systems present obstacles to efficiently integrating networks of emergency care. For example, providers must apply for privileges and be credentialed at each site prior to evaluating and treating patients. Similar challenges exist for state medical licensure of physicians. As a result, physicians may be available for patient care, but without timely credentialing or licensing, patient access to care suffers.

Despite certain benefits, credentialing processes are time-consuming, cumbersome, and variable from hospital to hospital. Conservatism in the credentialing process is fueled both by accreditation standards and hospital fears of negligent credentialing lawsuits. Current efforts to increase scrutiny in physician credentialing may not produce proportionate patient care benefit, and add additional pressure to workforce challenges.

Processes, requirements, and interpretations vary between facilities. Curiously, the same provider may be granted full privileges at one facility, but challenged or denied at another, irrespective of significant differences in patient care demand, provider skills and training, patient outcomes, or hospital capability. It is unclear whether current systems will correlate with better patient outcomes in regionalized settings, or whether the cost and administrative burden will outweigh any benefits for access to care and patient outcomes.

Certification and accreditation processes frequently apply to hospital entities, affirming a segregated (and even competitive) approach, rather than a unified, system-level design. Fear or uncertainty related to legal or regulatory consequences may deter providers and hospitals from entering into pre-competitive, innovative arrangements. Currently there are no safe harbors that facilitate clinical integration programs on a scale that meaningfully embodies the IOM vision of integrated systems of emergency care.

The federal EMTALA law requires an appropriately thorough search for an emergency medical condition, and stabilization or transfer after these obligations are met.⁴⁹ As a result, patients are sometimes kept at a primary facility to satisfy the EMTALA requirement, when certain testing and consultation may be better accomplished at a receiving facility. A receiving facility may also duplicate testing either due to the passage of time, lack of trust in the primary facility's results, or both.

Research questions

1. With respect to credentialing, licensing, and accreditation requirements, which elements correlate best with:
 - a. Desirable patient care outcomes?
 - b. Optimal access to emergency care?
 - c. Efficient and sustainable costs?
2. How do differences in credentialing and licensure requirements affect the likelihood of implementing a regionalized emergency care system?
3. How have successful regionalized emergency care systems overcome current barriers related to credentialing and licensure? How can these examples inform future efforts? To what extent are these lessons generalizable and scalable?
4. How will meaningful use criteria for electronic medical records affect emergency care regionalization?

Moving forward—Looking ahead, several elements of the Patient Protection and Affordable Care Act may affect regionalization and integration of emergency care. Section 3504, the “Design and Implementation of Regionalized Systems for Emergency Care,” mandates that the Assistant Secretary for Preparedness and Response establish a pilot program to “design, implement, and evaluate innovative models of regionalized, comprehensive, and accountable emergency care, and trauma systems.”⁵⁰ Section 3023, the “National Pilot Program on Payment Bundling” states that the government will “establish a pilot program for integrated care during an episode of care provided to an applicable beneficiary around a hospitalization in order to improve the coordination, quality, and efficiency of health care services ... which will focus on ... chronic and acute conditions, as well as acute care inpatient services and emergency department services.”⁵⁰ Integration, not just between EDs at different hospitals, but also between EDs, hospitals, and community providers, will be part of the process of preparing for these and similar payment reforms. Different from the regionalization that has developed in the past, true integration requires innovative solutions and careful evaluation of the administrative systems that underlie them.

Although certain integrated delivery systems have developed models that could solve many of the challenges proposed by regionalization, it is inevitable that new challenges will arise. The structure of the integrated model will have important implications. The expectation is that bundled payments would go primarily to one institution or entity, which can then distribute the funds appropriately among individual providers or service lines. This is similar to the delegated capitation system used in California, which was associated with high rates (16% in one study) of retrospectively denied ED claims.⁵¹ Depending on the nature of regional affiliations and the relationships between emergency providers and their partners in an integrated system, the financial stability of the ED (and access to emergency care) may be negatively affected, rather than enhanced. Moreover, when payers integrate with providers, reimbursement for patients who present to an ED not affiliated with their system may be limited.

CONCLUSIONS

In transforming the current state of emergency care to the IOM's vision of a "coordinated, regionalized, accountable emergency care system," significant administrative issues must be addressed, including systems that deploy economic resources, and structures that provide timely access to professional skill and expertise. Newer concepts of regionalized emergency care involve integrated networks that deliver the right care to the right patient at the right time, producing an emergency care "web," rather than solely a funnel of patients to central facilities.⁵² Achieving this vision requires the critical evaluation of current systems, development of new systems, and modification or removal of ineffective systems, processes, and requirements that do not efficiently produce desirable outcomes for patients. This document identifies a research agenda that elucidates optimal administrative approaches for optimizing patient access to quality emergency care with sustainable costs.

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