

EMERGENCY DEPARTMENT CROWDING: EXPLORING BIAS AND
BARRIERS TO EQUITABLE ACCESS OF EMERGENCY CARE

A Thesis
Submitted to
the Temple University Graduate Board

In Partial Fulfillment
of the Requirements for the Degree
MASTER OF ARTS

by
Claire Shaffer
May 2018

Thesis Approvals:

Providenza Loera Rocco, JD, MSW, M.Bioethics, Center for Bioethics, Urban
Health, and Policy

ABSTRACT

The emergency department (ED) has often been considered the safety net of the American healthcare system. It earned this distinction because every person in the United States has access to a medical screening exam and stabilization at an ED regardless of their ability to pay. Unfortunately, over the past several decades, decreasing numbers of EDs and inpatient beds, coupled with increasing rates of ED usage, has led to crowding of EDs across the country. Crowding leads to unsafe conditions that may increase morbidity and mortality for patients, or cause patients to leave the ED without being evaluated by a physician. Essentially, crowding causes a barrier for patients to access their right to emergency evaluation. The problem of crowding is most pronounced in large urban communities, and these already frequently underserved patients suffer the most from the crowding burden. The main cause of crowding seems to be the boarding of admitted patients in the ED, however many often cite high rates of non-urgent patients presenting to the ED as a cause of crowding. Some have even suggested diverting non-urgent patients to help solve the problem of crowding.

I became interested in this topic due to crowding concerns and initiatives to decrease the number of patients who left without being seen at my own institution. As I reviewed relevant research, I became aware of my own misconceptions and noted a trend of literature suggesting non-urgent patients are not the cause of crowding. Drawing on research from many different sources, paired with evaluation based on principles in bioethics, I have come to several conclusions. I believe the systematic diversion of non-urgent patients is unsafe, and that the unequal burden of ED crowding on urban communities represents an unjust barrier in access to care. We must continue to carefully

research the demographics of patients frequently presenting to EDs to avoid perpetuating stereotypes about which types of patients are responsible for crowding. We should also look for ways to ease the crowding burden in urban communities. Additionally, we should take a qualitative assessment of our individual communities to determine if there are any particular reasons in our community that people choose to use the ED rather than other healthcare options. I believe these suggestions can be an important addition to the efforts already in motion to help reduce ED crowding and provide equitable access to emergency medical evaluation.

TABLE OF CONTENTS

ABSTRACT	II
CHAPTER 1: INTRODUCTION.....	1
Defining Crowding.....	2
Is Crowding Dangerous To Patients?.....	3
CHAPTER 2: CAUSES AND MISCONCEPTIONS SURROUNDING CROWDING ...	6
Confirmed Causes Of Crowding	6
Misconceptions About ED Crowding	8
CHAPTER 3: ETHICAL CONSIDERATIONS	12
Crowding Disproportionately Affects The Urban And Underserved.....	12
Diversion Of Non-urgent Patients Away From The ED	15
Dangers Of Current Stereotypes.....	17
CHAPTER 4: SOLUTIONS AND CONCLUSION	20
Reassessing Solutions.....	20
Conclusion.....	26
REFERENCES	27

CHAPTER 1: INTRODUCTION

While there is an ongoing debate in our country about whether access to healthcare is a right for all, for the past 30 years it has been law that emergency medical care should be accessible to all people. Since the Emergency Medicine Labor and Treatment Act (EMTALA) was enacted in 1986, all people in the United States have the right to a medical screening exam and stabilization at an emergency department regardless of their ability to pay (“Examination and Treatment,” 2010). While I am proud to be entering a specialty that provides care regardless of ability to pay, as a student of bioethics I feel I would be remiss if I did not also consider the ethical ripples and ramifications of this law. The government has mandated that everyone receive medical attention in the emergency department if necessary, but as a nation have we taken the steps necessary to ensure that this care remains timely, accessible, and equitable? I will attempt to discuss briefly the current problem of emergency department crowding, the dangers and inequities it creates, and proposed causes of crowding. I will focus on the problems of inpatient boarding in the emergency department and non-urgent visits, with an emphasis on the ethical dilemmas of diverting non-urgent patients. Additionally, I will discuss the inequitable barriers emergency department crowding poses to urban and medically-underserved communities and possible research areas that can address these issues.

Defining Crowding

For years it has been obvious that crowding is an issue in many of our nation's emergency departments (EDs). In 2014, the CDC recorded 141.4 million emergency department visits (Rui & Kang, 2014), up 28% from the 110.2 million visits recorded in 2002 (McCaig & Burt, 2004). Population size experienced a less severe increase of 10.7% over this same time, growing from approximately 287 million to 318 million (United States Census Bureau, 2010), (United States Census Bureau, 2018). In contrast, the number of hospital beds per 1,000 persons, as well as the number of emergency departments, has been slowly declining (American Hospital Association, 2016). Additionally, gaps in medical coverage leave many patients feeling the ED is the only place they can go for medical attention, regardless of what type of care they need. The overall phenomena of increasing rates of emergency department use per person, combined with a fall in the number of inpatient beds and EDs, has resulted in the crowding of many emergency departments (GAO, 2003). More people are seeking emergency care than ever before and many times there is nowhere to admit sick patients. This results in patients "boarding" in the ED, unable to pass on their valuable treatment space to sick patients still in the waiting room or some patients being cared for in a hallway while they await transfer. More and more often overcrowded hospitals are forced to go on "divert" status, which tells local ambulances to take any stable patients elsewhere for care until the wait time and patient burden at a certain hospital becomes more manageable.

