Academic Emergency Medicine
Official Journal of the Society for Academic Emergency Medicine

ORIGINAL RESEARCH CONTRIBUTION

The Past, Present, and Future of Urgent Matters: Lessons Learned from a Decade of Emergency Department Flow Improvement

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Abstract

Over the past decade, emergency departments (ED) have encountered major challenges due to increased crowding and a greater public focus on quality measurement and quality improvement. Responding to these challenges, many EDs have worked to improve their processes and develop new and innovative models of care delivery. Urgent Matters has contributed to ED quality and patient flow improvement by working with hospitals throughout the United States. Recognizing that EDs across the country are struggling with many of the same issues, Urgent Matters—a program funded by the Robert Wood Johnson Foundation (RWJF)—has sought to identify, develop, and disseminate innovative approaches, interventions, and models to improve ED flow and quality. Using a variety of techniques, such as learning networks (collaboratives), national conferences, e-newsletters, webinars, best practices toolkits, and social media, Urgent Matters has served as a thought leader and innovator in ED quality improvement initiatives. The Urgent Matters Seven Success Factors were drawn from the early work done by program participants and propose practical guidelines for implementing and sustaining ED improvement activities. This article chronicles the history, activities, lessons learned, and future of the Urgent Matters program.

ACADEMIC EMERGENCY MEDICINE 2011; 18:1392–1399

Over the past decade, emergency departments (EDs) have encountered major challenges due to increased crowding and a greater public focus on quality measurement and quality improvement.[1] The passage and ultimate implementation of the Affordable Care Act of 2010 will likely result in 30 million additional people with insurance coverage. Data from Massachusetts health reform indicate greater ED utilization following reform efforts that increase the numbers of insured individuals.[2] Similar increases in ED demand may occur in other parts of the United States, especially in places where higher proportions of citizens move to Medicaid insurance.

ED crowding has been associated with poorer outcomes of care, including delays in important treatment, higher complication rates, and higher mortality rates.[3–9] To reduce crowding, some EDs have moved away from the traditional linear processing model of ED flow characterized by multiple queues, to parallel processing where patients are seen by a provider soon after arrival, and simultaneously, lab orders, medication orders, and radiology orders are placed to hasten workups, symptom control, and ultimately disposition. Known by various names such as physician-directed queuing (PDQ),[7] team triage,[8] or rapid entry and accelerated care at triage (REACT),[9] these and other models all focus on the rapid intake of patients into the ED system of care.

Some EDs have tried to reduce the use of the ED for nonurgent medical care, while others recognize the moneymaking capacity of EDs and have aggressively marketed their services by publicizing their ED wait times on billboards, smart phone apps, and the Internet. At least 40 EDs across the country have turned to scheduling appointments for patients for

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Received April 25, 2011; revision received June 10, 2011; accepted June 13, 2011.

This research was completed as part of the Urgent Matters project. Urgent Matters is a Robert Wood Johnson–funded project whose purpose is to improve emergency department flow. It is located in the Center for Health Care Quality at George Washington University School of Public Health and Health Services. We also thank the Agency for Healthcare Research and Quality for their support of this project.

The authors have no potential conflicts of interest to disclose.

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ISSN 1069-6563
PII ISSN 1069-6563583

doi: 10.1111/j.1553-2712.2011.01229.x

same-day service.[10] The ''specialty'' ED has been a viable model for the pediatric population for decades, while the demands of an aging U.S. population have given rise to geriatric EDs. Pharmacists, case managers, respiratory therapists, and flow facilitators have become integral members of the ED team. These and many other changes are evidence of the evolution of the ''emergency room'' becoming the ''emergency department,'' an enterprise characterized by a multidisciplinary care team whose skills are matched to patients presenting to a particular service line, be it fast track, midtrack, or the main ED.

