EMS SYSTEM QUALITY IMPROVEMENT REPORT

State of Indiana

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FORWARD

Thank you for your interest in improving the quality of care delivered by the Indiana Emergency Medical Services (EMS) system in Indiana. Data is the backbone of any clinical decision-making process. Any system of care, including EMS, should be no different. Several years ago, legislation was passed in the state of Indiana requiring EMS provider agencies to report EMS patient encounter data to the state EMS data registry. That registry is practically known as ImageTrend. Over the last 24 months, significant time and effort has gone into improving both the quality and quantity of data being reported by EMS provider agencies to the Indiana Department of Homeland Security (IDHS.) The first ever State of Indiana EMS System Quality Improvement Report was published in July 2018. That report included one month of complete data, marking April 2018 as the first month that data quality and quantity was sufficient enough to perform a robust data analysis. This report continues a focus on clinical quality improvement by using the same data metrics but expands the time frame to include a full year data set from April 2018 to March 2019.

Pre-hospital (EMS) care is delivered in challenging and often unique environment. Patients are often seriously ill or injured before EMS arrives and data is not always readily available. Documentation is many times done retrospectively, after patient care has been delivered. Quality improvement program expectations, therefore, should not be linked to individual case outcomes since an adverse or unexpected outcome may occur even though best possible care was provided in compliance to any given protocol. In addition, the pre-hospital environment makes performing many assessments, treatments, and interventions more difficult. All EMS professionals must be cognizant of the overall context of the patient encounter being reviewed and continually refine and improve expectations to make sure the “customers” are getting the best care that can be provided. The cornerstone of any quality improvement process is not just the quality of care delivered but also the accuracy of the documentation.

The National Association of EMS Physicians defines continuous quality improvement (CQI) as “the concept of a continual cycle of evaluation and improvement based on the findings of quality assurance.”

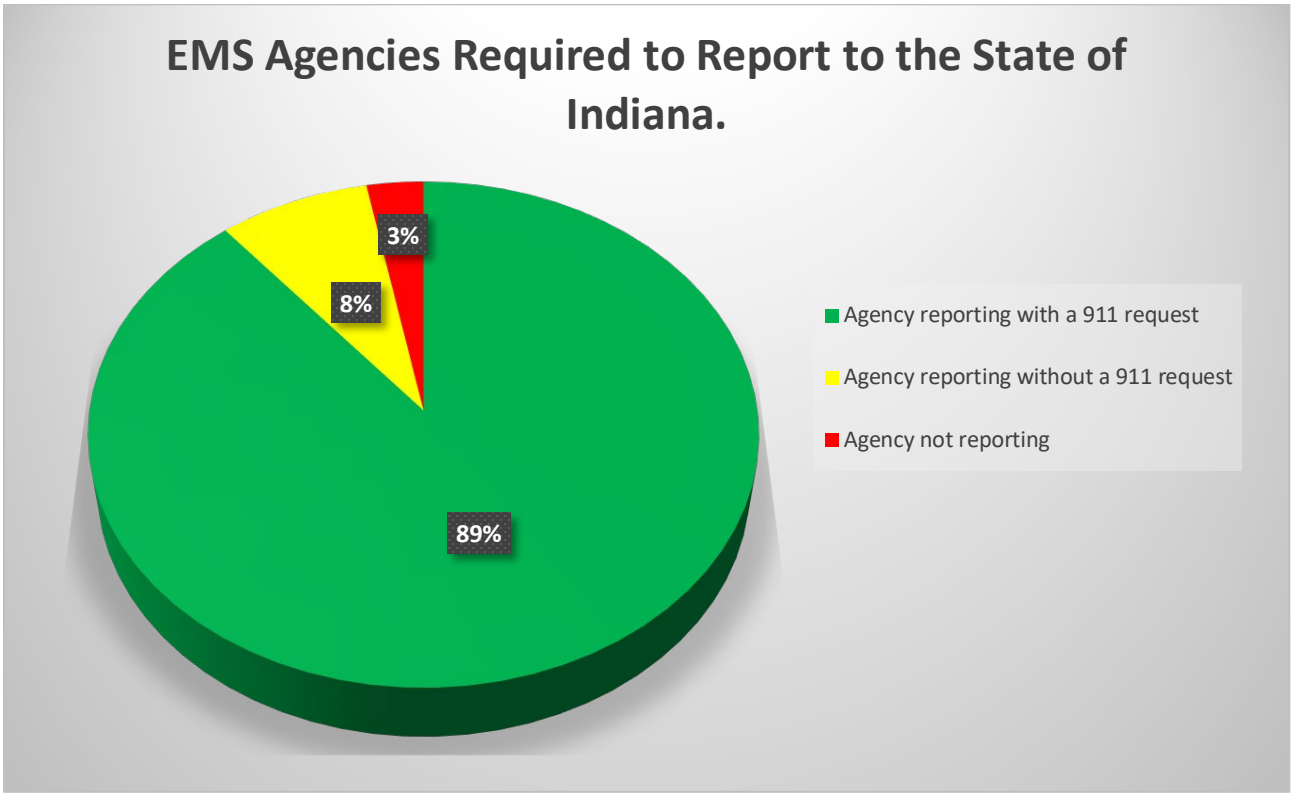
The spirit behind CQI is that problems often result from processes, not individual errors. CQI does not seek to blame, but to understand and improve the system. The goal of a CQI system is not to discipline a specific provider or agency but provide a mechanism to understand shortcomings. Shortcomings in patient care are the medical director’s responsibility to address and should cause a closer look at the education, training and/or protocols and processes that are in place.