To address and attempt to define the problem of crowding, in 2003 the Government Accounting Office (GAO) conducted a large analysis of EDs across the United States (2003). As measures of crowding they evaluated the amount of time hospitals spent on divert status, the amount of time patients spent boarding in the ED, and the number of patients leaving without being seen. They stated that “two of every three emergency departments reported going on diversion at some point in fiscal year 2001, a much smaller portion- nearly 1 of every 10 hospitals- was on diversion more than 20 % of the time” (GAO, 2003, p. 3). Despite increased attention to the issue, a follow-up analysis in 2009 reported that the problem of crowding continued and that many patients were waiting longer than the recommended timeframe to see a physician (GAO, 2009). From these combined reports, we can see that crowding is a pervasive problem in US EDs that has been difficult to resolve, or even slow, its progression.

Is Crowding Dangerous To Patients?

What are we to do about this problem of crowding? Perhaps the first question we must ask is whether it constitutes a simple annoyance or a true threat to patient safety and barrier to the patients’ right to access emergency services? The short answer to this question is: yes, crowding is dangerous to patients because it can cause increased mortality, as well as act as a barrier for patients seeking care.

ED crowding is associated with an increased risk of in-hospital mortality and a higher probability of leaving the ED against medical advice or without being seen by a physician (Bernstein et al., 2008). In fact, there is a 10-day mortality relative risk of 1.34 if a patient was seen on a crowded versus non-crowded shift (Bernstein et al., 2008). The GAO reported that many patients with immediate or emergent conditions were not seen

by a physician within the recommended wait times of 1 and 1-14 minutes, respectively (2009). Unfortunately, the average wait time for these condition severities was found to be 28 minutes for immediate (73.9% of visits exceeded recommended timeframe) and 37 minutes for emergent (50.4% of visits exceeded recommended timeframe) (GAO, 2009).

A trend of patients leaving without being seen is also a dangerous phenomenon. The GAO estimated the median percentage of persons who left before medical evaluation was 1.4%, but that in some hospitals almost 5% or more of emergency department patients left before being seen by a physician (2009). One study conducted in a busy public ED concluded that 46% of patients who left without being seen were judged to need immediate medical attention, and an additional 29% needed care in the next 24-48 hours (Baker, Stevens, & Brook, 1991). The majority of patients left because they felt too sick to continue waiting at the ED (Baker et al., 1991). Of the patients who left, 11% were hospitalized within a week, compared to 9% of patients who waited, demonstrating increased morbidity in those who left without evaluation (Baker et al., 1991). While this study is older, it marks an important understanding of the problem of patients who leave without being seen. A more recent study evaluating this trend noted that 60% of patients who left without being seen sought care for the same problem within a week, and 5% of patients who left were admitted to the hospital within two weeks (Rowe et al., 2006).

Altogether, this leads me to conclude that many patients who leave the ED without being seen are sick and in need of medical attention, but the current level of crowding precludes them from accessing their right to emergency medical services. It also suggests that patients seen in the ED during crowded shifts may suffer increased mortality due to treatment conditions caused by crowding. In short, crowding has

become a barrier for patients to access the rights afforded to them under EMTALA and leads to inequitable care. If we acknowledge crowding is a barrier to this legal right, we must then ask what are the causes of crowding and what can be done to reduce the problem.

CHAPTER 2: CAUSES AND MISCONCEPTIONS SURROUNDING CROWDING

Confirmed Causes Of Crowding

One factor that is strongly linked to ED crowding is the boarding of admitted patients in the ED when the decision has been made to admit the patient, but inpatient beds are not available (GAO, 2003). This practice either takes up the bed of a patient in the waiting room, or takes the time of emergency department staff as the admitted patient waits in a hallway but still requires care. The 2003 GAO report concluded that inpatient boarding in the ED was a serious problem, and that “1 in every 5 hospitals reported an average boarding time in their emergency departments of 8 hours or more” (GAO, 2003, p. 12).

The effect of inpatient boarding on emergency department crowding has been well correlated in regard to the time a hospital spends on ambulance divert status. In a 2003 quantitative analysis of factors contributing to ambulance diversion, a research group evaluated the number of minutes hospitals spent on ambulance diversion in relation to many factors including nursing staff, physicians, and admitted patients. The study found that each admitted patient was associated with 9 additional minutes of ambulance diversion, but there was no association with the amount of nursing staff available or 13 of the 15 physicians participating in the study (Schull, Lazier, Vermeulen, Mawhinney & Morrison, 2003). This data draws a similar conclusion to the GAO study that found the top quarter of hospitals with the highest percentage of patients admitted had an average of 52% of patients boarding for greater than 2 hours, and a median ambulance diversion time 144 hours per year, compared to hospitals in the lowest quarter of percentage of

patients admitted where only 9% of patients were boarded for over 2 hours and median time of diversion was 4 hours per year (2003).