The original grant for the Urgent Matters program was funded in 2002 by the Robert Wood Johnson Foundation (RWJF) to improve quality and enhance flow in the ED. Since that time, Urgent Matters has worked with hospitals throughout the United States as they seek to improve flow and enhance overall quality of care. This article chronicles the activities and lessons learned by Urgent Matters, which has been housed in the Department of Health Policy at George Washington University Medical Center. Urgent Matters has partnered directly with hospital EDs to improve flow and quality and then share the results and learning with other hospitals engaged in similar activities. Through research, data collection, education, outreach, and peer-to-peer sharing, Urgent Matters has served as a central hub for ED quality improvement thought and activity. Urgent Matters has and continues to identify and disseminate innovative approaches, interventions, and models. Through literature reviews, trade journals, social media, and word of mouth, Urgent Matters has sought out innovative approaches to ED care.

The next section will describe the work that has already been done, and the following section will explore the lessons learned through this work. The concluding section will identify plans for future directions for Urgent Matters.

URGENT MATTERS INITIATIVES

Learning Networks

Over its lifetime, Urgent Matters convened two hospital learning networks (collaboratives) that came together to reduce ED crowding and improve hospital flow. Urgent Matters staff provided expert consultation and technical assistance. The learning networks were composed of hospitals from across the United States of varying sizes and patient demographic compositions. As a condition of participation, hospitals agreed to implement process improvements, submit performance data, and participate in collaborative activities. All hospitals participated in periodic collaborative-wide meetings, and there were multiple site visits by the Urgent Matters team. The hospitals met monthly via conference call to share challenges and lessons learned from one another. Peer-to-peer sharing was encouraged and reported by Urgent Matters participants as one of the most valuable components of learning network participation. One Urgent Matters project leader working to improve her fast track took her chief executive officer (CEO) and chief nursing officer to a neighboring hospital (also in the learning network) to observe their fast track processes. This collaboration occurred despite the fact that the two hospitals involved were intense competitors.

The first 18-month learning network, led by Bruce Siegel, MD, MPH, the first principal investigator of Urgent Matters, included 10 hospitals and their communities and concluded in 2004. Project goals were to 1) assess the ''state of the safety net'' through a rigorous community assessment of demand and available resources and 2) find practical ways to relieve ED overcrowding in a safety net hospital within that community. In response to the call for proposals, the hospitals, all Level I or Level II designated trauma centers, were required to provide evidence of ED crowding and financial/insurance information that demonstrated their safety net status. They also identified a community partner who acted as a convener of the relevant stakeholders (providers, local government officials, and business and community leaders) for the assessment of the strength of the safety net in that community. The seminal report, *Walking a Tightrope*, includes still-relevant findings and methods.[11]

Table 1 identifies the hospitals that participated in Urgent Matters Learning Network I (LNI). Hospitals reported weekly on 17 key process variables and implemented hundreds of small rapid-cycle changes. Process changes focused on 1) patient flow facilitation and coordination, 2) early discharge, 3) boarding and inpatient bed assignment, and 4) diversion management and reduction.

At Grady Health System, the project team tested a wide range of strategies, from creating a new centralized system for entering physicians' orders for laboratory and radiology tests, to changing the location of the in-basket for the patient charts. Process changes made in fast track gave providers more autonomy and facilitated staff ''ownership'' of fast track patients. Grady also established a seven-bed Care Management Unit in the ED for patients with diagnoses of asthma, chest

Table 1
Urgent Matters Hospitals: LNI

Boston Medical Center Boston, Massachusetts
Bryan LGH Medical Center Lincoln, Nebraska
Elmhurst Hospital Center Queens, New York
Grady Health System Atlanta, Georgia
Henry Ford Health System Detroit, Michigan
Inova Fairfax Hospital Fairfax County, Virginia
St. Joseph's Hospital and Medical Center Phoenix, Arizona
The Regional Medical Center at Memphis Memphis, Tennessee
University Health System San Antonio, Texas
University of California at San Diego San Diego, California

LNI = Learning Network 1.

pain, congestive heart failure, or hyperglycemia who might otherwise be admitted to the hospital. During the year that these changes were implemented, Grady reduced its total throughput time by 22%.

Meanwhile, staff at University Health System focused on inpatient bed turnaround. Inpatients were boarded in the ED for prolonged periods for want of a clean bed. Working with the inpatient units and housekeeping staff, the project team was able to reduce bed turnaround time from 160 to less than 30 minutes. This contributed to an 8.5% reduction in total ED throughput time.