Most of the clinical metrics presented here were created by the EMS Compass Project. Funded by the National Highway Traffic Safety Administration (NHTSA) Office of EMS and led by the National Association of State EMS Officials (NASEMSO), the EMS Compass initiative engaged a wide range of EMS stakeholders to develop performance measures that are relevant to EMS agencies, regulators and patients. The measures are based on the latest version of the National EMS Information System (NEMSIS) and allow local and state EMS systems to use their own data meaningfully.

In 2018, the work of the EMS Compass project was transitioned to the newly formed National EMS Quality Alliance. Contemporary information of the initiative can be found at http://www.NEMSQA.org.

OVERALL REPORTING

The agencies included in this chart are from a list of 336 EMS provider agencies who are required to report under current Indiana Administrative Rules (the Rules) during the specified time frame. This metric breaks down these 336 providers into three groups: agencies actively reporting their data to ImageTrend with a 911 Request (89 percent); agencies actively reporting interfacility transports (8 percent); and agencies who are not reporting records (3 percent). Ninety-seven percent of EMS agencies submitted patient care reports to the state of Indiana during this period.



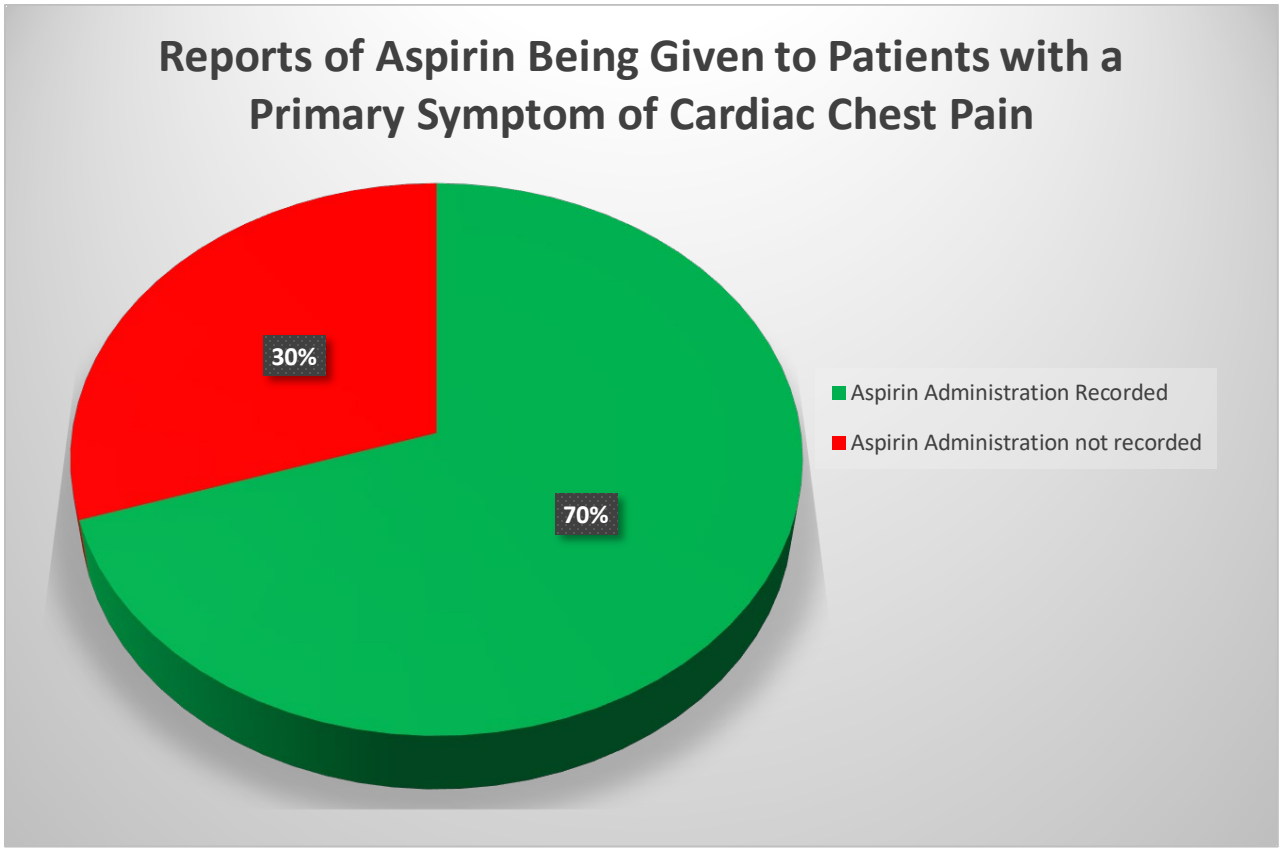
DISCUSSION: The purpose of this chart is to show the raw percentage of EMS provider agencies currently reporting data to ImageTrend. This depicts all agencies that are required to report. For this report, 97 percent of EMS provider agencies are now submitting data to IDHS. This improvement from 61 percent reporting one year ago reflects the significant efforts of IDHS and EMS Division