The boarding of admitted patients is a serious problem and acts as a barrier to quality care for the admitted patient, patients waiting to be seen, or both parties. In fact, I have observed this phenomenon in my time as a medical student. If an admitted patient waits for an inpatient bed in his or her ED room during a crowded shift, this prevents further patients from being examined and treated in that room. As much as the attending physician may be willing and ready to see new patients, the turnover slows to a crawl when the majority of patients are admitted and waiting for beds. I have been on shifts where only a few new patients were seen in the first few hours because the majority of the patients from the previous shift had been admitted, but had not yet been transferred. New patients may alternatively be seen in the hallway when no beds are available. In the ED where I trained as a medical student, there is a high acuity zone, medium acuity zone, fast track, and a room full of chairs that were originally intended for lower acuity patients. The high acuity rooms are the most likely to be affected by back up of inpatients awaiting transfer. I remember being warned by the residents when I started not to be biased as to patient severity by the fact that a patient was assigned to a chair or a hallway bed rather than a regular bed when the ED gets busy, as high acuity patients are often sent to the chairs or hallway beds for treatment when there are no regular rooms available. While this solution is better than the patient continuing to sit in the waiting room, it is not quite the same quality of care a patient may have received if there was not a backup of admitted patients in the rooms reserved for high acuity cases, which have better visibility and more equipment.

Again, inpatient boarding can be a problem for the admitted patient as well. In an attempt to try to maintain continued flow of new patients, admitted patients are often forced to await transfer in hallways. This can create a dangerous situation while their ED nurse and attending physician try to monitor them while still caring for a full load of other patients. If a patient waits through a shift change, the ED attending does not know the patient as well as the original doctors who decided to admit the patient. While an admitting doctor may come visit the patient in the ED, the failure of the patient to move to an inpatient floor can delay the start of certain treatments, especially in the age of EMR where orders entered by a physician are often attached to the location of the patient. I have seen problems where the nurse may be unable to release orders placed by the admitting team while the patient remains in the ED. In both treatment scenarios, the lack of availability of inpatient beds acts as a barrier to quality care for the admitted patient as well as a barrier to quality care for those forced to wait for long times in the waiting room.

Misconceptions About ED Crowding

Many have singled out “inappropriate” or “non-urgent” visits as a substantial source of crowding in the ED. Claims have been made that the poor and uninsured are more frequently using the ED as a means of primary care and thus increasing the overall number of visits to the ED and constituting a major contributor to the crowding. Based on this assumption, some began to champion the idea of triage or deferral of non-urgent patients away from the emergency department, and significant research energy has been allotted to tackling the problem of “inappropriate” visits to the emergency department by way of deferral. There are several apparent problems with this strategy.

While this theory makes logical sense, studies have not supported the notion that non-urgent use of the ED is the main contributor to crowding. There appears to be no association between the volume of walk-in patients and the time a hospital spent on ambulance diversion (Schull et al., 2003). A retrospective records review found that for every ten low-complexity patients arriving per eight-hour window, there was an associated increased total stay of only 5.4 minutes and an increased time to provider of only 2.1 minutes for medium and high complexity patients (Schull, Kiss & Szalai, 2007). This suggests that there is negligible impact of wait times in the ED due to increase in low-complexity or non-urgent visits. While this data does not take into account whether the ED is the best place to treat non-urgent patients, nor the amount of resources and staffing required due to the increased patient load (Schull et al., 2007), it does discount the idea that deferring non-urgent patients away from the ED would solve the problem of crowding.

Likewise, analyses have not confirmed the idea that it is the uninsured seeking primary care that are causing the majority of crowding in EDs across the nation. One literature review noted that 8% of ED patients are considered frequent users and account for about 28% of overall ED visits (Pines et al., 2001). These patients are more likely to have a “higher severity of illness, be older, have fewer personal resources, be chronically ill, present for pain related complaints, and have government insurance” (Pines et al., 2011, p. e64). In fact, an analysis of national ED use data found there is no difference in the percentage of frequent ED users who were uninsured compared to private insurance, but those with government insurance were twice as likely to be frequent ED users (Zuckerman & Shen, 2004). However, there was a correlation between household income

and ED use, with those below the poverty level using the ED more frequently (Hunt, Weber, Showstack, Colby, & Callaham, 2006).

Another misconception is that patients come to the ED because they do not have access to primary care. A cross-sectional study comparing urgent and non-urgent patients found the majority of patients in both groups had a PCP to follow up, and while the non-urgent patients tended to have less regular contact with their PCP, the difference was not significant (Afialo et al., 2004). However, one common theme was that patients had not attempted to contact their PCP prior to presenting to the ED, and when questioned on their reasoning for presenting to the ED rather than their PCP the most common answers included issues of accessibility, referral/follow-up, familiarity, trust, and perception of need (Afialo et al., 2004). Another study found that individuals who lacked a usual source of health care were actually less likely to be frequent users of the ED compared to people who made multiple physician visits per year. Specifically, those who made three or more visits yearly to their PCP were five times more likely to be frequent ED users (Hunt et al., 2006).

This data points to the idea that it is not uninsured patients seeking primary care who are causing the majority of visits to the ED, but rather poor, sick patients with government insurance. These patients are more likely to be chronically ill and suffer from conditions such as cancer, gastrointestinal disease, cardiovascular disease, pulmonary disease, and mental health problems (Pines et al., 2011). These patients most likely already have a PCP, who they visit often because they are chronically ill, and are frequent users of medical care in all settings. I have seen this trend play out in real life, as many of the patients who present to the ED at my institution have a long history of ED visits,

inpatient admissions, and outpatients visits which are chronicled in the EMR. There were shifts in which no patient I followed was new to the hospital system. Patients with multiple chronic health problems seemed to be the most prone to multiple ED visits and admissions; it was not uncommon to see documentation that a patient had been admitted for chest pain and dangerous hypertension, which was treated and resolved, but then the patient returned shortly after discharge for exacerbation of another problem such as COPD. An additional burden of this chronically ill population is frequent hospital admission, which accounts for a much higher cost than those who frequently visit the ED as outpatients (Pines et al., 2011).

