University of Michigan Emergency Department

Current State of the Medication Reconciliation Process in the University of Michigan Health System Adult Emergency Department

Final Report

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Executive Summary

The Adult Emergency Department (ED) of the University of Michigan Health System (UMHS) is one of the busiest departments in the University of Michigan Hospital with 79,000 visits each year [1]. When patients arrive to the Adult ED, they go through triage where a triage nurse goes through Medication Reconciliation (MedRec) with the patient. MedRec is a formal process that compiles a complete and accurate list of the patient’s current medications. This medication information is transferred to the next healthcare provider who will see the patient in the Adult ED. According to the US National Library of Medicine, MedRec helps determine and eliminate medication errors, which represent the most common patient safety error [2]. The physician, nursing and pharmaceutical leadership team of the Adult ED noted that the current MedRec process does not reflect the established protocol for MedRec. The true current state of the MedRec process is unknown and the lack of exact understanding of the process can increase the likelihood of medication list errors, which can compromise patient safety. The ED multidisciplinary team asked Team 2 from the University of Michigan IOE 481 class to observe and analyze the MedRec process and report the true current state of the process and make recommendations based on findings. This report consists of two main deliverables: a statement of the true state of the MedRec process and how it differs from the expected process, or the ideal practice, and the team’s recommendations to clarify the process for the Adult ED provider team.

Background

Nurses in the UMHS Adult ED typically conduct the medication reconciliation process. A triage nurse records what the patient is taking by speaking to the patient. The patients report what they are taking based on their memory or a printed list. Nurses at the UMHS Adult ED, compare what the patient’s report to their medical information chart. Approximately 85% of the patients who are admitted to the Adult ED already have a chart within the UMHS recording system [3]. The UMHS uses an electronic system called MiChart, developed by the healthcare software company Epic, to record all patient medical information.

The triage nurse notes discrepancies with the existing chart and what the patient reports. There are three main types of discrepancies:

1. The chart has medication the patient claims to not be taking
2. The patient claims to be taking a medication not recorded on the chart
3. The medication recorded on the chart and reported by the patient do not match in dosage or frequency

Methods

The team used four methods of data collection: (1) preliminary observations; (2) time studies; (3) triage nurse/provider interviews; and (4) triage nurse/provider surveys. In addition, the team gathered MiChart triage data from 58,586 Adult ED patient encounters in the 2014 year. For the time studies, the team averaged the amount of time triage takes and the average amount of time MedRec specifically takes from a sample size of 29. After 30 hours of preliminary observations, the team formulated scale questions (1-10) or checkbox questions to include in the surveys and interviews that helped gather information. The team acquired 45 respondents for the triage nurse survey and 52 respondents for the provider survey.
Findings and Conclusions

Preliminary Observations From preliminary observations, the team found that the nurses believe the MedRec process is lengthy and time consuming, and concluded that doing a thorough MedRec is time consuming. Length MedRec can cause a longer triage process which during peak time in the Adult ED can create safety concerns. No standard procedures for MedRec were observed, which indicates possible discrepancies between how each triage nurse performs the MedRec process. Physicians were observed to only ask about a few medications per patient; the team concluded the physicians did not seem to play a very large role in the thorough MedRec process except to confirm critical medications with patient.

Time Studies The team completed a time study of 29 triage nurse-patient encounters. The team split the time study data into general MedRec time (all data points) and thorough MedRec time (data points in which triage nurses asked about each specific medication). The time study conducted by the team indicated that there is little difference between general MedRec time (mean 1.9 min) and the thorough MedRec time (mean 1.9 min). This result suggests that doing a thorough MedRec adds negligible time to the process, however, the result may also be due to the small sample size of the observations overall and the small number of MedRec times for instances where triage nurses did not conduct a thorough MedRec. The data also shows that on average the percentage of triage time spent doing medication reconciliation when the triage nurse asked about every medication in the medication list was 26.2% of the total triage time.

MiChart Data Analysis The team used the MiChart data given by the project coordinators to determine the average time spent triaging patients in the Adult ED. After cleaning up the data, the team found that on average triage nurses spent 6.12 minutes with patients during triage. This number is smaller than the one the team found by conducting the time study, which was 7.03 minutes. This may be due to the small sample size of the time study which only included 29 observations, or observing triage nurses in the triage room may cause them to do more thorough MedRec, therefore creating bias. Some triage nurses also directly told team members that they were doing a more thorough MedRec since they were being watched. Since the MiChart data has a sample size of 58,586 and is less likely to be affected by bias, the team believes it more accurately represents how long the triage process takes.

Triage Nurse Interviews The team determined that nurses felt updating and deleting medications off the medication list is more time consuming than desired. Triage nurses felt that increasing the speed of medical reconciliation is more important than increasing its accuracy. When asked how triage nurses felt about providers doing MedRec instead of them, 52% of them felt it would decrease the time they spent with patients, but the time patients spend in the Adult ED would most likely stay the same. Triage nurses would also prefer a job position designated specifically to MedRec and 50% felt it should occur after triage, before seeing a physician.

Provider Interviews The team determined that providers were mainly concerned with the medication list being accurate, the medication list containing expired drugs, the MedRec process taking too long, and not knowing if triage nurses did a thorough MedRec. Over 90% of providers felt that increasing the accuracy of medical reconciliation is more important than increasing its speed. Providers also explained that they were unaware of medications being removed off the
medication list. When asked how providers felt about doing MedRec instead of triage nurses, most of them felt it would increase the time patients spend in the Adult ED. Providers would also prefer a job position designated specifically to MedRec.

_Triage Nurse Surveys_ The team determined that the 84% of triage nurses believe that MedRec is important to the Adult ED. Most triage nurses responded that the most important point in time to know the complete accurate list of patient meds was at Triage and the time of the First Prescribed Med. Over 66% of nurses recommended implementing a job position solely for the purpose of MedRec at the primary care nurse evaluation. The team noticed a distinct discrepancy shown in the nurses’ interpretation of clicking the Red X vs ‘Not Taking.’ The most distinct difference is a breakdown in interpretation of the patients’ status: nurses are clicking Not Taking when they should be hitting the Red X to delete the medication.

_Provider Surveys_ The team determined that 85% of providers believe that MedRec should occur before the medical provider evaluation. When asked if there should be a job position specifically for doing MedRec, 55% of the providers would like a pharmacy technician to do MedRec.

_Summary of Conclusions_ The team determined that providers and triage nurses are unaware of what the other party views in MiChart, nor do they follow a standard MedRec procedure. The time studies indicated that MedRec consumes only 26% of the total triage time. Interviews indicated that providers are unsure of whether triage nurses had performed a thorough MedRec, triage nurses would prefer MedRec to take place after triage and before the provider evaluation, triage nurses are concerned with speed while providers are concerned with accuracy, and both parties prefer there be a job title specifically for MedRec. Surveys indicated that providers feel pharmacy technicians should perform MedRec, and triage nurses and providers have differing opinions on the role of the triage nurse in regards to MedRec.

_Recommendations_ After all the data was collected, the team formulated recommendations and improvements for the MedRec process in the Adult ED. The team recommends (1) requiring triage nurses to update the Med List Status before being allowed to click Mark As Reviewed to close out the Home Medications tab. This will allow the provider to be aware of the potential accuracy of the patient’s list when they see the patient. The team recommends (2) implementing a drop-down menu requirement for the triage nurses to notate the reason why a patient is Not Taking a medication. This will equalize the time it takes to click the Red X and Not Taking, thus removing the incentive for triage nurses to break protocol to save time triaging patients. The team recommends (3) implementing a new job title that holds complete ownership of the MedRec process in order to ensure 100% accuracy after MedRec. The team recommends pharmacy technicians to hold this shift and perform MedRec after triage and before the provider evaluation. An alternative recommendation to (3) is (4) reallocating MedRec ownership to occur during the primary nurse evaluation. The team also recommends (5) comprehensive re-training seminars for all Adult ED medical personnel including separate and joint sessions. This will allow all parties to be aware of their own and others’ priorities regarding MedRec and increase incentive to follow established MedRec protocol.
Introduction
The Adult ED at the UMHS sees over 79,000 patients annually [S]. Upon arrival at the department, patients go through triage with a medical provider, typically a Registered Nurse (RN) that is working a triage nurse shift. As a part of the triage process, the triage nurse will go through Medication Reconciliation (MedRec) with the patient. This formal process is meant to review and update the patient’s list of current medications and compare the list to those in the patient’s record or past medication orders. This medication information is available to the next healthcare providers that encounter the patient during their stay in the Adult ED. These providers will use the list of current medications to further evaluate the patient to determine the patient’s appropriate treatment plan. The MedRec process is meant to eliminate medication errors which represent the most common patient safety error, according to the US National Library of Medicine [2].

The multidisciplinary leadership team of the Adult ED noted that the current MedRec process does not match the expected protocol for MedRec. Currently, the process is understood and interpreted differently by triage nurses and medical providers (Physicians, Residents, and Physician’s Assistants), and each individual party approached the specific UMHS MedRec protocol differently. Therefore, the exact current state of how the MedRec process is being executed is unknown. This lack of thorough understanding of the process increases the likelihood of medication errors, which can compromise patient safety. The ideal purpose of MedRec according to the Team’s pharmaceutical client is for a patient’s medication list to be 100% accurate by the completion of Medication Reconciliation. Medication Reconciliation needs to be completed by the time of the first prescribed medication.