Ambulance diversion had been a problem for St. Joseph's Hospital and Medical Center. After engaging staff from throughout the hospital, the Urgent Matters team led a project to develop a set of metrics that served as an early warning system that the hospital was approaching maximum capacity (inevitably leading to the hospital going on ambulance diversion). By deploying the ''Capacity Code,'' St. Joseph's was able to reduce the amount of time spent on diversion, and more importantly, they were able to change the culture of the facility from one that reacted to diversion status to one that proactively attempted to avoid it.

Seeking to extend the reach of Urgent Matters, the RWJF and the Agency for Healthcare Research and Quality (AHRQ) joined forces to pave the way for the next Urgent Matters learning network. In autumn 2008, six hospitals (Table 2) were selected by the Health Research & Educational Trust, one of AHRQ's 15 ACTION partnerships (Accelerating Change and Transformation in Organizations and Networks), to participate in an 18-month learning network. The goals of Urgent Matters Learning Network II (LNII) were to 1) rigorously evaluate the implementation of strategies for improving patient flow and reducing ED crowding within the context of a hospital collaborative, 2) advance the development of performance measurement in the ED, and 3) promote the spread of promising practices to a wider audience and variety of hospitals.

Table 2
Urgent Matters Hospitals: LNII

Hahnemann University Hospital Philadelphia, PA
Good Samaritan Hospital Medical Center West Islip, NY
St. Francis Hospital–Indianapolis South Beech Grove, IN
Stony Brook University Medical Center Stony Brook, NY
Thomas Jefferson University Hospital Philadelphia, PA
Westmoreland Hospital Greensburg, PA

LNII = Learning Network 2.

The Urgent Matters staff provided technical assistance to the LNII hospitals as they activated change teams and developed and implemented strategies appropriate for their facilities (Table 3). The hospitals reported multiple benefits flowing from their participation in Urgent Matters LNII. These benefits included improved relationships between the ED and other departments, increased awareness of patient throughput issues from the housekeeping department to the board of directors and a greater impetus to address the issues, and improved accuracy of patient care documentation. The LNII hospitals also identified the need to standardize processes and procedures so the same care is predictable.

THE URGENT MATTERS TOOLKIT: STRATEGIES THAT WORK

The Urgent Matters toolkit is a collection of strategies and tools designed to target specific issues facing hospital EDs. This toolkit has been developed by hospitals across the country in conjunction with the Urgent

Table 3
Urgent Matters LNII Strategies

Hospital	Strategy Name	Description
Stony Brook University Medical Center	CT coronary angiogram	Use of CTCA to rule out low-risk chest pain patients
	Consult process	Standardized process with tracking and accountability for ED consult requests
Good Samaritan Hospital Medical Center	Improve time to treatment for ESI 3 patients—''MidTrack''	A process similar to fast track for select chief complaints within the ESI Level 3 triage category
Thomas Jefferson University Hospital	Fast track improvement initiative	Reducing turnaround time for fast track patients
Hahnemann University Hospital	5-level triage	Implementation of ESI
	Renewal of fast track program	Reducing turnaround time for fast track patients
Westmoreland Hospital	ED/inpatient communication tool	Hand off report form and process improvement
	Build a bridge	Improved communcation between the ED and the rest of the hospital
St. Francis Hospital	Standardize arrival to bed process	Implement ESI and standardize triage process

CTCA = computed tomography coronary angiography; ESI = Emergency Severity Index; LNII = Learning Network II.

Matters national program office at the George Washington University Medical Center. There are currently 55 strategies and 95 tools available for download on both the Urgent Matters[12] and RWJF websites.[13] Many of the toolkit strategies originated from Urgent Matters LNI and LNII. Today, toolkit strategies originate from Urgent Matters e-newsletter articles and webinars, trade journals, word of mouth, and social media. Urgent Matters is continually working to improve, update, and add to the toolkit.