To be clear, I do not want to discount the fact that many patients present to the ED for non-urgent complaints. Even in my short experience as a medical student I have seen many patients present for medication refills or a chronic problem with no acute exacerbation. I agree that it is a problem within the healthcare system that these patients are coming to the ED rather than their primary doctor or urgent care for these non-urgent issues. My point here is that we must clearly define the problem we are trying to solve and research the causes before researching possible solutions. If it is not the non-urgent patients that exacerbate crowding, then researching the deferral of these patients will not ultimately help solve the problem of crowding. Likewise, the compilation of patients who frequent the ED is complex, and we should not make broad sweeping assumptions as to which patients are causing ED crowding. Instead, we should continue to research and define more carefully the different characteristics that lead to frequent ED use.

CHAPTER 3: ETHICAL CONSIDERATIONS

Crowding Disproportionately Affects The Urban And Underserved

It is important to be aware that while the patient composition of frequent ED users is complex and not composed exclusively of the urban, poor, and uninsured, these populations are impacted to a greater extent by the problem of crowding. The GAO reported hospitals that struggled more with crowding were in the largest metropolitan service areas (MSAs), MSAs with high population growth, and MSAs with higher percentages of people without health insurance (2003). Specifically, citing ambulance diversion as a marker of crowding, they reported “hospitals in MSAs with populations of 2.5 million or more had a median of about 162 hours of diversion in 2001, compared with about 9 hours for hospitals in MSAs with populations of less than 1 million” (GAO, 2003, p. 3). Additionally, almost twice as many patients had to board in the ED for over 2 hours in large MSAs; 48% as compared to 23% (GAO, 2003).

Longer wait and treatment times caused by crowding have a measured effect. There was a strong correlation between length of stay times and the percentage of patients that left without being seen. In large MSAs, there were over twice as many people leaving without being seen (2.2% compared to 0.9%) (GAO, 2009). In hospitals that had few (less than 1%) people leave without being seen, the average length of treatment was only 150 min, compared to hospitals where greater than 4.5% of patients left without being seen, in which the average length of stay was 249 minutes (GAO, 2009). Even within a certain MSA, neighborhood characteristics may affect wait and treatment times at various EDs. A study from California found that wait times in hospitals in poor neighborhoods increased by about 10 minutes for every \$10,000 decline

in per capita income, independent of other factors (Lambe et al., 2003). As discussed previously, those who leave without being seen have a higher morbidity than those who wait to see a physician, and this data suggests long wait times often faced by patients presenting to EDs in urban and poor areas may be causing these patients to leave more often.

We must be careful to avoid solutions that will increase the current inequalities in access to emergency care. Several proposed solutions to ED crowding, such as diverting patients to urgent care or retail clinics, would be less accessible to these underserved populations. While 29% of the US population lives within a 10-minute drive of an urgent care or retail clinic, these services are less frequently located in medically underserved neighborhoods (Weinick, Burns & Mehrotra, 2010). Additionally, while patients may be interested in a follow-up appointment the next day when offered rather than waiting in the ED, it has been noted for many years that in many low-income and urban communities, the primary care infrastructure to support the number of visits that could be triaged away from the ED does not exist (Baker et al., 1991). Thus, we must look for other solutions for crowding that would be effective in poor and medically underserved communities.

I highlight the burden of ED crowding on urban and underserved communities not only because I have trained in one, but also because it is relevant to the bioethical principle of justice. In bioethics, we often use the principle of justice, particularly distributive justice, to determine how to allocate healthcare resources. The formal principle of justice tells us that, “equals should be treated equally” (Beauchamp, Childress, 2009, p. 250) and the basic material principle is that we distribute health care

to those who need it (Beauchamp, Childress, 2009). To further consider what just distribution entails, and to draw on the rule of fair opportunity, two patients that are otherwise medically equal should not be treated differently because of a particular factor such as their race, ability to pay, where they live, etcetera (Beauchamp, Childress, 2009). The previously discussed data points to a shortcoming in our healthcare system to justly distribute emergency care to those living in urban environments. If two patients present for the same complaint, having the same level of need for emergency care, it is unjust that one should have to wait longer to see a physician because they live in an urban setting versus a suburban setting. It may be tempting on an individual level to think that the urban patient is just unlucky that the wait at their particular ED happens to be longer than the wait in the suburbs. However, this data suggests that extended waits are not something that just happen slightly more frequently in the urban environment. Rather, crowding is a pervasive problem that makes it more likely that any patient presenting to an ED in a large MSA likely be forced to wait longer than their counterpart with equal symptoms in a different setting. If we are to maintain just delivery of emergency care, we must find a way to help alleviate the crowding and wait times in our nation's urban emergency departments.

Diversion Of Non-urgent Patients Away From The ED

As I previously discussed, one of the earlier ideas regarding crowding centered around the idea that non-urgent patients were the cause of crowding and that perhaps deferring these patients may solve the problem. While this idea has been mostly refuted, and most people now agree that inpatient boarding is a much more prominent cause of crowding, I want to take the time to explore why the idea of non-urgent patient diversion is not only a misplaced attempt to combat ED crowding, but also potentially dangerous to patients.