The ED pharmaceutical, nursing, and physician leadership team asked Team 2 from the University of Michigan IOE 481 class to observe and analyze the MedRec process in the Adult ED to report the true current state of the MedRec process and make recommendations to accomplish the ideal purpose of MedRec in accordance with the pharmacist’s guidelines. This report consists of two main deliverables: a statement of the true state of the MedRec process and how it differs from the expected process, or the ideal practice, and the team’s recommendations to clarify the process for the Adult ED provider team.

Background
Inaccurate MedRec is known to result in longer hospitalization according to the physician and pharmaceutical Adult ED leadership team. Studies have shown that 67% of all patients have at least one medication error on their medication history upon admission. Medication Reconciliation is meant to avoid medication errors such as omissions, which occur 87.9% of the time, and incorrect doses, which occur 8.1% of the time [2]. These errors result in increased patient monitoring and the need for interventions to avoid patient harm.

Basic MedRec Steps
Medication Reconciliation compares the patient’s medications orders listed on the patient’s chart to the medications that the patient claims to be taking. MedRec is all healthcare providers’
responsibility. Throughout healthcare practices, the generic process template is comprised of five basic steps:

1. Develop a list of current medications
2. Develop a list of medications to be prescribed
3. Compare the medications on the two lists
4. Make clinical decisions based on the comparison
5. Communicate the new list to relevant healthcare providers and the patient

At the Adult Emergency Department in the UMHS, these steps occur when the patient enters triage. In the Adult ED, the specific, detailed execution of this basic framework is unknown. Triage can take place in a triage room or in a bed if a bed is available at the time. Refer to Appendix A for a basic depiction of patient flow through the Adult ED.

Initial Screening
The triage process directly impacts the rate at which a patient will get to a bed in the ED. Regardless of the manner of entry, when a patient enters the Emergency Department the patient interfaces with the Screening Nurse in the lobby/waiting room of the ED. This screening nurse will ask basic patient information such as name, age, and address, and the reason the patient arrived to the ED. Based on the information provided by the patient or EMT escorting the patient in the case of an ambulatory entry, the screening nurse will assign an acuity level to the patient’s condition. This information is all recorded in the patient’s electronic records. The acuity level is based on a scale from 1-5, as listed below:

   Level 1: Resuscitation
   Level 2: Emergent
   Level 3: Urgent
   Level 4: Less Urgent
   Level 5: Non Urgent

If the patient is not a trauma patient (immediate resuscitation needed, or acuity level 1) the patient will be triaged. At this point in the process, the triage nurse will obtain a set of vital signs, a chief complaint, past medical history, and a list of current medications from the patient. The section of triage of obtaining a list of current medications from the patient is considered Medication Reconciliation.

Expected Process - Home Medications List
Nurses in the UMHS Adult ED typically conduct the medication reconciliation process. A triage nurse records what the patient is taking by speaking to the patient. The patients report what they are taking based on his or her memory or a printed list. The healthcare provider, typically nurses at the UMHS Adult ED, compare what the patient report to their medical information chart. Approximately 85% of the patients who are admitted to the Adult ED already have an encounter with the UMHS recorded in the system. The UMHS uses an electronic system called MiChart, developed by the healthcare software company Epic, to record all patient medical information. If a patient has no existing record at the UMHS, the triage nurse will make a new chart for the
patient. Since the degree of accuracy of an existing medical record is based solely on the word of the patient, it varies and is extremely difficult to quantify or verify [5].

If the patient already has medication information on file, the triage nurse compares the information the patient gives to his or her existing chart to confirm all the medication. According to the service chief in the Adult ED, patients admitted to the Adult ED already have about 4-6 medication orders on average already listed. In the UMHS MiChart system, there are two types of groupings that the Home Medications can be listed under: Prescribed and Patient Reported. An example of the Prescribed section in the Home Medications list can be seen in the MiChart screenshot depicted in Figure 1 below.

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**Figure 1.** Home Medications List - Triage Nurse View. The Prescribed medications are historical entries that the triage nurse does not have access to modify.

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An example of the Patient Reported section of the Home Medications list is illustrated in Figure 2. Triage nurses do have access and are expected to update and modify this section.

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**Figure 2.** Home Medications List - Triage Nurse View. The Patient Reported medications are entries that triage nurses are able to edit in full. Frequently, medications between these two lists can be duplicates.

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**Expected Process - Updating Medication Status**

The triage nurse notes discrepancies with the existing chart and what the patient reports. There are three main types of discrepancies:
1. The chart has medication the patient claims to not be taking
2. The patient claims to be taking a medication not recorded on the chart
3. The medication recorded on the chart and reported by the patient do not match in dosage or frequency

The reasons behind the discrepancies vary. The current medication reconciliation protocol at the Adult ED is for the provider to remove the medication from the list if the patient claims to not be taking it. According to the MiChart/Epic systems training team of the Adult ED, the triage nurse is required to update the status of each medication in the Home Medications list before marking the list as ‘Reviewed.’ Updating the status is defined as clicking one of four main options the Triage Nurse can choose from per (prescribed) medication: Taking, Not Taking, Unknown, and a Red X. Updating the entire list of home medications is required in attempt to send a completely accurate list of what medications the patient is currently taking to the next healthcare provider the patient will see in the UMHS. These options are displayed in the screenshot in Figure 3.

![Figure 3](image)

**Figure 3.** Home Medications options displayed from left to right are Taking, Not Taking, Unknown, and the Red X is circled in red and called out by the red arrow.

UMHS Adult ED triage nurses and physicians are the only two provider parties that are authorized to edit/update the patient-reported medications. At this point in triage, the nurse is expected to follow certain protocol in regards to selecting the four options listed previously. A nurse should click ‘Taking’ if the patient is taking the medication and plans to continue the course of therapy. A nurse would click ‘unknown’ if the patients report they are unsure of whether they are taking the medication at the same dosage or frequency as prompted by the system. A nurse is expected to click ‘Not Taking’ if the patient has, for whatever reason, discontinued use of the medication temporarily, but there are plans to continue taking the medication. A nurse is expected to click the Red X if the patient has, for whatever reason, discontinued use of the medication and does not plan to continue taking. In this case of clicking the Red X, a drop-down menu of 16 options appears. These options are varying reasons why the patient is no longer taking the medication; the nurse must click a reason, and the medication will be deleted from the list. Refer to Figure 4 for a screenshot of the options the triage nurse sees after clicking the Red X.
Figure 4. Sixteen options triage nurse must choose from to complete the 3-click process to remove a medication from the patient’s Home Medications.

Once each medication in the list has been updated according to what the patient reports, the triage nurse should update the field labeled Med List Status with one of the following options: [Blank], Complete, In Progress, Waiting, or Unable to Answer in order to notify the next healthcare provider the status of the Home Medications list. If the triage nurse does not change this field, the default is to leave the status blank. See Figure 4 for an illustration of this field.
Once the Home Medications list is updated, the triage nurse clicks ‘Mark as Reviewed,’ which updates the records in MiChart with a Last Reviewed Date/Time that other healthcare personnel are able to view.

Upon completion of this step, the medications are considered reconciled, assuming that the process was executed flawlessly.

**Expected Process - Provider Medication Reconciliation**

Once the medication list is reconciled, the medication information is transferred to the next healthcare provider. The next provider will be a primary care nurse, then a PA, Resident, or Attending Physician. For the purposes of this report, medical providers refer to PAs, Residents, or Attending Physicians. Ideally, the next provider should operate under the assumption that the triage nurse has accurately reconciled the list. Reference Figure 6 below for a screenshot of the provider’s view of a patient’s Home Medications.

This chart illustrates that a provider is notified if a triage nurse marks a medication as Not Taking, but the provider is not enlightened as to why the patient is not taking the medication. The providers are not alerted to any recently deleted medications or the reasons why they were deleted. That information can be referenced through MiChart, but that information is not relevant to the physician in order to decide on a treatment plan. According to the MiChart training personnel, medical providers are taught during their MiChart training that when they ask patients about the medications the patient is taking, they will most likely receive conflicting answers in comparison to what is reported on the chart. During training, medical providers are taught that they are not required to update the Home Medications list to attempt a 100% accurate list;
however, they are taught the tools and methods to update the list if they choose to while they go through the list with the patients [5].

After receiving care, the patient is discharged or moved to inpatient care. At the discharge point, patients are sent home with an accurate list of their current medications orders. The discharge paperwork is called an After Visit Summary (AVS). Throughout the MedRec process and each medication information transfer, the patient’s medication list is reviewed by each provider at least 99% of the time, as stated by the UMHS Adult ED Service Chief. However, the review does not determine the degree of accuracy of the actual list. The leadership team in the Adult ED is also unsure of whether the manner in which each provider approaches MedRec is affected by the patient’s condition.

MedRec is a process that is expected to occur at each healthcare location that would access a patient’s electronic medical records. Each healthcare location and/or department is responsible for completing a thorough, accurate MedRec, regardless of the last reviewed date listed in the patient’s chart. As will be outlined in a later section, MedRec outside the Adult ED is not within the scope of the team’s project.

To report the true state of the current process and determine a more effective method to ensure accurate information during MedRec, the ED leadership team asked an IOE 481 team to recommend improvements to the current state in order to determine a more effective method to ensure accurate information during MedRec.

Key Issues
The following issues are driving the need for this project:
● Approximately 67% of all patients have at least one medication error on their medication history on admission into the Adult ED
● Resource utilization makes it difficult to obtain accurate medication information
● Patient’s medication lists are not always accurate and up-to-date prior to the physician prescribing the first medication to the patient
● There is concern that the current MedRec process to obtain patient medication information is not optimal and redundant

Goals and Objectives
The goal of the project was to determine the true current state of the Medication Reconciliation process in the Adult Ed and to develop recommendations based on those findings for improvements to the process. The student team wanted to evaluate the MedRec process in an unbiased environment, free from knowledge of predetermined protocols or other’s interpretations of the process, to ensure an accurate view of the current process was accomplished.