Each toolkit strategy includes information on the hospital where the strategy was piloted, associated tools, and a description of the strategy implementation and outcomes. Strategies are organized into five categories: input, throughput, output, communications/information technology, and scheduling/staffing. The most recent strategies added to the toolkit include implementing five-level Emergency Severity Index (ESI) triage, standardizing and improving the ED consult process, and integrating ED registration and triage to improve door-to-bed times.

Tools can be found to help with the boarding of admitted patients in the ED. The Full Capacity Protocol, pioneered by Dr. Peter Viccellio of Stony Brook University Medical Center, advocates placing patients in the hallways of the inpatient units, where nurse-to-patient ratios and care processes are more in line with patients' needs.[14]

Segmenting patients on the front end during triage has been shown to improve ED flow.[15] After examining left-before-being-seen data at Good Samaritan Hospital Medical Center, Dr. Adhi Sharma and the Good Samaritan team realized that a significant portion of the walkouts were patients triaged to ESI Level 3. The MidTrack[16] service line was established to expedite care for this group of patients, whose conditions were too complex for a typical fast track and not acute enough to be treated emergently during times of high census.

Urgent Matters E-newsletter

Established in December 2003, the Urgent Matters e-newsletter is a bimonthly publication read by approximately 3,400 people in the ED community. Each issue builds around a theme and presents three types of articles: best practices, which features a well-developed practice, approach, or structure and always includes a tool; innovations, which highlights novel approaches to ED care, and perspectives, which shares insights and opinions from thought leaders within the ED community. Recent issues explored at-risk populations, boarding, and quality improvement techniques.

Urgent Matters Webinar Series

Urgent Matters sponsors a webinar series highlighting the work of ED leaders and innovators. In recent years Urgent Matters webinars have gained quite a following, consistently attracting between 300 and 500 participants. Urgent Matters conducts an evaluation after each webinar to assess learning and participant interest and to identify future topics. In addition, Urgent Matters offers continuing education credits to participants. Recent topics included rapid intake, the regionalization of emergency services, improving front-end operations, and the geriatric ED. Urgent Matters webinar recordings and presentation materials are available for download on the Urgent Matters website (urgentmatters.org).

National Conferences

Urgent Matters has sponsored several conferences. In 2004 and 2005, Urgent Matters brought together ED crowding experts from around the country for discussions of innovations, models, and processes for improving patient flow and reducing ED crowding. Hospital ED leaders and patient flow experts shared information about improving patient satisfaction, increasing organizational capacity, and creating hospital-wide improvement efforts.

The Urgent Matters Policy Forum: *Creating a Framework for Transparent and Accountable Emergency Departments in America* was held in the spring of 2010. Susan Dentzer, editor-in-chief of *Health Affairs,* led clinicians, policy planners, and thought leaders in the field of emergency medicine in an interactive discussion about policy development, the role of quality improvement in health care, and the future of ED care. ED luminary Dr. Arthur Kellermann and RWJF Senior Vice-President Dr. John Lumpkin delivered keynote addresses highlighting the critical role that EDs play in the health of the nation and the invaluable community service that they provide.[17] Discussions centered around the importance of examining and measuring health care quality and emphasizing the link between public reporting, transparency, and policy.[18]

Performance Measure Development

Defining and measuring ED operational performance is a prerequisite for quality improvement. Creating a standardized set of ED performance measures will enable industry-wide benchmarking of ED operations, as well as provide a basis for public reporting.

Urgent Matters staff participated in the development of the first comprehensive lexicon of emergency services. In 2006, Urgent Matters joined emergency medicine providers from throughout the United States at the First Performance Measures and Benchmarking Summit. The goal of the summit was to develop ED performance measures and definitions. Urgent Matters also participated in the Second Performance Measures and Benchmarking Summit, held in February 2010, which updated and expanded this work that is sure to become a source document for ED measurement.[19]

