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EVALUATION OF EMERGENCY DEPARTMENT USE BY ADULT WITH PCP

Evaluation of Emergency Department Use by Adult Patients with Established Primary
Care Provider

Submitted in Partial Fulfillment of the Requirements for the Degree of Doctor of Nursing
Practice at the University of Kentucky

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EVALUATION OF EMERGENCY DEPARTMENT USE BY ADULT WITH PCP

Abstract

BACKGROUND: Overutilization of the Emergency Department (ED) contributes to unnecessary use of healthcare resources. One common cause is related to barriers with Primary Care access. Patients use the ED for conditions that can be managed in primary care due to the perception of urgency and convenience. PURPOSE: The purpose of this project was to evaluate factors contributing to the use of the ED for adult patients with primary care providers (PCP).

METHODS: A retrospective chart review was completed on 280 randomly selected patients over the age of 18 who presented to the ED between January and June 2018. Only those with an Emergency Severity Index (ESI) acuity level 3 or more were included. Variables assessed included patient demographics, visit characteristic, number of repeated ED visit, and number of missed PCP appointments. ED staff interviews were conducted to explore perceptions on inappropriate ED use.

RESULTS: There was a significant and positive association between the number of missed appointments with the PCP and frequency of ED visits ($r=0.151$, $p=0.012$). This association remained significant for ED use for a different complaint ($r=0.230$, $p<0.001$). There was no relationship between repeated ED visits for the same complaint ($r= -0.051$, $p=0.397$). Themes from the ED staff interview reported patient education, access issues, and patient accountability as reasons for non-urgent ED use.

CONCLUSION: Inappropriate ED use is a multifactorial problem. It requires community effort, policy change, and accountability from patients and healthcare providers to promote appropriate health-seeking behavior

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Introduction

The role of the emergency department (ED) to provide care for life-threatening situations changed drastically in the last decades due to the increasing patient demand. The ED has become support for primary care by providing timely diagnostic work-up and after-hour care to compensate for limited access and availability in primary care (Kellerman, Hsia, Yeh, & Morganti, 2013; Morganti et al., 2013). As a result, the ED provides services to conditions considered non-emergency or health issues that can be managed in primary care settings. In 2015, approximately 50% of ED visits were for non-emergency conditions (Centers for Disease Prevention and Control [CDC], 2015). This has resulted in overutilization of the ED, which contributes to increased healthcare spending, ED overcrowding, and a decrease in quality of care (Coster, Turner, Bradbury, & Cantrell, 2017). The purpose of this project was to explore the use of ED services by adults with an established primary care provider and determine factors related to inappropriate ED use.

Background and Significance

Inappropriate ED visits are defined as encounters for non-emergency conditions that could be managed in primary care (Uscher-Pines, Pines, Kellerman, Gillen, & Mehrotra, 2013). In contrast, the Emergency Medical Treatment and Active Labor Act defines an emergency as high acuity conditions that require immediate and life-saving interventions to prevent adverse outcomes (Centers for Medicare and Medicaid Services [CMS], 2012). It is estimated that 4.4 billion dollars could be saved if non-urgent ED visits were managed in the appropriate setting (Uscher-Pines, Pines, Kellerman, Gillen, & Mehrotra, 2013).

In response to wasteful healthcare spending, the Affordable Care Act (ACA) was implemented in 2010 to improve cost and health quality by increasing access to primary care

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(Affordable Care Act [ACA], 2017). This was accomplished by expansion of Medicaid where the emphasis was on prevention and provision of primary care services. Despite the healthcare expansion, there has been no significant reduction in ED use for non-emergent conditions. The Oregon Health Insurance Experiment found that Medicaid coverage significantly increased ED use by 40% (Taubman, Allen, Wright, Baicker, & Finkelstein, 2014). ED visit rates increased even as newly insured adults increased their use of outpatient services, suggesting that ED visits complement rather than substitute for office visits. It is estimated that Medicaid coverage increased the likelihood of a person having both ED and office visit by 13.2% (Finkelstein, Taubman, Allen, Wright, & Baicker, 2016).

In Kentucky, ED visits also did not change with the implementation of ACA. Examination of the program implementation did not show any significant changes with ED visits in all patient ages in the state (children, non-elderly, and elderly). Kentucky had higher ED use rate than the average in United States in 2015 (25.5% vs. 18.9%) (State Health Access Data Assistance Center [SHADAC], 2017). When comparing patients with Medicaid to those without insurance in 2014, the Medicaid group in the US also had a significantly higher prevalence in ED use (35.2% vs 16.6%) (Gindi, Black, & Cohen, 2016). This association was also evident in Kentucky. ED visits for uninsured adults dropped by 17% between 2012 and 2015, while ED visits for Medicaid patients increased by 16.4% (State Health Access Data Assistance Center, 2016). These findings suggest there may be unwarranted use of the ED despite the expansion of health insurance coverage. All stakeholders are encouraged to understand the reason for inappropriate ED visit and find ways maximize primary care services.