The team investigated the MedRec process as well was evaluated improvement opportunities in the current process. To reach these goals, the IOE 481 student team achieved the following tasks:
• Observed the MedRec process from both the triage nurse and the physician perspective and identified areas of inefficiency, incompleteness, and redundancy.
• Interviewed the Adult ED nursing and physician staff to understand the current MedRec process from the differing perspectives
• Surveyed Adult ED nurse and physician staff to gather their assessments of the current MedRec process
• Collect data related to:
  ○ The length of the MedRec process in triage compared to the length of the entire triage process
  ○ The number of discrepancies found in patient medication list transfers within the Adult ED

**Project Scope**

This project focused only on the MedRec process in the Emergency Department of the University of Michigan Hospital. This process begun when the patient entered the Adult ED and began the MedRec process at triage and continued until the physician reviewed and confirmed the MedRec information with the patient in the examination rooms. The MedRec process ended when the patient is discharged from the Adult ED with the discharge summary. The scope did not include any Medication Reconciliation following that point.

Tasks that do not pertain to the University of Michigan Emergency Department’s MedRec process were not considered in this project. Specifically, the project did not include the actual treatment process or patient care in the Adult ED. The project scope also does not consider the medical history or note sections of a patient’s MiChart information. MedRec occurring outside the Adult ED and patient cases involving acuity levels of 1 or 2 were not included in this project.

**Methods**

The team conducted five data collection methods regarding the MedRec process in the Adult ED to help provide recommendations: (1) Preliminary Observations; (2) Time Studies; (3) MiChart data; (4) Triage Nurse/Physician Interviews; and (5) Triage Nurse/Provider Surveys.

**Preliminary Observations**

The observation process started the week of February 16th and continued through the week of February 23rd. The team observed in the Adult ED for 30 hours to get a better understanding of the tasks that the nurses undergo pertaining to the MedRec process. The team was also able to gain a greater understanding of the provider role in the MedRec process. By understanding the events that occur in the process, the team was formulate important questions to get a more thorough knowledge of the flow in the ED.

**Time Studies**

The team conducted time studies in the triage unit of the Adult ED. Members of the group followed nurses back into the triage room with the patient and used a stopwatch to record the timings. The two pieces of time data that the team took were the length of the MedRec process and the length of the whole triage process. The form the team used can be found in Appendix B.
By finding these two average amount of times, the percentage of triage that is spent on MedRec was calculated. A total of 30 patients were timed during their stay in triage. In addition, the team calculated the average amount of MedRec time where the triage nurse asks about every single med on the patient’s home medication list.

**MiChart Data**
The clinical coordinator and Program & Operations Analysts provided the team with MiChart data on the MedRec process from the year 2014. This data allowed to team to analyze the data from a large sample size of 58,586 patients to extrapolate very robust conclusions. The team removed patient data that contained blank spaces for triage times and triage times that exceeded 30 minutes. Based on findings and conclusions from time studies and preliminary observations, 30 minutes triage time are outlying data points most likely due to errors when the triage nurse forgot to click triage end on MiChart or the nurse needed to terminate triage to deal with a patient emergency.

**Triage Nurse/Provider Interviews**
The team prepared interview questions for the triage nurses and providers after performing preliminary observations in the Adult ED. The team interviewed 22 triage nurses and 16 providers. These questions are located in Appendix C and D respectively. The interview process started the week of February 23 and continued to March 9. By conducting these interviews, the team gathered nurse and provider perspectives and opinions on the current MedRec process. During these interviews, one to two team members interviewed each of the Adult ED personnel at a time.

**Triage Nurse/Provider Surveys**
The team prepared survey questions for the triage nurses and physicians after performing preliminary observations in the Adult ED. These questions are located in Appendix E and F respectively. The team initiated the triage nurse survey during the week of February 23rd, and accumulate the responses by the following two weeks. The survey questions were sent through the online website, SurveyMonkey. The team handed out the surveys to the Nurse Manager who sent out the surveys to the entire nursing staff. For the physician surveys, the team sent the questions to the Service Chief who distributed them to the providers that work in the Adult ED. For this project, the team classified physicians, PAs, and residents all under one category called providers. The team used this designation since all three job titles are responsible for the Medical Provider Evaluation step of the overall ED process, thus providers have the same role regarding MedRec in the Adult ED. The team used survey responses from 45 triage nurses and 52 providers to analyze and provide recommendations for improvements.

**Findings and Conclusions**
To understand the current state of MedRec in the Adult ED, the team conducted observations, time studies, MiChart data, interviews, and surveys. The findings and conclusions from these data collection methods are shown below:
**Preliminary Observations**
The team conducted preliminary observations to determine how Adult ED staff felt about the medical reconciliation process and to determine areas of improvement. During preliminary observations, the team noted down major concerns the Adult ED staff had about the MedRec process. The major concerns that the team heard from the Adult ED staff are listed below:

**Triage Nurse Observations**
The major concerns with MedRec that triage nurses mentioned during the preliminary observations are listed below:

- **Time Consuming**
  - The process of deleting a medication is long and labor some
  - The process of adjusting a medication is also very long and tiresome
  - If it is necessary to update the dosage of a medication, it is simpler to delete the medication from the patient’s medication list and then re-add it with the adjusted information
  - The “Home Medications” section of the MiChart system is inefficient and does not update automatically
  - During peak hours in the Adult ED, triaging patients quickly is important to ensure safety of the patients. When a patient comes into the ED, the true state of their condition is not known until after triage has been performed. The MedRec process can become tiresome for the triage nurse and add to the length of the triage process.

- **Lack of standard protocols**
  - Every triage nurse performs MedRec differently
  - There is no standard procedure of when to delete a medication off a patient's medication list or when to deem it as “Not Taking”
  - Some nurses do not delete a medication because they want the physician to see the medication on the patient’s medication list

- **Patients unaware of their medications**
  - Patients come to the ED and do not know what medications they are currently taking or the dosages of those medications
  - Some patients are too flustered due to their condition to remember what medications they are currently taking
  - Some patients do have a medication list on them but it is outdated

**Provider Observations**
The major concerns with MedRec that providers mentioned during the preliminary observations are listed below:

- Physicians only confirm medications that are critical to a patient’s condition
- Physicians do not feel as though MedRec falls under their job responsibilities unless they are confirming critical medication with the patient
• Some physicians worry that patient’s medication lists are inaccurate

From these observations, the team concluded that the nurses believe the MedRec process is lengthy and time consuming. Having a lengthy MedRec means an increase in the time it takes to triage a patient, resulting in more patients having to wait in the waiting room without being triaged. This can cause safety concerns because the true state of a patient’s condition is not known until after triage has been performed. The team also heard that there was no standard procedure for MedRec indicating that there are discrepancies between how each triage nurse performs the MedRec process. Physicians, on the other hand, do not seem to play a very large role in the MedRec process except to confirm critical medications with patient.

**Time Studies**

The team conducted a time study to examine the amount of time triage nurses in the Adult ED spent speaking with patients in the triage rooms and the amount of that time they spent trying conducting medical reconciliation. The team also observed whether the triage nurses asked patients about every medication on their medication list, which the team calls doing a thorough medical reconciliation. From the time study data, the average time triage nurses spent in the triage room speaking with patients was 7.030 minutes and of that 1.864 minutes were spent on average collecting information on the patient’s medications. On average the percentage of triage time spent doing medical reconciliation was 26%. When only looking at the instances where triage nurses asked about every medication (thorough medical reconciliation), they spent 7.099 minutes in the triage room speaking with patients and 1.860 minutes collecting information on the patients medications. On average the percentage of triage time spent doing medication reconciliation when the triage nurse asked about every medication in the medication list was 26.2%. This data is shown in Table 1 below.

**Table 1: Triage and Medical Reconciliation Times**

<p>| Source: Time study data, Data Collection Period: 2/16/15-3/25/15, Sample size: 29 |</p>
<table>
<thead>
<tr>
<th>Mean (minutes)</th>
<th>Std. Dev. (minutes)</th>
<th>Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Triage Time</td>
<td>7.03</td>
<td>2.69</td>
</tr>
<tr>
<td>General MedRec Time</td>
<td>1.86</td>
<td>1.27</td>
</tr>
<tr>
<td>Triage Time (Thorough MedRec)</td>
<td>7.09</td>
<td>2.77</td>
</tr>
<tr>
<td>MedRec Time (Thorough MedRec)</td>
<td>1.86</td>
<td>1.17</td>
</tr>
</tbody>
</table>

The data above shows that on average the general MedRec time and the thorough MedRec time are equal. The data seems to suggest that doing a thorough MedRec only adds little extra time to the process; however, the result may have been due to the small sample size of the observations overall and the small number of MedRec times for instances where triage nurses did not conduct a thorough MedRec. The data also shows that on average the percentage of triage time spent doing medication reconciliation when the triage nurse asked about every medication in the
A medication list was 26.2%. Many triage nurses perceive MedRec to be time consuming, but the team has observed that it only takes about 26.2% of the triage time.

**MiChart Data**
The team used the MiChart data given by the project coordinators to determine the average time spent triaging patients in the Adult ED. After cleaning up the data, the team found that on average triage nurses spent 6.12 minutes with patients during triage. The average triage time was smaller than the one the team found though conducting the time study, which was 7.03 minutes. The team attributed this to the small sample size of the time study which only included 29 observations. It also may be due to the possibility that observing triage nurses in the triage room may cause them to do a more thorough medical reconciliation, therefore creating bias. Some triage nurses also directly told team members that they were doing a more thorough medical reconciliation because they were being watched. Since the MiChart data has a much larger sample size and is less likely to affect by bias the team believes it is a more accurate representation how long the triage process takes.