staff at encouraging and promoting data reporting. A continued focus on data reporting will be necessary for these high numbers to persist. The state rule requiring data to be reported has been in place now for many years. The specific data elements that must be reported has been defined (NEMSIS version 3.4) and the time frame for reporting, within 24 hours of run completion, has also recently been approved by the EMS Commission. Rules for enforcement may be necessary to ensure compliance with state EMS data reporting requirements. Financial penalties for not reporting have already been approved as policy by the EMS Commission.

CORRECTIVE ACTION: EMS provider agencies must ensure that all documentation is being properly reported to the state EMS registry. EMS provider agencies utilizing third party software for their patient care records will need to ensure this process is completed. While it is understood not all EMS provider agencies utilize third party software, a version of ImageTrend is available at no cost from IDHS, so EMS provider agencies can directly submit their patient care data into the state EMS registry. Third-party software users will need to coordinate and work proactively with their software vendor and the IDHS state data coordinator to create and maintain an integration account for automatic transfers of EMS records. Every software vendor that is approved by NEMSIS already has a unique ID and password for each integration account. This will allow individual EMS provider reports to be automatically transferred more readily to IDHS upon completion. For the direct entry users of ImageTrend who are utilizing the IDHS provided software, this will not be required, but those providers will need to ensure their full agency setup is complete.