Review of Literature

Definition of Emergency

There are multiple factors that contribute to the inappropriate use of the ED. One primary issue is the varying definition of what constitutes an emergency. ED healthcare providers employ objective measures to define an emergency, while patients assess their symptoms more subjectively (Agency for Healthcare Research and Quality [AHRQ], 2012; Coster, Turner, Bradbury, & Cantrell, 2017). The Emergency Severity Index (ESI) is used by ED staffs to determine the level of acuity. This index uses a five-level category to determine which patients require immediate intervention by assessing their stability and number of required resources for their care. An ESI level 0-2 indicates high acuity and includes situations such as severe distress, lethargy, confusion, or requires an immediate life-saving intervention. Patients with an ESI level between 3 to 5 are those who present with less-emergent problems such as red eye, sinus problems, cough and urinary problems (Agency for Healthcare Research and Quality [AHRQ], 2012).

In comparison to an objective measure of acuity, the patient's perspective of urgency is subjective. Approximately 61% of patients report the reason they came to the ED is from the perceived seriousness of their condition (Lobachova et al., 2014). Patient's urgency is related to their perception of the condition's complexity. Often this perception increases their anxiety and results in advice from family and friends to seek ED services. Coster et al., (2017) estimated that 48% of patients attended the ED due to advice from friends and families. Primary care providers who cannot immediately accommodate patients will also encourage ED use. It is estimated that 35% of patient of ED visits were due to a health professional referral (Coster et al., 2017).

Factors Associated with Non-Emergent ED Use

Health Anxiety and Uncertainty. Evaluation of health acuity often differs between health professionals and patients. Often patients who have low acuity conditions present to the ED believing their health condition is significant needing immediate intervention (Kraajivanger et al., 2016; Sieck, Hefner, Wexler, Taylor, & McAlearney, 2016). This evidence mimics the finding of Botelho, et., al., (2018) who found that more patients overestimate their symptoms instead of underestimating it. Patient's decision to seek ED care is related to their emotional state, trust, and satisfaction of the healthcare system (Rising et al., 2018; Rising, Hudgins, Reigle, Hollander, & Carr, 2016; Schmiedhofer et al., 2016).

The literature reports that fear related to the uncertainty regarding the significance of their symptoms is a motivation for patients to seek ED care. Patients expect a diagnosis and reassurance from the ED to reduce their anxiety and uncertainty (Schmiedhofer et al., 2016). This emotional state is reinforced by the perceived quality of care received. In a quantitative research, Rising, et., al., (2018) found that a high level of uncertainty with treatment quality was associated with return visits to the ED. Care quality includes timely, efficient, and equitable care (Institute of Medicine [IOM], 2001) .

In comparison, motivators of ED seeking behavior differs with those reported by Healthcare Providers. Sieck, et., al., (2016) found through interviews that Healthcare Providers believe that education and cultural issues are motivators for ED visits. Cultural and education issues include patient's lack of understanding between ED and PCP services and learned behavior from family members and community (Sieck, Hefner, Wexler, Taylor, & McAlearney, 2016).

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Perceived Convenience. The perceived accessibility of the ED also makes it more attractive and convenient to many patients. Uscher-Pines et al., (2013) reported that 60% of ED users found the it more convenient than a PCP office. The perception of convenience centers on the availability of 24-hour triage system, rapid access to technology (e.g., CT, MRI), availability of specialist and care services after-hours in the ED (Capp et al., 2015; Weisz et al., 2015).

The perception of convenience may be interpreted as primary care providers are unable to meet a patient's healthcare needs or they would receive better care in the ED (Uscher-Pines, 2013). Hefner and colleagues (2015) found that 42.7% of non-urgent ED visits reported primary care infrastructure as barriers to access (i.e., waiting time, and conventional business hours). Researchers also found 44% of patients felt that providers were inaccessible while 76% felt they would get better care in the ED (Coster et al., 2017; Pines et al., 2013; Hefner, Wexler, & Scheck, 2015).

Interestingly, the perceived convenience of the ED may also be enhanced by the effects of the new hospital payment plan. The Centers for Medicare and Medicaid Services (CMS) recently added ED patient's experience survey to determine hospital reimbursement. The survey includes questions regarding the wait times for care and pain reduction during the patient's ED stay (Centers for Medicare and Medicaid Services [CMS], 2018). This new expectation encourages different hospital systems to create quality improvement programs to stand against their competitors. For example, an ED may develop programs on reducing length of stay (LOS) from triage to discharge in patients with a low acuity level to 90 minutes. One other approach is implementing triage scripting and adding an ED liaison to improve the patient experience and reduce the perception of wait time in the ED lobby (Pickerell, 2019).

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Influence of Cost. There is varying evidence that explains how cost influence the patient's decision to use the ED for non-emergency conditions. One article found that 42% of patients with non-emergency conditions chose the ED because of payment flexibility (Uscher-Pines et al., 2013). The Emergency Medical Treatment and Active Labor Act does not require patients to pay any co-pays at the time of ED service. This regulation dictates that emergency care must be provided regardless of a patient's ability to pay. In comparison, in primary care, additional fees and copays are required prior to receiving health services (Centers for Medicare and Medicaid Services [CMS], 2012). Interviews with healthcare providers summarizes the relationship between payment flexibility and ED use by reporting that lack of financial disincentives motivates patients to use the department for non-emergency conditions (Sieck et al., 2016).

The role of cost with ED visits indicates that removal of PCP co-pays may improve health-seeking behavior (Beech et al., 2017). Regardless of the logical assumption other research indicates that this is not the case. For example, implementation of a healthcare plan that provided free non-preventative PCP visits in Mississippi did not increase the use of the PCP offices. Instead, even after adjustment for confounders, patients in Mississippi were more likely to go to the ED for non-emergency concerns compared to the control group (Beech et al., 2017). The finding suggests that removing cost alone is not enough to solve the issues with non-emergent ED use. Exploration of other care barriers is needed to identify solution to this complex healthcare issue.