**Interviews**
The team interviewed Adult ED staff to further understand how Adult ED staff felt about the medical reconciliation process and how they would like to see it be improved. The questions with the most common responses are listed below, along with statistics on numerical answers:

**Triage Nurses Interviews**
Question 1: How would you rate the current MedRec process (on a scale from 1 – 10 with 1 being very poor and 10 being very efficient)?

Figure 7 and Table 2 below show the findings:

![Figure 7: MedRec Process Triage Nurse Efficiency Rating](image)

Source: Interview data, Data Collection Period: 2/16/15-3/25/15, Sample size: 22
Table 2: MedRec Process Triage Nurse Efficiency Rating
Source: Interview data, Data Collection Period: 2/16/15-3/25/15, Sample size: 22

<table>
<thead>
<tr>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.23</td>
<td>1.54</td>
<td>22</td>
</tr>
</tbody>
</table>

Question 1 Conclusions: The results of this question show that on average triage nurses would rate the current MedRec process a 5.23 out of 10 on how efficient it is. Triage nurses are unhappy with the current process and feel that it could be greatly improved.

Question 2: Do you feel that there are any issues with the current MedRec process and if so what?

There were a variety of answers which included:
- The MedRec process is time consuming
- Updating medications is difficult because if changing anything requires deleting the medication and adding the same medication back into the system with the new information
- Providers do MedRec anyway which results in duplicate work
- Medication list has not been updated from the last visit to a primary care physician
- Expired medications still show up on the medication list
- Deleting a medication off the medication list can be difficult because you have to explain the reason for doing it

Question 2 Conclusions: Many of the concerns such as MedRec being time consuming, updating medications being difficult, providers doing MedRec anyway, and deleting a medication off the list being difficult confirm the issues found in the preliminary observations. Triage nurses are concerned with expired medications still showing up on the medication list, which is common due to the previous provider not updating the medication list. It is up to the provider or triage nurse to remove that medication off the list or it will be there indefinitely.

Question 3: What are some improvements you would like to see and how should they be implemented?
- Make changing dosages and frequency of medications easier to update
- Have providers do MedRec
- Have better education on how to use MiChart
- Automatically remove expired drugs
- Not having to explain why a patient stopped taking a certain medication to take it off their medication list

Question 3 Conclusions: Many of the improvements suggested relate directly to fixing the issues mentioned in question 2. Providing better MiChart education, automatically remove expired drugs, and make changing dosages and frequency of medications easier to update are all improvements the team considered when developing recommendations.
Question 4: If you could improve the MedRec process in the Adult ED, would you choose to increase the accuracy of the collected medication information or increase the speed of patient flow?

The team’s findings can be found in Figure 8 below:

![Figure 8: Triage Nurse Accuracy vs. Speed](image)

Source: Interview data, Data Collection Period: 2/16/15-3/25/15, Sample size: 22

Question 4 Conclusions: Most triage nurses feel that they would like the speed of the medical reconciliation process to increase over increasing the accuracy of the collected information. Patients entering the Adult ED generally have serious conditions and must receive care as quickly as possible. Triage is also where the true state of a patient’s condition is first assessed and it is important to assess patients quickly to determine who high priority patients are.

Question 5: On a scale of 1-10, how often do you ask about the specific dosage patients are taking (10 being always, 1 being never)?

Figure 9 and Table 3 below show the findings:
Figure 9: Rating How Often the Triage Nurse Asks About Dosages  
Source: Interview data, Data Collection Period: 2/16/15-3/25/15, Sample size: 22

Table 3: Rating How Often the Triage Nurse Asks About Dosages  
Source: Interview data, Data Collection Period: 2/16/15-3/25/15, Sample size: 22

<table>
<thead>
<tr>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.14</td>
<td>2.87</td>
<td>22</td>
</tr>
</tbody>
</table>

Question 6: On a scale of 1-10, how often do believe other triage nurses ask about the specific dosages patients are taking (10 being always, 1 being never)?

Figure 10 and Table 4 below show the findings:

Figure 10: Rating How Often Triage Nurses Believe Other Triage Nurses Ask About Dosages  
Source: Interview data, Data Collection Period: 2/16/15-3/25/15, Sample size: 18
Table 4: Rating How Often Triage Nurses Believe Other Triage Nurses Ask About Dosages
Source: Interview data, Data Collection Period: 2/16/15-3/25/15, Sample size: 18

<table>
<thead>
<tr>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.00</td>
<td>1.14</td>
<td>18</td>
</tr>
</tbody>
</table>

Question 7: On a scale of 1-10, how often do you ask patients specifically about every home medication that is listed on the patient’s MiChart (10 being always, 1 being never)?

Figure 11 and Table 5 below show the findings:

Figure 11: Rating How Often the Triage Nurse Asks About Every Specific Medication
Source: Interview data, Data Collection Period: 2/16/15-3/25/15, Sample size: 22

Table 5: Rating How Often the Triage Nurse Asks About Every Specific Medication
Source: Interview data, Data Collection Period: 2/16/15-3/25/15, Sample size: 22

<table>
<thead>
<tr>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.64</td>
<td>2.04</td>
<td>22</td>
</tr>
</tbody>
</table>

Question 8: On a scale of 1-10, how often do you believe other triage nurses ask patients specifically about every home medication that is listed on the patient’s MiChart (10 being always, 1 being never)?

Figure 12 and Table 6 below show the findings:
Questions 5-8 Conclusions: As can be seen by the results of question 5-8, on average triage nurses feel that they are asking patients about specific dosages only 61.4% of the time and every specific medication only 76.4% of the time. When asked how often they felt other triage nurses asked about specific dosages and every specific medication, the numbers were even lower. This indicates that triage nurses know that MedRec isn’t being completed thoroughly every time.

Question 9: If the MedRec process was done by physicians instead of triage nurses, would it affect the amount of time you spend with patients?

Figure 13 below depicts the team’s findings:

![Figure 12: Rating How Often They Believe Other Triage Nurses Ask About Every Specific Medication](image)

Source: Interview data, Data Collection Period: 2/16/15-3/25/15, Sample size: 18

<table>
<thead>
<tr>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.94</td>
<td>1.43</td>
<td>18</td>
</tr>
</tbody>
</table>
Figure 13: How Physicians Performing MedRec Would Affect Time Triage Nurses Spend With Patients
Source: Interview data, Data Collection Period: 2/16/15-3/25/15, Sample size: 20

Question 10: If the MedRec process was done by physicians instead of triage nurses, how would it affect the time patients spend in the Adult ED?

Figure 14 below depicts the team’s findings:

Figure 14: How Would Physicians Performing MedRec Affect Time Patients Spend in the Adult ED
Source: Interview data, Data Collection Period: 2/16/15-3/25/15, Sample size: 21

Questions 9-10 Conclusions: As can be seen by the results of question 9 and 10, most triage nurses feel that having providers do MedRec would lower the amount of time they spend with patients but there are mixed results regarding how it would affect the time patients spend in the Adult ED. Most nurses did feel that it would either increase the time patients spend in the Adult ED or keep it the same. This data suggests that making providers do MedRec would be not be a good solution.

Question 11: Would you prefer there be a job position designated specifically to patient Medication Reconciliation in the Adult ED?
Figure 15 below depicts the team’s findings:

**Figure 15:** Would You Prefer Job Position Designated Specifically for MedRec  
Source: Interview data, Data Collection Period: 2/16/15-3/25/15, Sample size: 22

Question 12: If yes, where in the process of the Adult ED should this occur?

Table 7 below shows the team’s findings:

**Table 7:** Where MedRec should occur in the Adult ED process  
Source: Interview data, Data Collection Period: 2/16/15-3/25/15, Sample size: 22

<table>
<thead>
<tr>
<th>Number of Responses</th>
<th>Steps in the ED Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>At the beginning during triage</td>
</tr>
<tr>
<td>6</td>
<td>Right after triage</td>
</tr>
<tr>
<td>5</td>
<td>Before seeing a physician</td>
</tr>
<tr>
<td>3</td>
<td>When the patient reaches a bed</td>
</tr>
<tr>
<td>1</td>
<td>Right before discharge</td>
</tr>
<tr>
<td>5</td>
<td>No response</td>
</tr>
</tbody>
</table>

Questions 11-12 Conclusions: As can be seen by the results of question 11 and 12, most triage nurses feel that they would prefer a job position be designated specifically to patient MedRec and most nurses believe that MedRec should occur after triage and before seeing a physician. If MedRec were to occur at this location, it would have the added benefit of being done during the time when patients are waiting for a bed to open up so that they can see a physician.
**Provider Interviews**

Question 1: How would you rate the current MedRec process (on a scale from 1 – 10 with 1 being very poor and 10 being very efficient)?

Figure 16 and Table 8 below show the findings:

![Rating Graph](image)

**Figure 16: MedRec Process Provider Rating**  

<table>
<thead>
<tr>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.57</td>
<td>1.34</td>
<td>14</td>
</tr>
</tbody>
</table>

**Table 8: MedRec Process Provider Rating**  

Question 1 Conclusions: The results of this question show that on average physician would rate the current MedRec process a 5.57 out of 10. This shows that like triage nurses, providers are also unhappy with the current process.

Question 2: Do you feel that there are any issues with the current MedRec process and if so what?