Urgent Matters also worked closely with the Centers for Medicare and Medicaid Services (CMS) to develop the standardized ED performance measures. Through presentations to CMS and participation on a CMS technical expert panel headed by Dr. Dale Bratzler of the Oklahoma Foundation for Medical Quality, Urgent Matters provided technical assistance needed to develop the ED performance measures. Urgent Matters efforts continued through the National Quality Forum (NQF) endorsement process, as well as the CMS public comment period that preceded their inclusion in the CMS quality data reporting programs. Urgent Matters performed a first-of-its-kind field test to generate information on the clarity of the measures and the

Table 4
ED Performance Measures

ED Arrival to Departure	
Admitted Patients	Median time in minutes from ED arrival to time of departure from the ED for admitted patients.
Discharged Patients	Median time in minutes from ED arrival to time of departure from the ED for discharged patients.
Admit Decision Time to Departure	Median time in minutes from the decision to admit the ED patient to the facility to the time the patient leaves the ED.
Time to Pain Management	
Admitted ED Patients	Median time in minutes from ED arrival to the time of the first pain medication administration for patients admitted to the facility with a diagnosis of long bone fracture.
Discharged ED Patients	Median time in minutes from ED arrival to the time of the first pain medication administration for patients discharged from the facility with a diagnosis of long-bone fracture.
Time to Chest X-ray	
Admitted ED Patients	Median time in minutes from the time of chest x-ray order to time of chest x-ray completion for ED patients admitted to the facility.
Discharged ED Patients	Median time in minutes from the time of chest x-ray order to time of chest x-ray completion for ED patients discharged from the ED.

benefits and burdens of the ED performance measures (Table 4).[20] The CMS cited this study in the Federal Register.[21]

These measures will begin affecting the CMS annual payment determinations for all hospitals in 2013–2014.[22] The CMS HITECH (Health Information Technology for Economic and Clinical Health Act) program currently includes the ED measures. Hospitals that collect and report these measures electronically will receive incentive payments in the upcoming year (2012).[23]

LESSONS LEARNED AND THE URGENT MATTERS CONCEPTUAL FRAMEWORK

The conceptual framework giving structure to early Urgent Matters activities included principles drawn from the domains of hospital culture, leadership, and quality improvement. Implementing the principles and practices drawn from these fields, Urgent Matters worked extensively with hospitals to identify specific processes that would facilitate improved patient flow and quality improvement, were relatively easy to implement, and would not require substantial financial resources. The Urgent Matters Seven Success Factors are guidelines drawn from the lessons learned by our early hospital experiences as they worked to achieve sustainable quality improvement. The Factors now provide the basis for all Urgent Matters activities.

THE URGENT MATTERS SEVEN SUCCESS FACTORS[24]

Hospital Culture

1. Recognizing That ED Crowding Is a Hospital-wide Problem, Not an ED Problem. One of the major causes of crowding is boarding of patients in the ED.[25–27] The ability to move patients out of the ED in an efficient and timely manner requires cooperation between many different units throughout the hospital.[28] Urgent Matters has taught hospitals that opportunities for improvement in quality and flow should be conceived, planned, implemented, and evaluated through the lens of one integrated ''hospital team.'' This type of thinking differentiates the ''push'' cultures (where EDs toil to push patients upstream to inpatient beds, which takes away from other active issues) from the ''pull'' cultures (where inpatient floors actively pull patients upstairs, reducing the administrative burden on the ED for initiating transitions in care).[29] For many hospitals, effectively (and repetitively) communicating the belief that the solution to crowding is a hospital-wide effort, rather than the predominant belief that the ED ''can handle it all'' may be the starting point for much process improvement.

2. Making Transparency an Organizational Value. Urgent Matters hospital teams have found that an important component of creating the impetus for change, as well as fostering quality improvement sustainability, is sharing measurement results, strategies for improvement, and outcomes widely throughout the hospital. One Urgent Matters hospital leader advised other hospitals to continue collecting and sharing data, even though you do not like what the data show. Staff know where quality lapses exist, and ''shining a light'' on the problems may signal hospital leadership's willingness to address the issues. A culture of transparency can help build ownership and accountability for change.