Up to this point the field of emergency medicine has not established consistent guidelines outlining which patients could be deferred safely during times of crowding. One research group attempted to apply several sets of deferral guidelines to retrospective patient charts, but found widely varying numbers of patients who met criteria for deferral. As the authors explain, “health care systems that triage patients away from the ED assume that reasonable clinicians will agree as to which patients are truly in need of emergency medical care. Without such agreement, there is no means of determining whether the correct patients are being triaged away from EDs” (Lowe & Bindman, 1997, p. 135). While this paper is quite old, today there is still no universally-agreed-upon set of guidelines for safe deferral.

Another problem with triage of non-urgent patients away from the ED is the availability of subsequent appointments and the uncertainty of follow up. One author noted, “even if triage guidelines could be developed, their implementation would require a primary care network that treats patients promptly, regardless of their insurance status” (Lowe et al., 1994, p. 292). In a randomized trial of patients who were offered next day

appointments, 95% of the patients in the deferred group were evaluated at least once by a physician, but the authors admitted that this approach may not be feasible in a health system where next day care cannot be guaranteed (Washington, Stevens, Shekelle, Henneman & Brook, 2002).

To approach the problem with an ethical lens we can consider the principles of beneficence and non-maleficence. Deferring non-urgent patients should increase the well being of all those who present to the ED by reducing crowding (beneficence) and should not be harmful to the individual patient who is deferred (non-maleficence). We have not proven that non-urgent patients are the cause of crowding, and we cannot safely decide who can be deferred. Therefore, there is little argument to be made for systematic triage of non-urgent patients away from the ED. This strategy will not likely cause a large benefit to the common good of all patients visiting the ED because, as previously discussed, the non-urgent visits make little impact in the overall waiting and treatment times. This strategy will also pose a threat to individual patient wellbeing due to lack of consensus on triage safety guidelines and lack of assurance of follow-up in many places. So, in general, it is unsafe and unethical to systematically defer non-urgent patients from the ED.

While I do not think a logical or ethical argument can be made for the systematic, meaning a standing policy, deferral of non-urgent patients for the purposes of relieving crowding, I do think there may be a role for offering voluntary deferral. At my institution, there is a nearby federally qualified health center (FQHC) that can see same-day patients. Patients deemed to be non-urgent and headed to the fast track portion of the ED are seen quickly in the waiting room by a physician, Nurse-Practitioner, or Physician Assistant to

assure they are stable. If the patient is stable and does not require any resources that are not found at the FQHC (such as sutures or X-ray), they are offered deferral to the FQHC if they would prefer to be seen there rather than the ED. This practice was instituted to attempt to cut down on the number of patients leaving without being seen. Patients maintain their autonomy and right to be seen in the ED if they so choose, but they are also offered an alternative they may use if they feel it adequately serves their needs. This represents a different philosophy in the approach to deferral of the non-urgent patient. The patients are not being turned away because the ED is too full in order to decrease the waiting room census, but they are still being offered an option other than the ED. I am interested to see in the future if this strategy truly makes a difference in the rate of patients leaving without being seen, and I would also be interested to see the follow-up rates and satisfaction results of patients who chose to be seen at the FQHC.

Dangers Of Current Stereotypes

As discussed thus far, the problem of emergency department crowding is complex and the mix of patients frequenting EDs is not well defined. However, time and again data has suggested that the stereotype scapegoat for ED crowding, the poor uninsured patient inappropriately using the ED to attain non-urgent primary care, is most likely not to blame. Why did this stereotype arise and perpetuate? While it is difficult to pinpoint the origin of any stereotype or bias, I would propose several possible reasons for this particular rhetoric.

While it may not be true that the stereotypical non-urgent patient is the reason for crowding, that does not negate the large influx of such patients to the emergency room. The uninsured and non-urgent patient is neither profitable nor exciting to the majority of

those who work in the emergency setting. The training for this field is aimed at recognizing and treating life-threatening and emergent conditions. Expensive resources and staffing are offered in the emergency department that are not required in primary care clinics because the approach in the ED is skeptical; everyone must be assumed sick until proven otherwise. A non-urgent patient eats up these expensive resources and staff time, often without receiving the type of care they really need. This creates an unsatisfying interaction for all parties: patients, staff, nurses, doctors, and administrators. I believe it is possible that the field has perpetuated the rhetoric of the stereotypical non-urgent patient as the blame of ED crowding because it is this stereotypical patient whom we least enjoying seeing and treating in the ED.

There are several dangers with allowing this rhetoric to continue. The first problem is that if we continue to focus on the diversion of non-urgent patients from the ED as a means of crowding control, then we will fail to address the larger and more important problems contributing to crowding. As a wise professor used to always tell our medical school class, “the most important part of medicine is diagnosis, without the correct diagnosis you will never be able to give the correct treatment.” If we do not actively seek ways to pinpoint true causes of ED crowding, we will never be able to come to a useful conclusion.

The second pitfall of stereotyping non-urgent patients is safety. As discussed, many previously proposed triage guidelines do not agree on which patients are safe to wait for delayed or deferred treatment. While the practice of deferral is not widespread, and I have not found any current literature that demonstrates a certain subset of patients is disproportionately offered deferral or delayed care, true unbiased evaluation is incredibly

difficult. Without strict guidelines to determine which patients are refused care, I fear the same stereotypical patients that are unfairly blamed for ED crowding would also be the subset that would be more frequently deferred even in the event of a potentially appropriate visit.