Patient Characteristics. Characteristics common among patients who use the ED for non-emergency care are age, health status, insurance type, and socioeconomic status. Uscher-Pines, et. al., (2013) found that younger adults, African American ethnicity, those with lower income, those on Medicaid and patients with a history of poor health are more likely to use the ED for non-emergency conditions. These findings mirror those of Gindi et al., (2016) and Maeng (2017). It

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also interesting to note that lower education and socioeconomic status also have influence on patient's behavior for non-emergency use of the ED. This group is more likely to overestimate the severity of their illness according to Andrews and Kass (2018).

Visit Characteristics. Patients with non-emergency conditions are more likely to present in the ED after office hours. This visit pattern is significantly higher in patients ages 16 to 44-year-old (O'Keefe, Mason, Jacques, and Nicholl, 2018). Common conditions observed with non-emergency ED visits in adults include musculoskeletal pain, gastrointestinal complaints, headache, and psychiatric issues (Hsia & Niedzwiecki, 2017; Unwin, Kinsman, & Rigby, 2016; Kim, McConnell, & Sun, 2017)

Consequences of Inappropriate ED Use

The ED use for non-emergency conditions leads to ED crowding, a phenomenon occurs when the department is unable to meet the increased patient demand and ED workload. (Bellow & Gillespie, 2014; Morley, Unwin, Peterson, & Stankovich, 2018). Review of the literature shows that increase in low-acuity ED presentations were associated with ED crowding (Morley, Unwin, Peterson, & Stankovich, 2018). The connection between the increase in low-acuity ED visit and ED crowding has been attributed to primary care access issues. According to Uscher-Pines et. al., (2013) patients who do not regularly see their PCP are more likely to misuse the ED. It has been demonstrated that patients from primary care offices who ranked in the top quintile for access had 10.2% lesser self-referred ED visits (Morley, Unwin, Peterson, & Stankovich, 2018).

Reducing ED crowding is essential. It is associated with delay in interventions, increased medical errors, and adverse events. Patients who present with an ESI level indicating a higher acuity may have delayed care as non-urgent conditions consume ED staff and providers's time. For example, among those who present with acute abdominal pain, the delay in time from triage

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to treatment has been shown to increase from overcrowding (George & Evridiki, 2015). Similarly, patients with suspected pneumonia have experience an increased time between chest radiography and antibiotic administration (George & Evridiki, 2015). The delay in care and poor outcome related to ED crowding leads to increased patient mortality. In critically ill patients, there was a statistically significant increase in-hospital mortality with increased ED length of stay (12.9% with less than 6-hour delay vs. 17.4% with more than 6-hour delay (George & Evridiki, 2015).

The continued ED use for non-urgent conditions also leads to unnecessary healthcare spending (Uscher-Pines et al., 2013). Potentially avoidable ED encounters resulted in \$64.4 billion in unnecessary healthcare cost and accounted for 19.6% of overall cost for ED care (Galarraga & Pines, 2016). The average cost of ten common primary care treatable conditions (i.e., bronchitis, cough, dizziness, headache, low back pain, or an upper respiratory infection) is approximately 88% more expensive in the ED compared to primary care. (United Health Group, 2019; Center for Disease Control and Prevention [CDC], 2016).

Possible Solutions from the Literature

The use of the ED for non-emergency conditions is a complex issue. Recommended solutions require a different level of organizational process changes. The focus must be on improving access to care and increasing accountability for both patient and healthcare providers. Recommendations include providing alternative options to ED care, creating disincentives for inappropriate ED visits, and creating education campaigns to increase awareness on the different services provided between ED and PCP (Lobachova et al., 2014; Morley, Unwin, Peterson, & Stankovich, 2018).

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Improving Access to Care. A Systematic review of the literature\ shows that improving access to other forms of care positively influences the appropriate use of the ED (Lobachova et al., 2014; Morley, Unwin, Peterson, & Stankovich, 2018). This form of intervention includes increasing PCP availability hours, creating access for 24-hour outpatient laboratory/radiology testing, and placing PCP/Urgent care offices near an ED (Lobachova et al., 2014; Morley, Unwin, Peterson, & Stankovich, 2018). ED attendance was reduced by 17.9% if PCP availability increased on weekends. This also reduced the number of ED visits for chief complaints that can be managed in the primary care setting (Morley, Unwin, Peterson, & Stankovich, 2018). Furthermore, placing PCP offices near EDs reduced the ED wait times for patient with high acuity conditions by 19%.

Education Campaigns. Another way to improve ED visits is to use social interventions. Morley, Unwin, Peterson, & Stankovich (2018) report that providing campaigns for public education on the proper ED and PCP use improved rates of inappropriate ED visit by 40%. It is interesting to know, however, that this type of social intervention only had short-term effects. The rate of ED use went back to pre-campaign level after the intervention ended. This rebound effect is dampened when education campaigns were repeated and followed by public awareness regarding self-care for common illness, and availability of other primary care clinics in the community (Morley, Unwin, Peterson, & Stankovich, 2018).