ASPIRIN ADMINISTRATION

Aspirin first was shown to be lifesaving in 1974. Since then, its value in the reduction of risk after myocardial infraction (MI) and in other vascular diseases has been confirmed in over 150 randomized, controlled trials. Aspirin is now widely accepted as an essential component in the early treatment of acute MI. The giving of aspirin by a health professional on first contact with a patient who has chest pain and is suspected to have a MI or acute coronary syndrome is recommended and has become accepted practice. The goal of this report was to ascertain the percentage of time that aspirin was administered to patients with chest pain of suspected cardiac origin. Aspirin can now be administered by the verbal direction of an emergency medical dispatcher or any EMS certified or licensed professional.

To obtain this data, the Indiana EMS registry was queried from 04/01/2018 to 03/31/2019. Although no EMS Compass bundle exists for this quality improvement metric, the topic or clinical area examined was cardiac chest pain. This was a measure of patients with chest pain of suspected cardiac origin who were administered aspirin. Inclusion into the metric was based on a primary symptom of cardiac chest pain originating from a 911 request. The denominator is the number of incidents of this nature and included 33,607 reports. The numerator is the volume of these incidents where aspirin was properly recorded as a given medication and included 23,637 reports (recorded in the “medication given” [emedications.03] field of the incident report). Properly recording the medication date and time (emedication.01) along with the administration prior to EMS care “yes or no” (emedication.02) were both included.



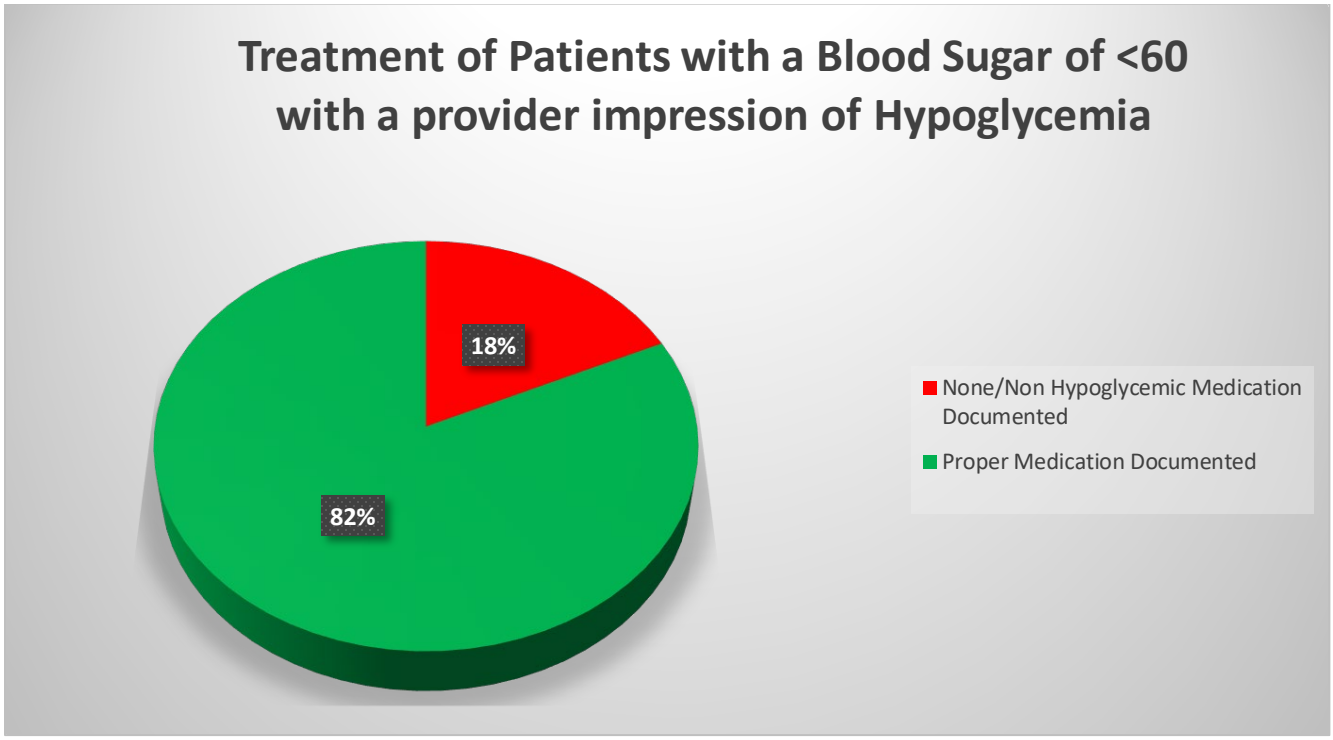
DISCUSSION: The proper recording of aspirin administration to a patient with a chief complaint of cardiac chest pain serves as a very simple example of how errors of documentation affect quality improvement data. In 2018, this document reported only 52 percent of patients with chest pain of suspected cardiac origin received aspirin. This report reflects an improvement of 18 percent. Because aspirin administration is often typed into the narrative section of the EMS report rather than listed in the medication administration section of a chart (making it difficult to extract from the database), it gives the false impression that EMS providers are not addressing this most basic evidence based treatment for cardiac chest pain. The reality is that aspirin is being given to almost all patients with chest pain of suspected cardiac origin, but that knowledge comes from labor intensive, manual data searching outside of the proper data field (looking through the narrative section of each chart). A manual search of these run reports revealed most patients with chest pain of suspected cardiac origin are in fact receiving aspirin. For this reason, a proper analysis of any medication administration used to treat patients can only happen when appropriate documentation exists. Whether the medication is given prior to arrival or after EMS has initiated care, that medication must be properly documented in a consistent and reproducible fashion. This data set reflects a significant improvement compared to 2018, but still leaves a great deal of room for both better documentation and improved clinical care. Improper documentation continues to hinder a reporting agency's ability and gives the appearance EMS providers are delivering substandard care.