A final danger to discuss, although this short list is certainly not complete, is that the stereotype of poor uninsured patients causing ED crowding may cause an increased gap in equitable access to emergency care for a population that is already experiencing disparity in this area. As previously discussed, the epidemic of ED crowding disproportionately affects those who live in impoverished urban areas, especially those who must use county hospitals due to lack of insurance or citizenship. To continue to research safe ways to defer these patients from the ED rather than search for a meaningful solution to crowding would be a continued injustice in caring for this already underserved population.

CHAPTER 4: SOLUTIONS AND CONCLUSION

Reassessing Solutions

The problem of ED crowding is complex. Perhaps the only sure fact is that more research is needed into the delicate balance of increasing ED visits and decreasing number of EDs and inpatients beds, as well as research into methods of healthcare delivery, in order to address the current epidemic. Several factors have already been identified that we could begin to address as research continues. I will use the conceptual framework model of input, throughput, and output developed by Asplin et al. (2003) to categorize these factors.

I have already discussed at length the problem of increased input (patient volumes) to EDs across the country. As discussed, the composition of patients presenting to the ED is complex, and it is also likely different for each hospital depending on the community they serve and the resources available in that community. Because each community is unique, study of each particular hospital's community would be ideal to determine the most pressing factors causing ED visits.

A qualitative study by Shaw et al. (2013) used semi-structured interviews to examine the decision making process for 30 patients seen in the non-urgent area of a tertiary care ED in urban New Jersey. Their conclusion was that the decision to seek care in the ED is complex and multifaceted. The first major divide in patient decision making was based on whether patients knew about alternate methods of care. In this sample, almost 25% of patients were unaware of other care options, and thus, defaulted to the ED as their only source of healthcare. If the patient was aware of other care options, there were several prevailing themes among the factors the patients weighed when considering

whether to present to the ED or primary care. Though many of the themes encountered were previously reported in the literature (instruction by a medical professional, facing access barriers to regular source of care, defining health care need as an emergency, transportation barriers, and cost of care), the researchers also determined that in their community there were perceived quality and racial issues regarding the local FQHC that swayed patients to seek care at the ED rather than the FQHC (Shaw et al., 2013).

This study is important because it highlights the role of patient education and community factors in the processes of a patient presenting to the ED. The researchers found a significant portion of non-urgent patients presented because they were unaware of other options, and several patients who were aware of other options thought they could not seek care elsewhere because they did not have insurance (Shaw et al., 2013). For these patients, education about community resources and other sources of care is key in preventing future non-urgent visits. The study also revealed deficiencies in the local FQHC that were causing increased numbers of non-urgent patients to present to the ED, instead of this primary care location. Without this type of valuable information, which is most likely specific to the community served by this particular ED, it would be difficult to develop a strategy to effectively decrease non-urgent ED use.

While input of non-urgent ED use may not be the main source of crowding, it is true that non-urgent visits constitute a serious problem in the healthcare landscape of the United States. It is estimated that 13.7-27.1% of all ED visits could be treated at urgent care or retail clinic locations (Weinick et al., 2010). The ED is a much more expensive option than a primary care visit and the ED is not set up to address chronic or preventative health care. The shift of these visits from the ED to the clinics could save an estimated

average of 0.2% of the national healthcare cost, which would amount to \$4.4 billion annually (Weinick et al., 2010). For this reason, patient education and focus on preventative care has the potential to make a positive difference. As Shaw et al. noted, some patients presenting to the ED for non-urgent complaints did so because they did not know where else to go for care or how to contact other sources of care (2013). For a patient who presents to the ED for this reason, education about other sources of healthcare in the community would most likely be beneficial to the patient and could allow them to seek a more appropriate level of care for non-urgent complaints in the future. More and more EDs are employing social workers or patient navigators to help coordinate care for patients considered to be “frequent-flyers” or “super-utilizers,” perhaps available social workers or patient navigators could also be of use for helping to educate non-urgent patients about other sources of care. For health care professionals, it is important to educate patients who have presented to the ED for non-urgent complaints about what is available in the ED, what kind of problems the patient should present for in the future, and what kind of problems could be handled outside the hospital.

Patient education and connection with resources may also be helpful for the chronically ill patient who frequently presents to the ED despite having a regular source of care. Similar to the non-urgent patient, education of the chronically ill frequent-flyer may help to redirect them to more appropriate sources of care in the future. It is also an important role of both the emergency, and primary, physician to continually educate these patients on ways to avoid exacerbations of their chronic conditions to try to avoid emergent situations and hospitalizations. An excellent example of such a patient would be a child with chronic asthma. During my pediatrics training, I saw several children with

poorly controlled asthma who had presented to the ED on numerous occasions for asthma exacerbations. I remember the team talking with one mother who did not understand what symptoms constituted a true exacerbation and would bring her child to the ED approximately twice per month. The mother also did not understand which asthma medications were supposed to be used daily and was not using them correctly, so her daughter's asthma was poorly controlled at baseline and she was frequently admitted to the hospital. Our team discussed whether there were any resources we could connect her with to visit the home, but we also felt one of our primary roles was to make sure we clearly explained the child's asthma regimen and what symptoms should prompt an ED visit before we released the mother and child. This child had come in contact with many doctors in the past, and I do not doubt that there were past attempts to help clarify her asthma regimen, but we still tried to do our due diligence to educate the patient and family and hopefully prevent future hospitalizations. While it may seem tiresome, I believe it is important that we do our best to educate patients every chance we get. Each individual patient like this child with poorly controlled asthma who attains better control of his or her chronic disease could save dozens of ED visits. This would be better not only for the health system as a whole, but also for the patient.