Disincentive Programs. Research on social interventions indicates that education alone is not enough to change health-seeking behaviors (Morley, Unwin, Peterson, & Stankovich, 2018). An alternative social intervention is to implement financial disincentives for patients who use the ED for non-emergency conditions. Increasing patient ED fees to exceed the cost of a PCP visit was only effective on improving ED use when fiscal discomfort was significant

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(Morley, Unwin, Peterson, & Stankovich, 2018). This intervention had a negative impact on public relations. Creating financial disincentives creates concern about deterring true critical illness from seeking emergency care. It is for this reason that the use of the financial disincentives must be used with caution.

The use of EDs for non-emergency conditions is clearly a multifactorial problem. All hospital-systems are faced with financial consequences and struggle with reducing unnecessary ED visits. EDs are designed to treat emergency conditions while the PCPs are most appropriate for day to day non-emergency health issue. The first step is for hospital systems to identify factors associated with inappropriate ED and develop possible solutions.

Purpose

The purpose of this project was to conduct a retrospective chart review to identify factors associated with ED use in adults with established primary care providers. The results served as a needs assessment to determine the root source for inappropriate ED utilization. The objectives for this project were:

- 1:** Examine the demographic profile of adults who have an established PCP who present to the ED for non-urgent problems.
- 2.** Examine the presenting symptoms and disposition for patients who present to the ED for non-urgent problems.
- 3.** Compare the frequency of ED visits with their usual use of their PCP.
- 4.** Explore perceptions of ED healthcare providers for contributing factors, consequences, and possible solutions related to the use of ED services for non-urgent problems.

Conceptual Framework

Individuals are continually presented with situations in everyday life that require adaptation and adjustment. These adjustments are so natural that they occur without conscious effort. This similar approach is described in Betty Neuman's System Model. In this model, the individual is an open system engaging in constant change in accordance to stress. Stressors includes, intra-, inter-, and extra-personal factors. Intrapersonal stressors occur within the person (e.g., emotion, feelings), interpersonal are stressors that occur between individuals (e.g. personal relationship), and extra-personal are stressors that occur outside the individual (e.g., community conflicts). The strength of the individual's line of defense determines if these stressors can produce a positive or negative effect. The normal line of defense includes, physiological, psychological, sociocultural, spiritual, and developmental (Fawcett & Desanto-Madeya, 2013).

Health behaviors related to ED use can be applied to Neuman's Systems Model. For example, an individual will seek emergency help if they perceive an intrapersonal stressor such a change in their usual health. An individual whose family members recommend seeking ED services for any medical problem may have inter-personal stressors. Conflict may arise between family members if they do not comply with their recommendation. Lastly, an individual who experiences inconvenience from the long waits in the primary care office will endure an extra-personal stressor causing them to seek help from the emergency department instead.

The Systems Model can be used to understand the phenomena related to inappropriate ED use. In order to find solutions to this issue, one must seek to the understand the relationship of factors that affects the individual's behavior to seek urgent care. It is not enough to focus on the intra-personal stressors, rather system-level factors must be considered.

Method

Study Design

This is a mixed method project using qualitative and quantitative data to explore factors associated with ED use in adult patients with primary care providers. It was completed in two phases at a large hospital system in Louisville, Kentucky. Phase one was a retrospective chart review of 280 randomly selected patients who were seen in the ED between January 1 to June 30, 2018. Phase two was an interview with ED healthcare staff (Nurses, ED Techs, Physicians, Nurse Practitioners, and Physician Assistants) to identify themes related to the use of the ED among adults with an established PCP for non-urgent conditions.

Study Setting

The ED chosen for this project was a 40-bed department that serves approximately 4,000 patients per month and staffs 100 employees. It is part of a large healthcare system that consists of five hospitals, fourteen urgent care clinics, and numerous primary care offices that serves both adult and pediatric patients in the Greater Louisville and Southern Indiana area. Recent renovations were done in the facility.

Sample

Inclusion criteria for Phase One were patients with an identified PCP, were over the age of 18, and had at least one visit in the ED between January 2018 and June 2018. Patients who were less than 18 years of age and those from long-term care facilities were excluded. ED encounters with acuity level of 3, 4, and 5 were included to focus on non-emergency ED visits. A total of 100 randomly selected patients were evaluated for the project. This sample was obtained from a pool of 21,319 patients identified by the organization's IT department.

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For Phase Two, inclusion criteria consisted of any ED staff who were willing to participate in a structured interview. All levels of healthcare providers (physician, nurses, ED technicians, nurse practitioners, and physician assistants) were invited to participate. A total of 31 interviews were performed consisting of 4 ED Physicians, 3 Nurse Practitioners, 4 Physician Assistants, 14 registered nurses, and 4 ED technicians.

Measures and Procedures

Approval from the University of Kentucky Institutional Review Board (IRB) and the Healthcare System's Office of Research and Administration (NHORA) was obtained prior to data collection (Appendix A). The chart review focused on patients' demographic profile, diagnosis, and discharge disposition from the ED. The chart was also examined for the patients use of their primary care provider as well as their frequency of ED visits that took place during the study timeframe in the same hospital system setting. Informed consent was not obtained for this phase as no patient interaction or implementation was conducted.

Phase 2 was a voluntary semi-structured interview with the ED staff. Participants were provided a brief written explanation of the study. A written consent was obtained prior to each interview. All interviews were conducted in a private setting within the emergency department at their convenience. The participants were asked open-ended questions discussing the issue of ED use for non-urgent conditions. In Appendix A is the copy of the interview form and informed consent. Interviews responses and observations were recorded through shorthand notes.