3. Building Multidisciplinary, Hospital-wide Teams to Drive Quality Improvement. Care provided to hospitalized patients is performed by individuals from a variety of professional backgrounds in a highly technological environment. Comprehensive coordination and communication between providers helps ensure higher levels of quality and safety. The Joint Commission has identified communication failures as the leading cause of sentinel events in hospitals.[30] Urgent Matters has long advocated for improving the processes of care,

which require a similar level of coordination and communication between the many disciplines involved in provision of care. The formation and utilization of multidisciplinary teams may enhance both the provision and improvement of patient care.

Leadership

4. Guaranteeing Top Management's Support. Reducing ED congestion and improving hospital patient flow must be priorities at the highest level of the hospital and system, and chief operating officers should be vocal in their support for these initiatives. Spaite et al.[31] identified executive leadership support as essential to successful process improvement. Because senior leadership support is essential to quality improvement, Urgent Matters required senior leadership representation at collaborative-wide meetings, and during site visits, a meeting with the hospital CEO was always on the agenda. Process improvement does not occur rapidly, and senior management's support for initiatives may peak early and then wane. Urgent Matters guidance to project team leaders has been to keep senior leadership engaged and challenged throughout the life of the project by frequent updates and requests for assistance.

5. Recruiting a "Champion." Change requires champions: individuals who will effectively advocate adoption of the patient flow improvement. Champions are the boundary spanners who can access and influence nursing, medical, and administrative leaders. When implementing a sepsis management bundle, Schoor[32] identified four functions performed by a champion: removing barriers, providing resources, monitoring progress, and placing the local change in the larger organizational context. Physician champions involved in a multisite effort to conform to evidence-based guidelines for prescribing antibiotics were effective because of the respect they held in the local medical community, they were seen to be knowledgeable about the issues involved, and they actively role modeled the desired prescribing patterns.[33] The champions act as "early adopters" of the process improvement and lead the staff to new levels of quality.

Quality Improvement

6. Using Formal Improvement Methods. Urgent Matters found that rapid cycle change (RCC) is an effective tool for quality improvement in EDs. Using RCC, a change technique characterized by frequent, small tests of change, hospital staff avoid many political and financial hurdles inherent in large-scale change attempts. This learning from experience approach allows teams to build quickly on successful results. Successful changes can then be evaluated and modified as needed for dissemination to the larger organization. From a culture change perspective, RCC optimizes front-line staff's opportunities to initiate and participate in all aspects of the quality improvement process.

7. Committing to Rigorous Metrics. Performance measurement is essential to process improvement.[34] Relative to other service and manufacturing industries, health care providers have only recently begun to integrate the collection of performance data into their day-to-day operations.[35] Hospital staff must not only identify key performance measures, but must also collect and report them on a consistent basis. Although data collection is a significant challenge for many hospitals due to motivation or capacity, such data will ultimately drive important decision-making and increase executive support. When staff discussions about current processes include statements such as "I wonder if …" or "I wonder why …" staff should reflexively think of measurement.

THE WAY FORWARD

In October 2010, Jesse Pines, MD, MBA, assumed the role of principal investigator for the Urgent Matters program. Under his leadership, Urgent Matters continues to support ED quality improvement through webinars, e-newsletters, website and toolkit development, and increasingly through research. Recognizing that inpatient boarding is a leading cause of crowding and that boarding is not always associated with a lack of inpatient beds, the Urgent Matters team is developing a survey, similar to the AHRQ Hospital Survey on Patient Safety Culture, that will help hospital leaders assess the culture of hospital transitions in care. This type of tool will aid hospital leaders as they seek to improve their patient flow.

Using the data collected through the learning networks, Urgent Matters staff are collaborating with faculty from the Wharton School of Business at the University of Pennsylvania to develop a conceptual model of crowding. This tool will assist hospitals to more accurately measure the effects of improvement strategies.

Few departments within a hospital influence the efficiency and effectiveness of other departments as much as the ED does. By demonstrating a commitment to high-quality, efficient, patient-centered care, the ED is strategically located within the hospital enterprise to demonstrate leadership for hospital-wide quality improvement. For the past decade, Urgent Matters has facilitated and empowered EDs to act as change agents for improvement and will continue to do so in the turbulent years ahead.

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