- Medication list is inaccurate
- Medication list contains expired medications or medications patient no longer takes
- The process to update medications on list takes too long
- Not knowing if triage nurse did a thorough MedRec
- Patients don’t know their medications
Question 2 Conclusions: As can be seen by the data above, many of the concerns such as medication list contains expired medications, updating medications takes too long, and patients not knowing their medications are similar to concerns that triage nurses expressed. In addition, providers are also concerned about not knowing if triage nurses did a thorough MedRec and believing that the medication list may be inaccurate. If the provider is not confident in the accuracy of the medication list, they may ask about the same medications over again thus causing repeated work and patient irritation.

Question 3: What are some improvements would you like to see and how should they be implemented?

- Have someone in the Adult ED take ownership of the process
- Make it easier to update medications
- Implement a way to verify if triage nurse did a thorough MedRec, so if they didn’t the provider can do it
- Increase communication between triage nurses and providers
- Increase triage nurse involvement

Question 3 Conclusions: As can be seen by the results of question 3, many of the improvements they suggested relate directly to fixing the issues mentioned in question 2.

Question 4: If you could improve the current MedRec process in Adult ED, would you choose to increase the accuracy of the collected medication information or increase the speed of patient flow?

Figure 17 below displays the team’s findings:

![Figure 17: Provider Accuracy vs. Speed](source)

<table>
<thead>
<tr>
<th>Speed</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>6</td>
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<td>11</td>
<td>12</td>
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<tr>
<td>12</td>
<td>13</td>
</tr>
<tr>
<td>13</td>
<td>14</td>
</tr>
</tbody>
</table>

Question 4 Conclusions: Most providers feel that they would like the accuracy of the medical reconciliation process to increase over increasing the speed of the collected information. This is a different result from what triage nurses answered for the same question. Triage nurses felt that they would like speed to increase, while providers would like accuracy to increase. This
difference in opinion is important to consider when making recommendations and increased communication between the two parties may help address both areas of improvement.

Question 5: On a scale of 1 -10, how often do you ask about the specific dosage patients are taking (10 being always, 1 being never)?

Figure 18 and Table 9 below show the findings:

![Figure 18: Rating how often the provider asks about dosages](image)

**Figure 18**: Rating how often the provider asks about dosages  

<table>
<thead>
<tr>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.20</td>
<td>2.45</td>
<td>15</td>
</tr>
</tbody>
</table>

**Table 9**: Rating how often the provider asks about dosages  

Question 5 Conclusions: Given that providers reported they rated how often they ask the patient about dosages as a 5.2 out of 10, the team concluded that doses were not a top priority for providers during MedRec at the time of their medical evaluation.

Question 6: If a nurse has removed a medication off the medication list, are you informed? If so, do you have to approve it and how?

Figure 19 below shows the team’s findings:
Figure 19: Are providers informed of medications being removed off the medication list

Question 6 Conclusions: Providers are not informed when a triage nurse removes a medication off the medication list, meaning that they are not able to see the reason for which triage nurses removed a medication off the list. The team was unable to determine why triage nurses have to select the reason they are removing medications off the list if providers don’t see it anyway. If that step was taken out it would drastically reduce the amount of time triage nurses spend doing MedRec.

Question 7: On a scale of 1-10, how often do you ask patients specifically about every home medication that is listed on the patient’s MiChart (10 being always, 1 being never)?

Figure 20 and Table 10 below show the findings:

Figure 20: Rating How Often the Provider Asks About Every Specific Medication
Table 10: Rating How Often the Provider Asks About Every Specific Medication

<table>
<thead>
<tr>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.47</td>
<td>3.04</td>
<td>15</td>
</tr>
</tbody>
</table>

Question 7 Conclusions: Given the results of question 7, on average providers feel they ask patients about every specific medications 54.7% of the time. This data indicates that some providers do conduct a thorough MedRec even though triage nurses may have done so beforehand.

Question 8: If the MedRec process was done by physicians instead of triage nurses, how would it affect the time patients spend in Adult ED?

Figure 21 below displays the team’s findings:

![Figure 21: The Effect on Patient Stay if Physicians Performed MedRec](image)


Question 8 Conclusions: Most providers feel that if MedRec was done by physicians instead of triage nurses the time patients spend in the Adult ED would increase. This result is in contrast to triage nurses, who felt the time patients would spend in the Adult ED would stay the same. Both the triage nurse and provider response to this question indicate that having physicians only do MedRec would not be a good alternative to having triage nurses do MedRec, because it probably would not decrease the time patient spends in the Adult ED.

Question 9: Would you prefer there be a job position designated specifically to patient Medication Reconciliation in the Adult ED?

Figure 22 below depicts the team’s findings:
Question 10: If yes, where in the process of the Adult ED should this occur?
- Before seeing the physician
- Pharmacy should handle it
- After triage
- In the waiting room

Question 9 and 10 Conclusions: Given the results of question 9 and 10, providers feel that they would prefer there be a job position designated specifically to patient MedRec, which is similar to the responses gotten from triage nurses. Both triage nurses and providers seem to agree that having a job position specifically for MedRec may be a good solution.

Question 11: Are you concerned that triage nurses may be rushing through MedRec and what do you believe are the negative consequences that may result from this?

Figure 23 below displays the team’s findings:
Question 11 Conclusions: Many providers are concerned that triage nurses are rushing through the MedRec process. Providers also expressed that the inaccuracies caused by rushing could jeopardize patient safety and increase lawsuits. This concern has caused some providers to do their own thorough MedRec and many to do MedRec on important drugs relating to the injury or disease the patient came in with.

Question 12: Some triage nurses feel that the MedRec process is too lengthy, what are your thoughts on this?

Figure 24 below displays the team’s findings:

Question 12 Conclusions: The data shown above makes it clear that providers also believe that the MedRec process is lengthy. Many of them also commented that while it is lengthy, it is very important and must be performed accurately.
**Surveys**

The team sent the Adult ED staff surveys to quantify how often Adult ED staff felt they did thorough medical reconciliation process and to better understand how what they felt about the process. It is important to note that their concerns are opinions and not necessarily based on facts. The questions with the most common responses are listed below, along with statistics on numerical answers.

**Triage Nurses Surveys**

Question 1: When looking a patient's Home Medications list on MiChart, with what percent of patients do you discuss the following information: each specific medication, dosages, and frequency of medicine intake?

Figure 25 below displays the team’s findings:

![Figure 25: Percentage of Nurses Who Confirm the Three Categories with Patients](image)

Source: Survey data, Data Collection Period: 3/4/15-4/2/15, Sample size: 45

Question 1 Conclusions: This question demonstrated the majority of triage nurses claim to ask about each specific medication with 100% of the patients they see. Triage nurses ask the most frequently about each specific medication: 87% of patients. The nurses ask dosages less frequently about dosages, with 69% of their patients, and frequency the least frequently, with 54% of their patients.

Question 2: How important do you believe the MedRec process is in the Adult ED? (1 = Not Important, 10 = Essential)

Figure 26 below displays the team’s findings:
Question 2 Conclusions: This question distinctly shows the majority of triage nurses rate MedRec above a 5 on the importance scale; more nurses rated MedRec as essential than any other category. The average rating of importance among triage nurses was 7.6 out of 10. The team concluded that although there are nurses that clearly feel MedRec is important, it is regarded as less important by other nurses.

Question 3: At what point during the patient's stay in the Adult ED is it most important to know the complete accurate list of patient medications? (Excluding Trauma Patients)

Table 11 below shows team’s findings:

<table>
<thead>
<tr>
<th>Number of Responses</th>
<th>Steps in the ED Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Initial Screening</td>
</tr>
<tr>
<td>16</td>
<td>Triage</td>
</tr>
<tr>
<td>7</td>
<td>Primary Nurse Evaluation</td>
</tr>
<tr>
<td>15</td>
<td>Medical Provider Evaluation</td>
</tr>
<tr>
<td>3</td>
<td>At Time of First Prescribed Med in the ED</td>
</tr>
<tr>
<td>1</td>
<td>Discharge</td>
</tr>
<tr>
<td>3</td>
<td>Upon Admission</td>
</tr>
</tbody>
</table>
Question 3 Conclusions: When asked where in the ED it is most important to have a completely accurate Medication list, most (31) nurses were split between Triage and Medical Provider evaluation. Only 7 other nurses claimed it should be at the time of the Primary Nurse Evaluation. From this data, the team determined that most nurses believe that the most critical point to know the most accurate list of patient medications is at or before the Medical Provider Evaluation.

Question 4: Would you prefer there be a job position designated specifically to execute only patient Medication Reconciliation in the Adult ED?

Figure 27 below shows the team’s findings:

![Figure 27: Triage Nurse Preference on Job Position Designated To Execute Only MedRec](source)

Question 4 Conclusions: 30 of the 45 nurses, or 66%, would like to see MedRec executed by a specific job position. The most popular suggestion with a 26% responses rate for where that job position should occur was during the Primary Nurse Evaluation. This data led the team to conclude that triage nurses believe one job with sole ownership of the MedRec process is desirable and that MedRec should occur before the Medical Provider Evaluation.

Question 5: During Triage, are you more concerned with attaining Medication List accuracy, or getting the patient through the triage process as quickly as possible?

Figure 28 below shows the team’s findings:
Question 5 conclusions: As the graph clearly indicated, more nurses are concerned with speed rather than accuracy, but there is a relatively even split. This led the team to conclude that speed is the main value driver for nurses in regards to completing Medication Reconciliation.

Question 6: How thoroughly do you typically execute the MedRec process? (1 = Trust the Last Reviewed date, 10 = Update status of every medication & dosage)

Figure 29 below displays the team’s findings:
Question 6 Conclusions: There is a positive skew in how triage nurses rated themselves in regards to how typically they went through a perfect MedRec. From this data the team concluded that nurses are interested in attempting to complete MedRec thoroughly, but it is not an absolute top priority.