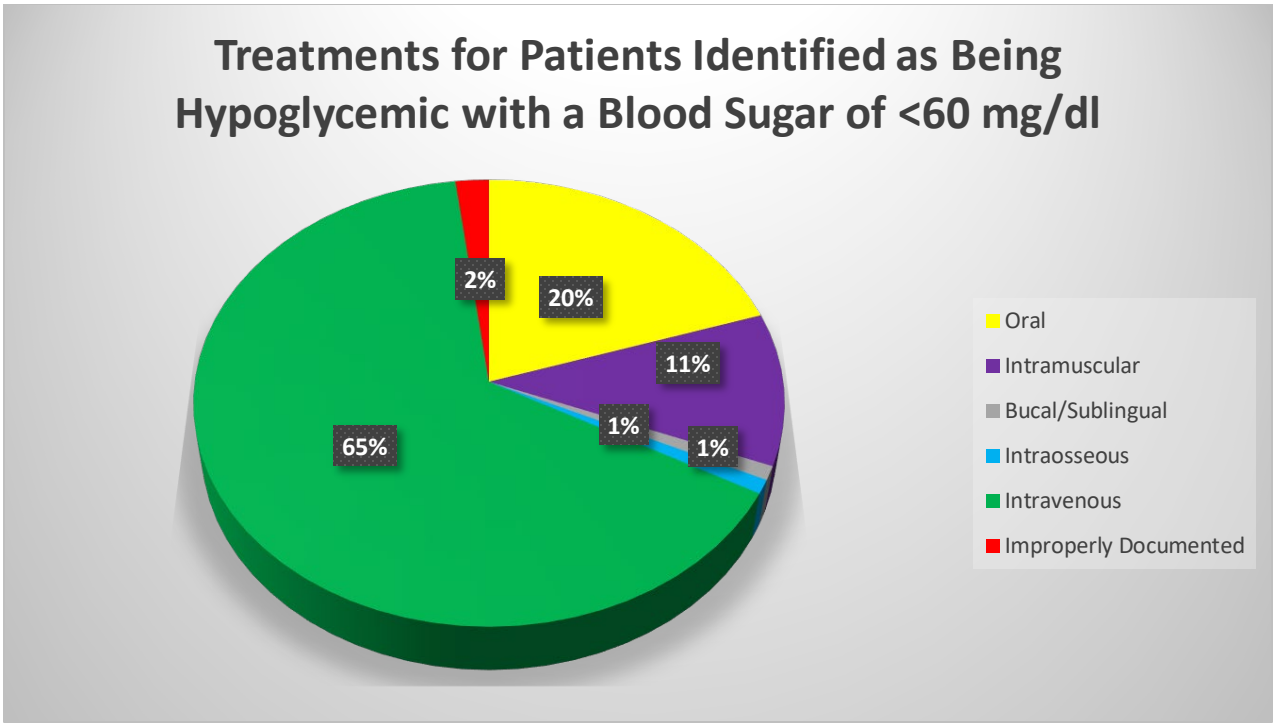
CORRECTIVE ACTION: Properly document all medication administrations in the medication documentation field of the patient care report. Although this information may also be included in the narrative section, placing it in the narrative section alone is not appropriate. Likewise, additional education may be needed for all EMS providers reiterating the importance of documenting medication administration.