Data Analysis

Data analysis was conducted using SPSS Version 26. Descriptive statistics including frequency distribution, means, and standard deviations were used to summarize the patient demographics, visit characteristics, and presenting symptoms. Relationships between the use of

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their PCP and ED visits were completed using Chi-square and other correlational statistics. Significance level was set at $p < 0.01$. The ED staff interviews were analyzed and organized to find common themes regarding the definition, contributing factors, consequences, and possible solutions to the ED use for non-urgent conditions.

Results

Chart Review

Patient Demographics. A total of 280 randomly selected patients were evaluated for this project out of a pool of 5,206 patients identified as seeking ED care for non-emergency conditions during the study period. The study sample was primarily females (60%) and identified as Caucasians (73%). The next most common ethnicity was African American (22%). The age range of the sample was between 18 and 93 years of age with a mean of 55 years. Most patients were between the ages of 45-64 years old (37%). The majority had public insurance (68%), followed with those with private insurance (31%), and self-pay (1%). See Table 1. I would just say See Table 1.

ED Visit Characteristics. Only those patients with an ESI above three were included in the study. Majority of the patients had an acuity level of three (74%). Most of the patients walked-in to the ED (75%) while others were brought by the ambulance (25%). The ED arrival between during and after office hours had a similar distribution (52% and 48%) while 25% of the patients had ED visits on the weekends. The most commonly seen diagnoses were abdominal pain (24%) and musculoskeletal pain (17%) (Table 2). Ninety-four percent were discharged home. Five left against medical advice, and only one patient was admitted. Table 2 shows the data for visit characteristics.

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Utilization of PCP and ED. Approximately 27% (n=76) of the sample had at least two or more ED visits during the study period. The majority returned for a different complaint while 10% had a repeat visit for the same complaint. Nearly half of the sample (46%) had at least one missed PCP appointment in the study period. The average of missed PCP visits ranged between one and four. There was a significant and positive association between the number of missed appointments with the PCP and frequency of ED visits ($r=0.151$, $p=0.012$). This association remained significant for ED use for a different complaint ($r=0.230$, $p<0.001$). There was no relationship between repeated ED visits for the same complaint ($r= -0.051$, $p=0.397$).

Qualitative Interviews

A total of 31 interviews were conducted. The pool of participants consisted of 4 ED Physicians, 3 Nurse Practitioners, 4 Physician Assistants, 14 registered nurses, and 4 ED technicians. This represented approximately 30% of all ED staff. Their responses had little variation and therefore only the common themes are presented.

Reasons for Non-Urgent ED Visits. The participants cited the most common non-urgent visits included: sore throat, cough, congestion, earache, vaginal issues, and chronic pain. There were also non-urgent ED visits for chronic problems that could be managed in the primary care settings. Several responses also pointed toward ED visits that are for situations where the patient simply needs a work note.

Contributing Factors for Non-Urgent ED Visits. Participants described the following contributing factors for non-urgent ED visits: convenience, access, overestimated urgency of their symptoms, and societal expectations for immediate results. They also cited that patients often report difficulty obtaining an immediate appointment with their PCP. One participant reported “society expects immediate results and when it is not accomplished impatience

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follows”. They described how patients often seek care from the ED at any time as there is no need for an appointment. Participants felt many patients simply do not know how to use the ED or preventative health measures to avoid the need for ED care. Other responses cited that PCP and Urgent Care Centers make inappropriate patient transfer to the ED because of office hour availability.

Consequences of Non-Urgent ED Visits. Most respondents stated that non-urgent ED visits result in higher healthcare costs, and longer ED wait times for all patients who have urgent as well as non-urgent conditions. These factors contributed to decrease in job and patient satisfaction. Further, non-urgent ED visits contribute to ED crowding related to high patient volume.

Possible Solutions to Non-Urgent ED Visits. Recommendations to reduce non-urgent ED visits included: expansion for PCP access, improvement with health literacy, and up-front or penalty fees for non-urgent ED visits. Participants reported the need to increase PCP availability by expanding their office hours. They also recommended the use of 24-hour urgent care clinics to better serve patients seeking care for non-emergent conditions. Another suggestion was to provide educational programs that would address the difference between the roles of the ED, PCP, and Urgent Care Centers. One response cited that “the patient will seek care at the appropriate healthcare clinic if he recognizes and adheres to what is a “true” emergency.” Many participants also reported the need for a disciplinary approach to address ED visits for non-urgent conditions, especially for those with free insurance. One participant stated,

“There is not a reason for people on Passport to be seen in [the] ED [for non-urgent concerns]. People who pay for services must decide if it is worth being seen for said

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complaint. If you never have to pay, you never need to have that conversation, you expect that your every complaint is urgent.”

Suggested repercussions included the need for up-front fees or higher co-pays for non-urgent ED visits. Other recommendations cited need for care management team who can encourage patients after an ED visit to follow-up with their PCP or help them get established with one. Lastly, many participants suggest the use of urgent care and retail clinics to “act as bridge for the lack of PCP coverage and availability.”

Discussion

This study utilized both qualitative and quantitative data to explore the issue regarding ED use among adult patients with PCP. Several factors were identified in this study that resonated with those found in the literature. Recognizing the extent of the problem along with new financial disincentives makes the problem more urgent for hospital systems.