Question 7: What is your criteria for clicking the 'Red X' in Home Medications?

Table 12 below displays the team’s findings:

<table>
<thead>
<tr>
<th>Number of Responses</th>
<th>Criteria For ‘Red X’</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Patient’s medication order has expired</td>
</tr>
<tr>
<td>12</td>
<td>Patient is currently prescribed, no plans to continue taking</td>
</tr>
<tr>
<td>41</td>
<td>Patient is no longer prescribed, no plans to continue taking</td>
</tr>
<tr>
<td>1</td>
<td>Patient is no longer prescribed, plans to continue taking</td>
</tr>
</tbody>
</table>

Question 7 Conclusions: Respondents were authorized to select more than one option for this question. The majority of nurses (86.05%) reported they would click the Red X if the patient is no longer prescribed and the patient does not have any plans to continue taking. The next highest (18.6%) included the only other response that mentioned the patient had no plans to continue taking the medication. This data led the team to conclude that while 87% of nurses follow established Red X protocol in appropriate cases, some nurses do not follow protocol. Thus the current process is in contrast to the established protocol and training for the triage nurses; triage nurses are meant to completely delete the medication if the nurse understands that the patient has no plans to continue taking the medication.

Question 8: In MiChart, what is your personal criteria for selecting 'Not Taking' for a medication?

Table 13 below displays the team’s findings:
Table 13: Triage Nurse’s Personal Criteria for Selecting Not Taking for a Medication  
Source: Survey data, Data Collection Period: 3/4/15-4/2/15, Sample size: 45

<table>
<thead>
<tr>
<th>Number of Responses</th>
<th>Criteria For ‘Not Taking’</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Patient is currently prescribed, plans to continue taking</td>
</tr>
<tr>
<td>37</td>
<td>Patient is currently prescribed, no plans to continue taking</td>
</tr>
<tr>
<td>27</td>
<td>Patient is no longer prescribed, no plans to continue taking</td>
</tr>
<tr>
<td>1</td>
<td>Patient is no longer prescribed, plans to continue taking</td>
</tr>
</tbody>
</table>

Question 8 Conclusions: Respondents were authorized to select more than one option for this question. The overwhelming majority of nurses reported they would click Not Taking if the patient does not have any plans to continue taking, regardless of their prescription status. The split between the two categories is 66.67% for a current prescription, and 51.11% for no prescription. This data led the team to conclude that this part of MedRec current execution is in contrast to the established protocol and training is for the triage nurses; triage nurses are meant to completely delete the medication if the nurse understands that the patient has no plans to continue taking the medication and/or the patient is no longer prescribed. Based on our preliminary observations and interviews, a reason for the tendency to click Not Taking when nurses are supposed to click the Red X is due to the common knowledge that clicking the Red X takes 3 more clicks, and thus more time. Since triage nurses’ value driver is getting patients through as quickly as possible (see triage survey question 5), the fact that clicking Not Taking is quicker is enough of an incentive for triage nurses to make that decision even though the nurses know they’re supposed to click the Red X. In order to accomplish the ideal state of updating the Home Medications to accurately list the prescriptions the patient is currently taking, the triage nurses need to click the Red X instead of Not Taking.

Question 9: What do you think is the main objective of the triage nurse (as opposed to other providers) executing MedRec process in the Adult ED?

Table 14 below displays the team’s findings:
Table 14: Main Objective of Triage Nurse Executing MedRec Process in the Adult ED?
Source: Survey data, Data Collection Period: 3/4/15-4/2/15, Sample size: 45

<table>
<thead>
<tr>
<th>Number of Responses</th>
<th>Main Objective of Triage Nurse</th>
</tr>
</thead>
<tbody>
<tr>
<td>26</td>
<td>To determine the key medication(s) that could pose a threat during the patient stay in the Adult ED</td>
</tr>
<tr>
<td>12</td>
<td>To obtain a 100% accurate home medication list</td>
</tr>
<tr>
<td>31</td>
<td>To provide an initial, quick review of medications to prep the physician for a more in depth MedRec process later</td>
</tr>
<tr>
<td>4</td>
<td>MedRec is not necessary in the Adult ED; having a 100% accurate list matters more for the patient’s primary care clinic/inpatient visit)</td>
</tr>
<tr>
<td>8</td>
<td>Other (please specify)</td>
</tr>
</tbody>
</table>

Question 9 Conclusions: Respondents were authorized to select more than one option for this question. The most popular answers were to provide an initial, quick review of medications to prep the physician for a more in depth MedRec process later, and to determine the key medication(s) that could pose a threat during the patient stay in the Adult ED. The team compared the triage nurse responses to the provider responses to the same question to draw conclusions about the two parties’ opinions regarding the triage nurses’ MedRec responsibilities. See provider surveys below.

Provider Surveys
Question 1: Of the existing job titles currently used in the Adult ED, who should be responsible for doing MedRec with patients?

Figure 30 below displays the team’s findings:
Question 1 Conclusions: When asked this question, 68.6% of providers believe that MedRec falls in the job responsibilities of the Patient-Assigned Nurse. It is also important to note that 37.3% of the surveyed providers believed that the MedRec responsibility is belonged to the Pharmacy Technician job position.

Question 2: Would you prefer there be a job position designated specifically to only patient MedRec in the Adult ED? If so, who?

Figure 31 below displays the team’s findings:
Question 2 Conclusions: Of the surveyed providers, 54.9% believe that MedRec would be best performed by a pharmacy technician and only 43.1% of the surveyed providers believed that the MedRec responsibility should be that of the patient-assigned nurse. There is an interesting correlation between question 1 and question 2 of the survey. There were a larger percentage of providers that believe that currently the responsibility of MedRec belonged to the patient-assigned nurse, but when asked what position would be best suited for MedRec there was a greater percentage of the surveyed providers that believed that a pharmacy technician would be best for a designated role of MedRec.

Question 3: If so, where in the process of the Adult ED should this occur? (Initial Screening, Triage, Primary Nurse Evaluation, Medical Provider Evaluation, At time of first prescribed med, Discharge, Other)

Figure 32 below displays the team’s findings:

![Figure 32: Favored Location of Designated MedRec Position in the Adult ED](image)

Source: Survey Data, Data Collection Period: 3/4/15-4/2/15, Sample size: 51

Question 3 Conclusions: These results show the two largely competing locations that would be best suited for MedRec which are during triage and during the primary nurse evaluation.

Question 4: When looking at the Home Medications list on MiChart, with what percent of patients do you discuss the following information: each specific medication, dosages, and frequency of medicine intake?

Figure 33 and Table 15 below show the findings:
Figure 33: Percentage of Patients Whom Providers Confirm the Above Listed Information  
Source: Survey Data, Data Collection Period: 3/4/15-4/2/15, Sample size: 51

Table 15: Percentage of Patients Whom Providers Confirm the Above Listed Information  
Source: Survey data, Data Collection Period: 3/4/15-4/2/15, Sample size: 51

<table>
<thead>
<tr>
<th>Medication Information</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Each Specific Medication</td>
<td>34.71%</td>
<td>30.48%</td>
<td>51</td>
</tr>
<tr>
<td>Dosages</td>
<td>21.54%</td>
<td>23.67%</td>
<td>51</td>
</tr>
<tr>
<td>Frequency</td>
<td>20.14%</td>
<td>25.97%</td>
<td>51</td>
</tr>
</tbody>
</table>

Question 4 Conclusions: On average most providers discuss each specific medication with the patient 34.71% of the time. Providers discuss the medication dosages 21.55% of the time with the patient and discuss the frequency at which a patient takes a medication 20.14% of the time. These statistics show that the providers do not play a large role in the current MedRec process; they discuss the medications with a patient less than 35% of the time.

Question 5: What medication information do you need in the Adult ED in order to provide care for the patient?

Figure 34 below display’s the team’s findings:
Question 5 Conclusions: Of the providers surveyed, 89.16% believe that the drug name and high risk agents are the most critical information to be aware of prior to providing care to a patient. This information displays the main objective of the MedRec process is.

Question 6: By the time of your evaluation, for what percent of patients has the triage nurse completed (what you assess to be) a 100% accurate MedRec?

Figure 35 and Table 16 below show the findings:
Table 16: Rating on percentage of patients that nurse completed 100% accurate MedRec
Source: Survey data, Data Collection Period: 3/4/15-4/2/15, Sample size: 52

<table>
<thead>
<tr>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.09</td>
<td>2.22</td>
<td>52</td>
</tr>
</tbody>
</table>

Question 6 Conclusions: Roughly, 40.96% of patients have their MedRec 100% accurately done by the triage nurses. This finding is not as high of a percentage as it is under the 50% mark.