One definitive bioethics research agenda I would like to propose based on my review of ED crowding literature is further qualitative assessment of individual communities for EDs struggling with crowding. Each community has a different set of factors that affect the health of their patient population, as well as a different set of resources available to them. We could make great strides as healthcare systems if we continue to communicate effectively with our patient populations to see where

deficiencies in understanding, or holes in access to care, are affecting our communities' utilization of care. The most important component of this is that we must **ask the community**. We may find problems we did not expect, such as Shaw et al.'s discovery of perceived problems with their local FQHC (2013). We may find that certain problems are more pervasive than others, and we could focus our efforts more precisely. Of equal importance, we need follow-up research to qualitative studies such as the one done by Shaw et al. to examine if implementing change in the identified problem areas makes a difference in community ED use patterns. While I am hopeful that interventions such as patient education could make a positive difference, I would also like to see demonstrable evidence that these efforts make a difference rather than continuing them blindly.

The next consideration for management of ED crowding is throughput. Again, as the number of patients presenting for emergency care has increased over the last 2 decades, the number of EDs has slowly declined. This leads to fewer resources and treatment sites per patient, and this phenomenon disproportionately affects lower income and medically underserved communities. As the debate over healthcare reform continues in the US, one important aspect to consider is whether federal aid is warranted to help correct some of these disparities. Additional facilities must be added at some point if emergency care is to keep pace with the growing number of patients, and in order for this increase to be equitable, extra help should be given to those communities and EDs that are experiencing the worst crowding.

One other issue to consider regarding throughput is the idea of "fast tracking" non-urgent patients. This strategy has become popular in recent years as more and more patients present to EDs with non-urgent complaints. Rather than triaging patients away

from the ED altogether, this approach involves seeing patients in a separate area of the ED where patients are expected to move through more quickly and receive less resources. Lowe et al. note, “while current charges may be higher, the cost to the hospital of caring for nonemergency patients in the ED may be small enough to allow restructuring of fee schedules rather than refusal of care” (1994, p. 292). As previously discussed, urban communities do not always have the same access to urgent care and commercial clinics (Weinick et al., 2010). Perhaps a change in how non-urgent patients are treated and billed within ED fast tract areas would leave room in the budget for additional resources in the ED such as more treatment rooms or social workers.

The primary factor that has been shown to contribute significantly to ED crowding is output, or more specifically, the boarding of inpatients that need to be admitted to the hospital when no beds are available (GAO, 2003). The main factors and solutions affecting the availability of inpatient beds are not new or revolutionary: the number of full beds is dependent on the number of beds available, the number of sick patients, and their length of stay in the hospital. As already discussed, if crowding is expected to decrease, it is important that funds be allotted to increase treatment space in areas that are suffering from the worst crowding. This includes inpatient beds as well as ED space. Hospitals have already begun to crack down on length of stay and 30 day readmission rates due to insurance reimbursement. Additionally, the medical community is well aware that attention to patient education and preventative care are extremely important to try to ease the burden of chronically ill patients. These types of initiatives are not new, but in general they have been in the realm of internal medicine or family medicine. Perhaps it is time for the field of emergency medicine to also take an active

role in helping educate patients about preventative care, and explore what sort of care started in the ED may help reduce patient length of stay. These factors are important in general for the well being of the patient, but perhaps little by little these efforts could also help lift just a small bit of the crowding burden.

Conclusion

Emergency department crowding is a complex and broad problem facing the field of emergency medicine. To address this problem we must continue to define the causes of crowding so that we may implement solutions that address true causes. We should be careful not to make generalizations about which populations are responsible for increased ED visits and should not turn patients away in an effort to ease crowding.

More research is needed nationwide to address systemic factors regarding which patients frequently present to the ED, which patients in particular lead to ED back up, and why there is often such difficulty in transitioning patients to inpatient beds. Additionally, qualitative research at the community level is valuable to help define particular frequent causes for ED visits in that community and resources that may be needed to help reduce ED burden. Patients in urban and underserved communities have been most severely affected by crowding, and we should focus extra efforts on solutions that would provide more just access to emergency services in these communities.

The emergency department has long been considered the safety net for our nation's healthcare system, a place where nobody can be turned away from medical care. Through continued efforts to address and reduce crowding we can strive to ensure emergency care is not only accessible, but also equitable, for all.