Chart Review

Most patients identified in this project as being seen in the ED for non-emergency conditions were females, Caucasian, those with public insurance and were between 45-65 years of age. This is unlike the demographics found in the literature wherein African American and younger adults are more likely to use the ED for non-emergency conditions (Uscher-Pines et al., 2013; Gindi et al., 2016). Possibly these results are related to the location of the study setting and the way sampling was conducted.

Most of the identified patients walked-in to the ER, but a fraction also came using the ambulance (25%). The use of ambulance as transportation to the ED further explains the subjective perception of their condition’s severity and convenience as reason for seeking ED care for non-emergency concern. Patients have been noted to use ambulance services if they

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perceived the need to expedite their care (Lobachova et al., 2014). It is unclear if geographic distance and cultural behaviors may also affect ambulance use.

Non-emergency ED visits in this sample were evenly distributed between during- and after-office hours. This differs from that found in the literature where after-office hours are when most non-urgent ED visits occur (Uscher-Pines et al., 2013). This variance may be related to the data sampling and the expansion of urgent care offices in the healthcare system where the study was completed. From the result of this sample, the most common conditions included abdominal and musculoskeletal pain which is like that of other research findings (Hsia & Niedzwiecki, 2017; Kim et al., 2017).

In this project, the correlational analysis between missed PCP appointments and frequency of ED visits shows a significant relationship ($r=0.151$, $p=0.012$). This association remained significant for repeat ED visits for *different* complaints ($r=0.230$, $p<0.001$). The relationship between these two variables suggest that issues with PCP access has an impact on ED visits for patients with non-emergency conditions.

On the other hand, the analysis also found no relationship between repeat ED visits for the *same* complaints and missed PCP visits ($r=-0.051$, $p=0.397$). This indicates that health condition may have been adequately addressed during the initial ED visit or possibly with their PCP during the follow-up visit. This result is similar to that of Uscher-Pines (2013) who reports that ED visits are associated with missed PCP visits.

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ED Staff Interviews

General themes from ED staff interviews resulted in several themes regarding visits for non-emergency use. Comments centered on the need for patient education, patient wanting instant gratification, access issues, and patient accountability for their own healthcare. Providers struggle with meeting the demand of the consumers, insurance companies, and the organization that they work for. There is a perception that the new movement on health consumerism and reimbursement payment plans for ED use will continue to make the problem more complex (Carman, Lawrence, & Siegel, 2019; CMS, 2018).

Patient satisfaction is a key contributor for provider reimbursement across levels of patient care. Centers for Medicare and Medicaid Services (CMS) now measures wait times and response time for pain treatment in the ED as part of patient satisfaction to determine reimbursement (Press Ganey, 2015; CMS, 2018; Carman, Lawrence, & Siegel, 2019). This movement drives the spirit of continuous improvement where different hospitals compete to outdo each other's metric scores for hospital reimbursement and patient's attention and business (Pickerell, 2019). As a result, many EDs are trying to improve their ED LOS and customer service tactics which may contribute to the patient's perception of convenience. This phenomenon, in addition to the current issues with PCP access, may make the ED a more desirable place to seek health services.

Another frustration that the ED staff described was the patient's lack of accountability for inappropriate use of health services. Across the literature review, Medicaid patients are high users of the ED for conditions that can be managed in a or the primary care setting (Uscher-Pines et al., 2013; Maeng, 2017; Gindi et al., 2016; Coster et al., 2017; Hefner et al., 2015). The underlying implication is there may be issues with PCP access and patients needing to

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understand what constitutes the need for emergent care. Those interviewed in this project also described that these behaviors may be related to convenience, a lack of education regarding basic self-care, and the most appropriate setting for treatment of their symptoms.

Many of the interview respondents also reported that Medicaid patient's inappropriate use of the ED is reinforced as there is no financial risk for their behavior. Often there is no co-pay at the time of an ED visit unlike a minimum co-pay to see their PCP. This frustration was echoed by the majority of the ED staff who suggested the need for disincentive programs, educational campaigns, and improved PCP access as partial solutions to decrease non-emergency ED visits. These responses are comparable to those reported by Morley et al., (2018) who also discussed possible consequences to the healthcare system.

The cumulative frustration with the inappropriate use of the ED is explained by these themes. The overload to the healthcare system is a consequence for this type of health seeking behavior. Many of the interview responses reported that inappropriate ED use results with increased healthcare cost, staff burnout, patient dissatisfaction, and decreased care quality. These responses mimic the findings by Morly, et., al., (2018), George and Evridiki (2015), and Galarraga and Uscher-Pines (2018). The result is an incongruence with expectations between patients, healthcare providers, and ED administrators. Each of these stakeholders must be considered when designing the interventions.

Implications

Review of the literature indicates that ED use for non-emergency condition is a multifactorial problem. Resolving one influencing factor alone is not enough to improve healthcare utilization. Medicaid patients continue to visit the ED for non-emergency conditions despite the expansion of primary care access to low-income individuals (Taubman et al., 2014). For this reason, assessment on how motivating factors interact is important as they influence the person's decision to seek care (Anderman, 2016; Braveman & Gottlieb, 2014; Healthy People 2020, 2019). The ED use for non-emergency use must be examined using the System Model Framework to determine solutions and its impact at the intra-, inter-, and extra- system level (Fawcett & Desanto-Madeya, 2013).