Question 7: How important do you believe the MedRec process is in the Adult ED? (1 = Not Important, 10 = Essential)

Figure 36 and Table 17 below show the findings:

Figure 36: Importance of MedRec in Adult ED
Source: Survey Data, Data Collection Period: 3/4/15-4/2/15, Sample size: 52

Table 17: Rating on how importance MedRec is in the Adult ED
Source: Survey data, Data Collection Period: 3/4/15-4/2/15, Sample size: 52

<table>
<thead>
<tr>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.50</td>
<td>1.81</td>
<td>52</td>
</tr>
</tbody>
</table>

Question 7 Conclusions: Providers rate on average the importance of MedRec to be 7.50 on a scale of 1 to 10. This average rating indicates that the providers do believe that MedRec is an important process in the Adult ED, and thus should be given care. Doing the process thoroughly and accurately is of importance.
Question 8: At what point during the patient's stay in the Adult ED is it most important to know the complete accurate list of patient medications? (Excluding Trauma Patients)

Table 18 below displays team’s findings:

<table>
<thead>
<tr>
<th>Number of Responses</th>
<th>Point In the Patient’s Stay</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Initial Screening</td>
</tr>
<tr>
<td>5</td>
<td>Triage</td>
</tr>
<tr>
<td>7</td>
<td>Primary Nurse Evaluation</td>
</tr>
<tr>
<td>32</td>
<td>Medical Provider Evaluation</td>
</tr>
<tr>
<td>0</td>
<td>At time of first prescribed med in the ED</td>
</tr>
<tr>
<td>3</td>
<td>Discharge/Admit</td>
</tr>
<tr>
<td>1</td>
<td>Other (please specify)</td>
</tr>
</tbody>
</table>

Question 8 Conclusions: Most of the provider responses (almost 63%) indicate that it is most important to know the complete list of patient medications at the Medical Provider Evaluation.

Question 9: When asking patients about their medications, which is more important for obtaining Medication History: speed or accuracy?

Figure 37 below displays the team’s findings:

Figure 37: Provider Speed vs. Accuracy

42
Question 9 Conclusions: Most of the providers believe that accuracy of the Medical list information is more important that the speed of the patient flow through in the Adult ED.

Question 10: How thoroughly do you typically review the entire Home Medication list with the patient?

Table 19 below displays the team’s findings:

<table>
<thead>
<tr>
<th>Number of Responses</th>
<th>Degree of Review</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Do not review medications</td>
</tr>
<tr>
<td>8</td>
<td>Review all medications, by name only</td>
</tr>
<tr>
<td>6</td>
<td>Review all medications including dose/frequency</td>
</tr>
<tr>
<td>22</td>
<td>Review only critical medications by name</td>
</tr>
<tr>
<td>11</td>
<td>Review only critical medications including dose/frequency</td>
</tr>
<tr>
<td>3</td>
<td>Other (please specify)</td>
</tr>
</tbody>
</table>

Question 10 Conclusions: The provider’s common response was that they mainly review only the critical medications by name. Examples of such critical medications include blood thinners, and cardiac meds. These are the medications that have can have adverse effects if taken in wrong dosages or with other specific meds.

Question 11: What do you think is the main objective of the triage nurse (as opposed to other providers) executing MedRec process in the Adult ED?

Table 20 below displays the team’s findings:
Table 20: Main Objective of Triage Nurse Executing MedRec Process in Adult ED

<table>
<thead>
<tr>
<th>Number of Responses</th>
<th>Main Objective of Triage Nurse</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>To determine the key medication(s) that could pose a threat during the patient stay in the Adult ED</td>
</tr>
<tr>
<td>11</td>
<td>To obtain a 100% accurate home medication list</td>
</tr>
<tr>
<td>15</td>
<td>To provide an initial, quick review of medications to prep the physician for a more in-depth MedRec process later</td>
</tr>
<tr>
<td>2</td>
<td>MedRec is not necessary in the Adult ED; having a 100% accurate list matters more for the patient’s primary care clinic/inpatient visit</td>
</tr>
<tr>
<td>5</td>
<td>Other (please specify)</td>
</tr>
</tbody>
</table>

Question 11 Conclusions: Most of the providers believe that the main objective of the triage nurse executing MedRec process in the Adult ED is to determine the key medication(s) that could pose a threat during the patients stay in the Adult ED. This result is in contrast to the triage nurse responses to the same question as mentioned earlier. The team concluded from these contrasting opinions that the two parties have differing opinions on the role of MedRec, which leads to skewed expectations regarding the process. As seen from Table 20 above, 30 responses out of 63 indicate this, which corresponds to almost 50%. Only two responses say that MedRec is not necessary in the Adult ED. This piece of data reinforces the conclusion that can be drawn from question 7, which asked about the importance of MedRec in the Adult ED. This supporting responses decreases the variability and hence the data is more robust.

Summary of Conclusions
From the findings and conclusions listed above, the team determined that providers and triage nurses are unaware of what the other party views in MiChart. The triage nurses and providers do not follow a standard MedRec procedure such that each individual completes MedRec exactly the same way. From the time studies, the team concluded that MedRec consumes only 26% of the total triage time, which is less severe than what triage nurses claimed during initial observations and interviews. Interviews indicated that by the time of the medical provider evaluation, providers are unsure of whether triage nurses had performed a thorough MedRec; there is no indication in MiChart notifying providers of the status of the Med List. Triage nurses reported they would prefer MedRec to take place after triage and before the provider evaluation. Both parties noted they would prefer there be a job title specifically designated for MedRec. Interviews and surveys both led the team to conclude that triage nurses’ value driver in regards to MedRec is speed (getting patients triaged as quickly as possible) while providers are concerned with accuracy of the patient Med List. Surveys indicated that providers feel pharmacy technicians should perform MedRec should there be a job title created specifically for MedRec.
Triage nurses and providers have differing opinions on the role of the triage nurse in regards to MedRec: triage nurses felt the responsibility of the triage nurse in regards to MedRec is to execute a preliminary MedRec to prepare the physician for a more in-depth MedRec later, while providers felt the main objective of the triage nurse is to identify the meds that could pose a threat to patients during their stay in the Adult ED. These differing opinions illustrates that both parties have different expectations for the process. The surveys also indicated that nurses have a tendency to click Not Taking in situations that protocol calls for them to click the Red X due to the 3 less clicks required to click Not Taking.

**Recommendations**

After all the data was collected, the team formulated recommendations and improvements for the MedRec process in the Adult ED, based on the findings and conclusions discussed. The team identified these recommendations with the ideal goal of obtaining a 100% accurate Med List by the conclusion of MedRec and before the first prescribed medication in the Adult ED as set forth by the team’s client.

**Require an Updated Status of Each Medication Prior to Clicking “Mark as Reviewed”**

The team recommends requiring triage nurses to update the Med List Status before being allowed to click Mark As Reviewed to close out the Home Medications tab. This will allow the provider to be aware of the potential accuracy of the patient’s list when they see the patient. This improvement will ensure medications are reviewed and the dosages and frequencies of them are updated. If patients are no longer on medications, updating the status of these medications will not only improve the speed of the MedRec time, but will also decrease the chance of errors occurring. It will provide providers with a notification of how well the triage nurse was able to execute the MedRec process at triage and increase the communication between both triage nurse and provider parties.

**Incorporate Reason Requirement Drop Down Menu for Not Taking**

The team recommends implementing a drop-down menu requirement for the triage nurses to notate the reason why a patient is Not Taking a medication. This will equalize the time it takes to click the Red X and Not Taking, thus removing the incentive for triage nurses to break protocol to save time triaging patients since the team concluded that speed is a larger value driver for triage nurses than accuracy. The incorporation of a drop down menu for the “Not Taking” button to allow for triage nurses to list the reason why a patient is not taking a specific medication will allow for the providers to gain more information as to why the triage nurse listed the medication as “Not Taking.” The nurses need to list a reason for deleting a medication off a list, but that information is not relevant to the provider at the Adult ED. The providers do need to know why a patient is not currently taking a medication; so requiring nurses to mark a reason will save the physician time going through the patient’s Med List and increase communication between provider parties.
Create a New Job Title with Ownership of the MedRec Process

The team recommends implementing a new job title that holds complete ownership of the MedRec process in order to ensure 100% accuracy after MedRec. The team recommends pharmacy technicians to hold this shift and perform MedRec after triage and before the provider evaluation. A new job title for a person who specifically handles the MedRec process will eliminate the variability in the Adult ED. From the data collection, having this new job title after triage and before the patient sees the physician would be most beneficial. Many of the triage nurses believe that MedRec should be performed by the providers whereas many of the providers believe triage nurses should be performing MedRec. Delegating MedRec to a Pharmacy Technician, Pharmacy Intern or Medical Assistant will resolve these discrepancy and relieve both parties of the duty of MedRec. Research papers provided to the team by the client further affirm the choice of a pharmacy technician to take ownership of the MedRec process. According to a research study conducted at the emergency department of the University Hospitals Leuven, Belgium, “Pharmacists are especially suited to acquire and supervise accurate medications histories, as they are educated and familiar with commonly used drugs”[6]. Another article from the American Journal of Health-System Pharmacy, describes a program implemented at Fairview Southdale Hospital where pharmacy technicians were used to conduct the MedRec process. They found that 16 weeks after implementing pharmacy technicians, there was “a reduction of >82% from the baseline rate,” in terms defects in the drug orders. The study also concluded that “A program that involved pharmacy technicians in obtaining medications histories reduced the problems in those orders and increased nurses’ and pharmacists’ confidence in the histories” [7].

Re-allocate MedRec duty to the Primary Care Nurse

An alternative recommendation to creating a new job title with complete ownership of the MedRec process is reallocating MedRec ownership to occur during the primary nurse evaluation. This is in line with suggested improvements from interviews. The primary care nurse has the proper licensure to accomplish MedRec, and that particular step in the overall Adult ED process allows the nurse more time to complete 100% accurate, thorough MedRec.