REFERENCES

- Afialo J., Marinovich A., Afialo M., Colacone A., Léger R., Unger B., Giguère C. (2004) Nonurgent emergency department patient characteristics and barriers to primary care. *Acad Emerg Med*, 11, 1302-1310. Doi: 10.1197/j.aem.2004.08.032
- American Hospital Association. (2010) *Trendwatch chartbook 2016: trends affecting hospitals and health systems*. (2010) Chart 2.2 & Chart 3.7. Retrieved from <https://www.aha.org/system/files/research/reports/tw/chartbook/2016/2016chartbook.pdf>
- Asplin B.R., Magid D.J., Rhodes K.V., Solberg L.I., Luri N., Camargo C.A. (2003) A conceptual model of emergency department crowding. *Ann Emerg Med*, 42, 173-180. Doi: 10.1067/mem.2003.302
- Baker D.W., Stevens C.D., Brook R.H. (1991) Patients who leave a public hospital emergency department without being seen by a physician. *JAMA*, 266(8), 1085-1090.
- Beauchamp, T.L. & Childress, J.F. (2009). *Principles of biomedical ethics* (7th ed.). New York, NY: Oxford University Press.
- Bernstein S.L., Aronsky D., Duseja R., Epstein S., Handel D., Hwang U., McCarthy M., McConnell J., Pines J.M., Rathlev N., Schafermeyer R., Zwemer F., Schull M., Asplin B.R. (2009) The effect of emergency department crowding on clinically oriented outcomes. *Academic Emergency Medicine*, 16, 1-10. Doi: 10.1111/j.1553-2712.2008.00295.x
- Examination and treatment for emergency medical conditions and women in labor, 42 U.S.C. § 139dd (2010)

- GAO, *Hospital emergency departments: crowded conditions vary among hospitals and communities*, GAO-03-460 (Washington, D.C.: Mar. 14, 2003)
- GAO, *Hospital emergency departments: crowding continues to occur, and some patients wait longer than recommended time frames*, GAO-09-327 (Washington, D.C.: Apr, 2009).
- Hunt K.A., Weber E.J., Showstack J.A., Colby D.C., Callaham M.L. (2006) Characteristics of frequent users of emergency departments. *Annals of Emergency Medicine*, 48, 1-8. Doi:10.1016/j.annemergmed.2005.12.030
- Lambe S., Washington D.L., Fink A., Laouri M., Liu H., Scura Fosse J., Brook R.H., Asch S.M. (2003) Waiting times in California's emergency departments. *Annals of Emergency Medicine*, 41, 35-44. Doi: 10.1067/mem.2003.2
- Lowe R.A., Bindman A.B., Ulrich S.K., Norman G., Scalette T.A., Keane D., Washington D., Grumbach K. (1994) Refusing care to emergency department patients: evaluation of published triage guidelines. *Annals of Emergency Medicine*, 23(2), 286-293.
- Lowe R.A., Bindman A.B. (1997) Judging who needs emergency department care: a prerequisite for policy-making. *American Journal of Emergency Medicine*, 15(2), 133-136.
- McCaig L.F. & Burt C.W. (2004) National hospital ambulatory medical care survey: 2002 emergency department summary. *U.S. Department of Health and Human Services Centers for Disease Control and Prevention*. Advance Data No. 340.

- Pines J.M., Asplin B.R., Kaji A.H., Lowe R.A., Magid D.J., Raven M., Weber E.J., Yealy D.M. (2001) Frequent users of emergency department services: gaps in knowledge and a proposed research agenda. *Academic Emergency Medicine*, 18, e64-e69. Doi: 10.1111/j.1553-2712.2011.0186.x
- Rowe B.H., Channan P., Bullard M., Blitz S., Saunders D., Rosychuk R.J., Lari H., Craig W., Holroyd B.R. (2006) Characteristics of patients who leave emergency departments without being seen. *Acad Emerg Med*, 13, 848-852. Doi: 10.1197/j.aem.2006.01.028
- Rui P. & Kang K. (2014) National hospital ambulatory medical care survey: 2014 emergency department summary tables. Available from: http://www.cdc.gov/nchs/data/ahcd/nhamcs_emergency/2014_ed_web_tables.pdf.
- Schull M.J., Lazier K., Vermeulen M., Mawhinney S., Morrison L.J. (2003) Emergency department contributors to ambulance diversion: a quantitative analysis. *Annals of Emergency Medicine*, 41, 467-476. Doi: 10.1067/mem.2003.23
- Schull M.J., Kiss A., Szalai J.P. (2007) The effect of low-complexity patients on emergency department waiting times. *Annals of Emergency Medicine*, 49, 257-264. Doi: 10.1016/j.annemergmed.2006.06.027
- Shaw E.K., Howard J., Clark E.C., Etz R.S., Arya R., Tallia A.F. (2013) Decision-making processes of patients who use the emergency department for primary care needs. *Journal of Health Care for the Poor and Underserved*, 24, 1288-1305. Doi: 10.1353/hpu.2013.0140

- United States Census Bureau. (2018) *Monthly population estimates for the United States: April 1, 2010 to December 1, 2018* (NA-EST2017-01). Retrieved from <https://www.census.gov/data/tables/2017/demo/popest/nation-total.html>
- United States Census Bureau. (2010) *Intercensal estimates of the resident population by sex and age for the United States: April 1, 2000 to July 1, 2010*. Retrieved from <https://www.census.gov/data/tables/time-series/demo/popest/intercensal-2000-2010-national.html>
- Washington D.L., Stevens C.D., Shekelle P.G., Henneman P.L., Brook R.H. (2002) Next-day care for emergency department users with nonacute conditions. *Annals of Internal Medicine*, 137, 707-714.
- Weinick R.M., Burns R.M., Mehrotra A. (2010) Many emergency department visits could be managed at urgent care centers and retail clinics. *Health Affairs*, 29, 1630-1636. Doi: 10.1377/hlthaff.2009.0748
- Zuckerman S. & Shen Y.C. (2002) Characteristics of occasional and frequent emergency department users. *Med Care*, 41, 176-182. Doi: 10.1097.01/mlr.0000108747.51198.41