Intra-level

The motivation to seek ED care for non-emergency conditions are complex. For example, Botelho et., al., (2018) found that approximately half of ED patients overestimate their symptoms despite providing financial incentive to accurately rate their severity. This evidence implies that internal motivators (e.g., physiological need and safety) continues to play a major role in the individual's decision to seek care even with the external motivators in place (e.g., avoid punishment or earn rewards). These competing factors indicate the importance of evaluating patient perspectives as guidance to better understand the demand of emergency care.

One method to understand patient perspective is identify other motivating factors for health anxiety related to non-emergency ED visits. Reported factors for health anxiety includes patient's uncertainty of their condition and issues with PCP access (Rising et., al., 2018). Other factors related to higher levels of physiological and safety needs may also need investigation to further understand effects of social determinants on emotional state and decision to seek ED. For example,

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is the sore throat an emergency because of the experienced symptom or is it due to financial consequence from missing work from feeling unwell? Is it an emergency because the sore throat now prohibits the person from taking care of her child while also managing other life stressors? This warrants an investigation as the Medicaid patients consist mostly of individuals who experience many life stressors from low-socioeconomic status.

Comparison of community norms with the behaviors related to meeting basic needs can also help explore the biases for non-emergency ED use. Some of the biases includes cultural and educational issues as reason for inappropriate ED use (Sieck, et., al., 2016). Identifying the root for health anxiety can help develop plans for interventions by outlining the decision-making style and risk aversion behaviors in ED users for non-emergency conditions.

Inter-Level

Rising et., al., (2018) reports that patient's decision to seek ED care is related to their emotional state, trust, and satisfaction of the healthcare system. This relationship makes it important for PCP and their offices to improve patient rapport to influence these factors positively. One method to explore is assessment of key messaging with triage and healthcare provider for building a trustful relationship in primary care setting. For example, are patients educated on the use of "sick visit" time slots to avoid uncertainty for getting a timely appointment for acute conditions. What methods are used to promote and encourage self-care for common ailments? What interventions can be used to improve PCP office triage to encourage appropriate ED visits? Do PCP provide adequate information on other health services available for acute conditions? Do healthcare providers provider patient guideline on how and when to use different health services appropriately?

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Education campaigns and disincentive programs are effective when coupled together as individually their effects only produce short-term results. Providing education on how to define an emergency needs to be constantly reinforced (Morley, Unwin, Peterson, & Stankovich, 2018). Intrinsic to this understanding is the patient's health literacy. Those in the Medicaid population are in a lower socioeconomic status, which has a relationship with lower health literacy (Rikard, Thompson, McKinney, & Beuchamp, 2016). This relationship further complicates the effectiveness of education campaigns.

Extra-Level

Patient's decision to seek ED care for non-emergency condition is also related to the treatment quality (Rising et al., 2018). Measure for care quality includes timely and efficient care through improved access (IOM, 2001). Some of the proposed interventions to increase PCP access includes expanding access of office hours and allowing 24-hr testing availability for labs and radiology. These interventions need investigation to identify its effects on the workforce demand and supply in primary care setting.

Expansion of PCP access will require collaboration and use of technology to facilitate an effective intervention. It is reported that the need for PCPs will exceed the future supply of primary care providers (The Health Resources and Services Administration [HRSA], 2013). In comparison, the growth in Nurse Practitioners (NP) workforce will increase more than the PCP Physician supply between 2010 to 2020 (30% and 59% respectively) (The Health Resources and Services Administration [HRSA], 2013). For this reason, interprofessional collaboration with Nurse Practitioners is essential to help fill the needs in primary care.

Information technology is another method to investigate for expanding healthcare access in primary care. Telemedicine is a new approach that uses information technology and

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telecommunication to improve quality and access to care through virtual health services (American Academy of Family Physicians [AAFP], 2018). The technology eliminates the need for expansive offices to evaluate patients because it allows medical consultation to care to take place over the internet regardless of time and location (Kahn, 2015). This method improves convenience and cost of care as it eliminates additional resources needed to care for patients (Kahn, 2015). Some of the healthcare organizations currently utilizes telemedicine with care delivery for non-urgent conditions. Health services are provided for non-urgent conditions such as coughing, the cold, and allergies through virtual care to minimize issues with obtaining timely appointments (Norton Healthcare, 2018).

Lastly, policy advocacy is necessary to re-evaluate the money spent on non-emergency visit specially for Medicare recipients to identify the ownership of the issue. The healthcare organization must explore how disincentive programs can reinforce behaviors for health spending accountability. The healthcare system must also investigate the effects of the new reimbursement plan on non-emergency ED visits. The organization must produce quality care but also encourage appropriate use of health services to avoid wasteful healthcare spending.

Limitations

There were several limitations identified from this project that affects its generalizability. The selected site for the project was in an urban setting. The selected setting encounters higher acuity patients compared to other hospital within the healthcare system which may have contributed to the ED staff perceptions as well. This ED admits approximately 27% of its patients while the other four hospitals within the same healthcare system only admits 16% despite using the same ED Provider groups. Moreover, the project time period overlapped as the new hospital reimbursement plan was implemented. This new plan includes improving wait times in the ED and

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provider's response to treating patients pain in the ED. Their perceptions may have been in part due their own frustrations with the new policies (Pickerell, 2019).

Other limitations also include the project method and demographics. This study only included healthcare ED staffs for the interview leaving out the patient perspective. Patient's perception may have provided a better picture of why the ED is used for non-emergency use. An opportunity for future research is to also conduct a similar study on the pediatric population as this specialty experience different conditions that warrants emergency care compared to adults. Another limitation is the exclusion of the perspective from insurance companies which may highlight the issues regarding the cost of non-urgent ED visits.