Implement MedRec Training Seminars of all Adult ED Medical Personnel Including Separate and Joint Sessions

The team recommends as an absolute minimum comprehensive re-training seminars for all Adult ED medical personnel including separate and joint sessions. This will allow all parties to be aware of their own and others’ priorities regarding MedRec and increase incentive to follow established MedRec protocol. A more thorough and detailed training of the medical personnel will improve the accuracy of updating the medical information on MiChart. This training will coach the medical personnel about the proper protocols and standard procedures of MedRec, thus creating standardized working procedures that will be incorporated throughout the entire Adult ED. Having a standardized way of updating information will reduce the variability and increase the efficiency of the MedRec process. It will also enlighten each party to the other party’s differing opinions, priorities, and expectations which will motivate each party to accomplish MedRec according to protocol with those other concerns in mind. Allowing each party to retrain will reinforce the established tactical procedures for each job title in separate sessions will complement the big picture training seminars for all provider staff in the UMHS Adult ED.
Expected Impact
From the recommendations that the team has proposed, the University of Michigan Adult ED should expect the following impact:

- Improved ownership of the MedRec process through a designated position
- Increased resource utilization when obtaining accurate medication information
- Improved accuracy in patient medication lists prior to the physician prescribing the first medication to the patient
- Decreased redundancy of confirmation of patient medications on a patient’s medication list
- Increased confidence of triage nurses in the Adult ED removing medications on the medication lists
References


Appendix A: Medication Reconciliation Flow Map

Patient enters ED: Screener RN assigns initial Acuity Level

I Resuscitation  II Emergent  III Urgent  IV Less Urgent  V Non Urgent

Ambulance

Is patient in critical condition (I & II)?

YES

Patient is immediately taken to a bed

Out of Scope

Self Arrival

Is there a Triage Nurse Available?

YES

Patient waits in the waiting room until a Triage Nurse is available

Primary Care Nurse Evaluation

Patient is examined in the triage bay: MedRec

Is there a bed available?

NO

Patient waits in the triage bay until a bed is available

YES

Patient is transported to a bed in the ED

Medical Provider Evaluation: MedRec

Discharge
Appendix B: Time Study Form

<table>
<thead>
<tr>
<th>Observer Name</th>
<th>Triage Start Time</th>
<th>MedRec Start Time</th>
<th>MedRec End Time</th>
<th>Triage End Time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>
Appendix C: Interview Questions for Triage Nurses

1. How would you rate the current MedRec process (on a scale from 1 – 10 with 1 being very poor and 10 being very efficient)?

2. Do you feel that there are any issues with the current MedRec process and if so what?

3. What are some improvements would you like to see and how should they be implemented?

4. If you could improve the current MedRec process in Adult ED, would you choose to increase the accuracy of the collected medication information or increase the speed of patient flow?

5. On a scale of 1 -10, how often do you ask about the specific dosage patients are taking (10 being always, 1 being never)?

6. On a scale of 1-10, how often do believe other triage nurses ask about the specific dosages patients are taking (10 being always, 1 being never)?

7. On a scale of 1-10, how often do you ask patients specifically about every home medication that is listed on the patient’s MiChart (10 being always, 1 being never)?

8. On a scale of 1-10, how often do you believe other triage nurses ask patients specifically about every home medication that is listed on the patient’s MiChart (10 being always, 1 being never)?

9. If the MedRec process was done by physicians instead of triage nurses, would it affect the amount of time you spend with patients?

10. If the MedRec process was done by physicians instead of triage nurses, how would it affect the time patients spend in Adult ED?

11. Would you prefer there be a job position designated specifically to patient Medication Reconciliation in the Adult ED?

12. If yes, where in the process of the Adult ED should this occur?
Appendix D: Interview Questions for Providers

1. How would you rate the current MedRec process (on a scale from 1 – 10 with 1 being very poor and 10 being very efficient)?

2. Do you feel that there are any issues with the current MedRec process and if so what?

3. What are some improvements would you like to see and how should they be implemented?

4. If you could improve the current MedRec process in Adult ED, would you choose to increase the accuracy of the collected medication information or increase the speed of patient flow?

5. On a scale of 1-10, how often do you ask about the specific dosage patients are taking (10 being always, 1 being never)?

6. If a nurse has removed a medication off the medication list, are you informed? If so, do you have to approve it and how?

7. On a scale of 1-10, how often do you ask patients specifically about every home medication that is listed on the patient’s MiChart (10 being always, 1 being never)?

8. If the MedRec process was done by physicians instead of triage nurses, how would it affect the time patients spend in Adult ED?

9. Would you prefer there be a job position designated specifically to patient Medication Reconciliation in the Adult ED?

10. If yes, where in the process of the Adult ED should this occur?

11. Are you concerned that triage nurses may be rushing through MedRec and what do believe are the negative consequences that may result from this?

12. Some triage nurses feel that the MedRec process is too lengthy, what are your thoughts on this?
Appendix E: Survey Questions for Triage Nurses

**1. Shift Demographics**
What hours/shifts do you currently work as a Triage Nurse in the Adult ED?
How many patients on average do you see in those shifts? (Ex: 1, 2, 3, 5, 8, 13 etc.)

**2. When looking a patient’s Home Medications list on MiChart, with what percent of patients do you discuss the following information:**

<table>
<thead>
<tr>
<th>Each Specific Med</th>
<th>10%</th>
<th>20%</th>
<th>30%</th>
<th>40%</th>
<th>50%</th>
<th>60%</th>
<th>70%</th>
<th>80%</th>
<th>90%</th>
<th>100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dosages</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**3. How important do you believe the MedRec process is in the Adult ED? (1 = Not Important, 10 = Essential)**

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**4. At what point during the patient’s stay in the Adult ED is it most important to know the complete accurate list of patient medications? (Excluding Trauma Patients)**

- Initial Scoring
- Triage
- Primary Nurse Evaluation
- Medical Provider Evaluation
- At time of first prescribed med in the ED
- Discharge
- Other (please specify)

**5. Would you prefer there be a job position designated specifically to execute only patient Medication Reconciliation in the Adult ED?**

- Yes
- No
5. During Triage, are you more concerned with attaining Medication List accuracy, or getting the patient through the triage process as quickly as possible?

☐ Speed
☐ Accuracy
Comments

6. How thoroughly do you typically execute the MedRec process? (1 = Trust the Last Reviewed date, 10 = Update status of every medication & dosage)

1 2 3 4 5 6 7 8 9 10

Under what conditions would you deviate from a 100% MedRec process?


8. What is your criteria for clicking the ‘Red X’ in Home Medications?

☐ Patient’s medication order has expired
☐ Patient is currently prescribed, no plans to continue taking
☐ Patient is no longer prescribed, no plans to continue taking
☐ Patient is no longer prescribed, plans to continue taking
☐ Other (please specify)


9. In MiChart, what is your personal criteria for selecting ‘Not Taking’ for a medication?

☐ Patient is currently prescribed, plans to continue taking
☐ Patient is currently prescribed, no plans to continue taking
☐ Patient is no longer prescribed, no plans to continue taking
☐ Patient is no longer prescribed, plans to continue taking
☐ Other (please specify)


10. What do you think is the main objective of the triage nurse (as opposed to other providers) executing MedRec process in the Adult ED?

☐ To determine the key medication(s) that could pose a threat during the patient’s stay in the Adult ED
☐ To obtain a 100% accurate home medication list
☐ To provide an initial, quick review of medications to prep the physician for a more in-depth MedRec process later
☐ MedRec is not necessary in the Adult ED; having a 100% accurate list matters more for the patient’s primary care clinician/patient visit
☐ Other (please specify)
Appendix F: Survey Questions for Providers

1. Shift Demographics
   Are you a PA, Resident, or Attending Physician?
   In what section of the Adult ED do you most recently work? (Main, East, EC)
   How many patients on average do you see in those shifts? (Ex: 1, 2, 3, 5, 8, 13, etc.)

2. MedRec Delegation
   Of the existing job titles currently used in the Adult ED, who should be responsible for doing MedRec with patients?
   Would you prefer there be a job position designated specifically for only patient MedRec in the Adult ED? If so, who?
   If so, where in the process of the Adult ED should this occur? (Initial Screening, Triage, Primary Nurse Evaluation, Medical Provider Evaluation, At time of first prescribed med, Discharge, Other)

3. When looking at the Home Medications list on MiChart, with what percent of patients do you discuss the following information:
   - Each Specific Med
   - Dosages
   - Frequency
   Other (please specify)

4. What medication information do you need in the Adult ED in order to provide care for the patient?
   - Exact Dosages
   - Frequency
   - Drug Name
   - High-Risk Agents (Ex: Warfarin, Enoxaparin)
   Of the above options, which is most important?

5. By the time of your evaluation, for what percent of patients has the triage nurse completed (what you assess to be) a 100% accurate MedRec?

6. How important do you believe the MedRec process is in the Adult ED? (1 = Not Important, 10 = Essential)

7. At what point during the patient’s stay in the Adult ED is it most important to know the complete accurate list of patient medications? (Excluding Trauma Patients)
   - Initial Screening
   - Triage
   - Primary Nurse Evaluation
   - Medical Provider Evaluation
   - At time of first prescribed med in the ED
   - Discharge
   - Other (please specify)

8. When asking patients about their medications, which is more important for obtaining Medication History:
   - Speed
   - Accuracy
9. How thoroughly do you typically review the entire Home Medication list with the patient?

- [ ] Do not review medications
- [ ] Review all medications, by name only
- [ ] Review all medications including dose/frequency
- [ ] Review only critical medications by name
- [ ] Review only critical medications including dose/frequency
- [ ] Other (please specify)

10. What do you think is the main objective of the triage nurse (as opposed to other providers) executing MedRec process in the Adult ED?

- [ ] To determine the key medication(s) that could pose a threat during the patient during their stay in the Adult ED
- [ ] To obtain a 100% accurate home medication list
- [ ] To provide an initial, quick review of medications to prep the physician for a more in-depth MedRec process later
- [ ] MedRec is not necessary in the Adult ED; having a 100% accurate list matters more for the patient’s primary care clinic/patient visit
- [ ] Other (please specify)