TREATING HYPOGLYCEMIA

Diabetic emergencies account for 3-4 percent of EMS calls. Of the various types of diabetic emergencies encountered by EMS, hypoglycemia is the most common. EMS can play a large role in reducing morbidity and mortality from this common life-threatening condition.

This report was built as an extension of the EMS Compass Hypoglycemia-01 metric. The alterations of the EMS Compass metric were subdividing the numerator based on the treatment that was given to the patient and the addition of searching in the patient care narratives for improper documentation of proper treatments. The denominator was interpreted to be patients with a blood sugar of less than 60 mg/dl who were recorded with a primary or secondary provider impression containing “hypoglycemia” in incident reports originating from a 911 request in April 2018. The medication counts were based on an EMS Compass specified medication being properly recorded in an incident report. Inclusion in the “proper treatment described in narrative (improper documentation)” category was counted for all cases where a specified medication or procedure was described in the patient care narrative but not properly recorded. Limitations in the data filtering available in ImageTrend resulted in minor inflations to some of the numbers reported here, but this effect is insignificant. In addition to reporting the types of treatment administered for hypoglycemia, a second report and graph were generated that highlights the percentage of patients that received any treatment and those that did not.





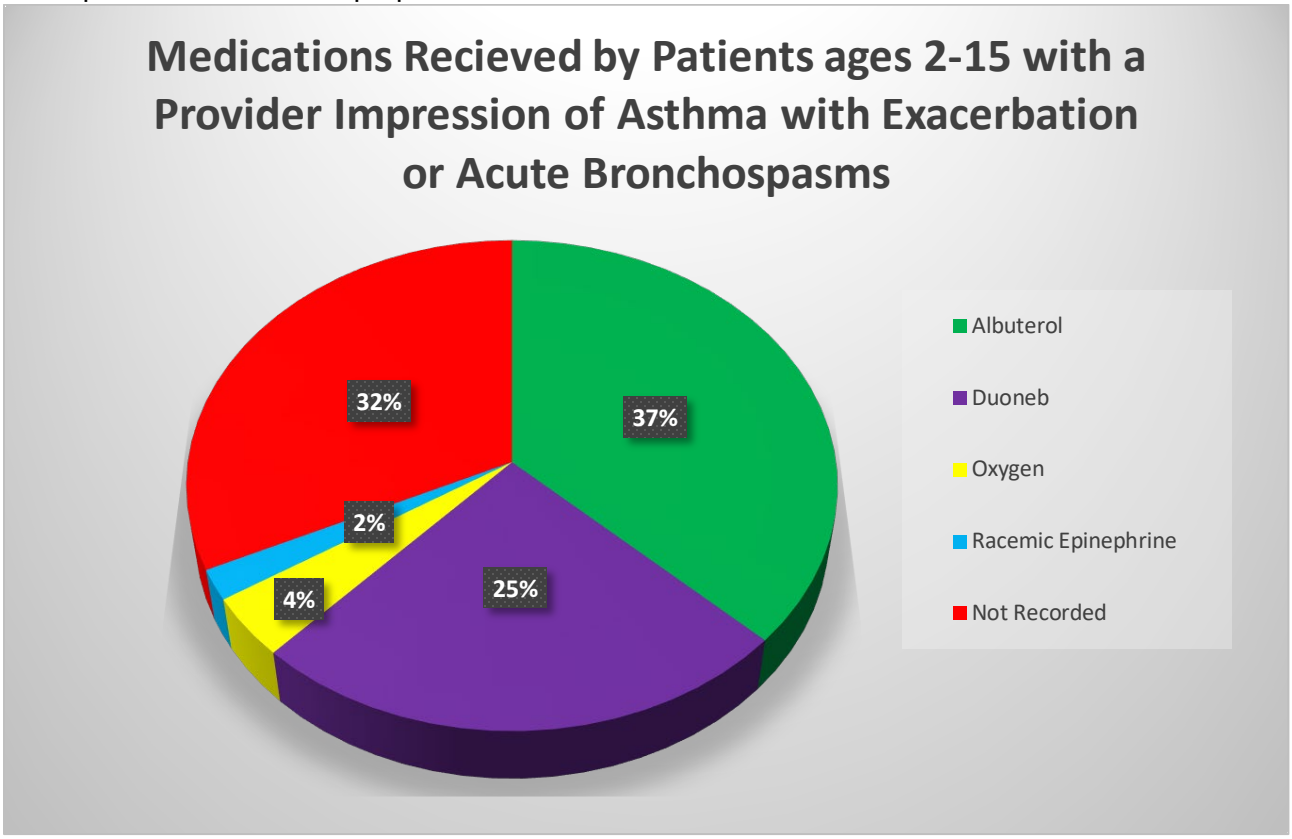
DISCUSSION: Hypoglycemia provides a unique perspective on the importance of proper reporting because of the large number of proper treatment options. With proper documentation of the treatments, trends in treatment choices or provider practice become apparent. However, without proper recording, the number of proper treatments makes determining if proper care was described in a patient care narrative extraordinarily difficult. Minimizing the complexity that surrounds determining if proper treatment was given will allow future reports to be more robust and accurate in describing the treatment of hypoglycemic patients. Treating hypoglycemia is a fundamental cornerstone of EMS clinical care. Eighty-two percent of patients with a blood sugar of less than 60 received some form of treatment. While this will serve as a baseline for Indiana EMS providers, it leaves significant room