Lastly, the inter-rater reliability for determining the acuity level for each ED patient encounter is another limitation. Although the selected ED setting requires all ED nurses to provide annual evidence of competency with ESI algorithm use, it is interesting to determine if there are variance in how different triage nurses assign acuity level to each patient in a real-life setting.

Conclusions

The inappropriate use of the ED is a multifactorial issue that negatively affects healthcare cost and quality. This problem causes frustrations to both patients and healthcare providers because it burdens the health care system. Improving this problem will require policy change, community effort, and accountability from both patient and providers to promote appropriate health-seeking behaviors. The investigation of issues related to cultural, education, and access is needed to identify effective solutions.

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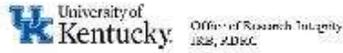
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Appendix A. IRB Approval



IRB Initial Review

Approval Ends:
11/27/2019

IRB Number:
469.25

TO: Sherry Tolson
Nursing Instructors
P: phone #: 502-333-4964
E: Email: Sherry.Tolson@uky.edu

FROM: Chairperson/Vice Chairperson
Medical Institutional Review Board (IRB)

SUBJECT: Approval of Protocol

DATE: 11/29/2018

On 11/29/2018, the Medical Institutional Review Board approved your protocol entitled:

Evaluation of Emergency Department Utilization in Adults with Primary Care Providers

Approval is effective from 11/29/2018 until 11/27/2019 and extends to any amendments (for example, contact phone no. If applicable, the IRB approval documentation document(s) to be used when enrolling subjects can be found in the "All Attachments" section of your e-IRB application. (Note, subjects can only be enrolled using amendments which have valid IRB Approval and unless special waiver has been obtained from the IRB.) Prior to the end of this period, you will be sent a Continuous Review Report Form which must be completed and submitted to the Office of Research Integrity so that the protocol can be reviewed and approved for the next period.

In implementing the research activities, you are responsible for complying with IRB decisions, conditions and requirements. The review procedures should be implemented as approved to the IRB protocol. It is the principal investigator's responsibility to ensure any changes proposed for the research are submitted for review and approval by the IRB prior to implementation. Protocol changes made without prior IRB approval in circumstances prohibited in the subject(s) should be reported to writing immediately to the IRB. Furthermore, discontinuing a study or completion of a study is considered a change to the protocol's status and therefore the IRB should be promptly notified in writing.

For information describing investigator responsibilities after obtaining IRB approval, download and read the document: [PI Obligations in Research Subjects](#), [Qualification, Consent and Documentation of Human Subjects Research](#), available from the online Office of Research Integrity's IRB System Handbook. Additional information regarding IRB review, federal regulations, and institutional policies may be found through [OIR's web site](#). If you have questions, need additional information, or would like a paper copy of the above-referenced documents, contact the Office of Research Integrity at 502-327-9422.

Appendix B. Staff Interview Data Collection Form

ED Role (e.g., RN, Tech, NP, MD, etc.)

- 1. What is considered an inappropriate ED visit?**

- 2. What factors contribute to inappropriate ED visit?**

- 3. What are the consequences of inappropriate ED visit?**

- 4. What would help improve inappropriate ED use in adult patients?**

- 5. What is the role of Urgent Treatment Clinics (UTC) and Ready Clinics in serving those who seek care outside of their PCP?**

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Table 1. Demographics of selected patients who presented in the ED between January 1 and June 30, 2018 (n=280)

Variables	% (n)
Age	
18-29	11(33)
30-44	19(53)
45-64	37(103)
65+	33(91)
Gender	60(170)
Female	40(110)
Male	
Race	
White	73(203)
African American	22(61)
Hispanic	3(9)
Others	2(7)
Insurance	
Public	66(185)
Private	33(93)
Self-Pay	1(2)

EVALUATION OF EMERGENCY DEPARTMENT USE BY ADULT WITH PCP

Table 2. Description Summary of ED Diagnosis (n=280)

Variable	%(n)
Abdominal Pain	24(68)
Musculoskeletal Pain	17(47)
Shortness of Breath	6(18)
Syncope/Fall	5(15)
Chest Pain	5(15)
Other	4(12)
Dizziness	4(10)
Fever	3(9)
Extremity Infection	3(9)
Stroke-like Symptoms	3(8)
ENT	3(8)
Cough/Congestion	3(7)
Extremity Swelling	3(7)
Substance Abuse	3(7)
Nausea/Vomiting/Diarrhea	2(5)
Laceration	2(5)
Headache	1(4)
SIGU	1(4)
Hyperglycemia	1(4)
Kidney Problem	1(4)
Extremity Bleeding	1(4)
GI Bleeding	1(3)
MVA	1(3)
Rash	1(3)
Seizure	0(1)

EVALUATION OF EMERGENCY DEPARTMENT USE BY ADULT WITH PCP

Table 3. Visit Characteristics of selected patients who presented in the ED between January 1 and June 30, 2018 (n=280)

Variable	%(n)
Acuity Level	
3	74(207)
4	25(72)
5	1(1)
Arrival	
Walk-in	75(209)
Ambulance	25(71)
Disposition	
Home	94(264)
Admitted	0.5(1)
Transfer	0.5(1)
Other (against medical advice, home health)	5(14)