for improvement in both care and proper documentation. One specific difficulty that hypoglycemia creates is because giving a patient a provision of food is considered proper treatment by EMS Compass guidelines, a proper treatment procedure exists that no one properly records but many people perform. Trying to determine if a patient was given a provision of food to treat their hypoglycemia from the narratives of thousands of cases of hypoglycemia is nearly impossible given the number of unique ways that giving a patient food can be described. For this reason, proper knowledge and use of the appropriate options in the system to eliminate the ambiguity surrounding treatment is always of utmost importance.

CORRECTIVE ACTION: Ensure that EMS providers are aware of all treatment procedures and protocols that can be recorded in ImageTrend, and these procedures are being properly reported. Something as simple as knowing if the patient received food can make the difference in detecting proper treatment in an incident report. Without proper recording, procedures like this easily slip through the cracks of any data scraping system in place to detect them. For this reason, proper reporting is necessary if there is to be any chance of accurate numbers in a metric represented here.

MEDICATION FOR PEDIATRIC RESPIRATORY DISTRESS

Asthma is a chronic disease that affects 24 million people in the United States and causes 5,000 to 6,000 deaths each year. Childhood asthma (pediatric asthma) is the most common serious chronic disease in infants and children and is often under treated. It is estimated asthma affects nearly 10 percent of all children. The treatment of acute asthma exacerbation consumes a significant portion of emergency medical services (EMS) system utilization. Prompt recognition and treatment of asthma, a leading cause of respiratory compromise, by EMS providers can quickly relieve symptoms and improve patient outcomes.

This metric attempts to describe the administration of medication in pediatric patients with a primary or secondary impression of asthma with exacerbation or acute bronchospasm originating from a 911 request. There are very few reports of this type of situation, but the metric describes all properly documented, relevant medications the patients received. It should be noted this is primarily a display of a lack of reporting and the patient care narratives for these few reports all described a proper treatment or another resolution of the issue.



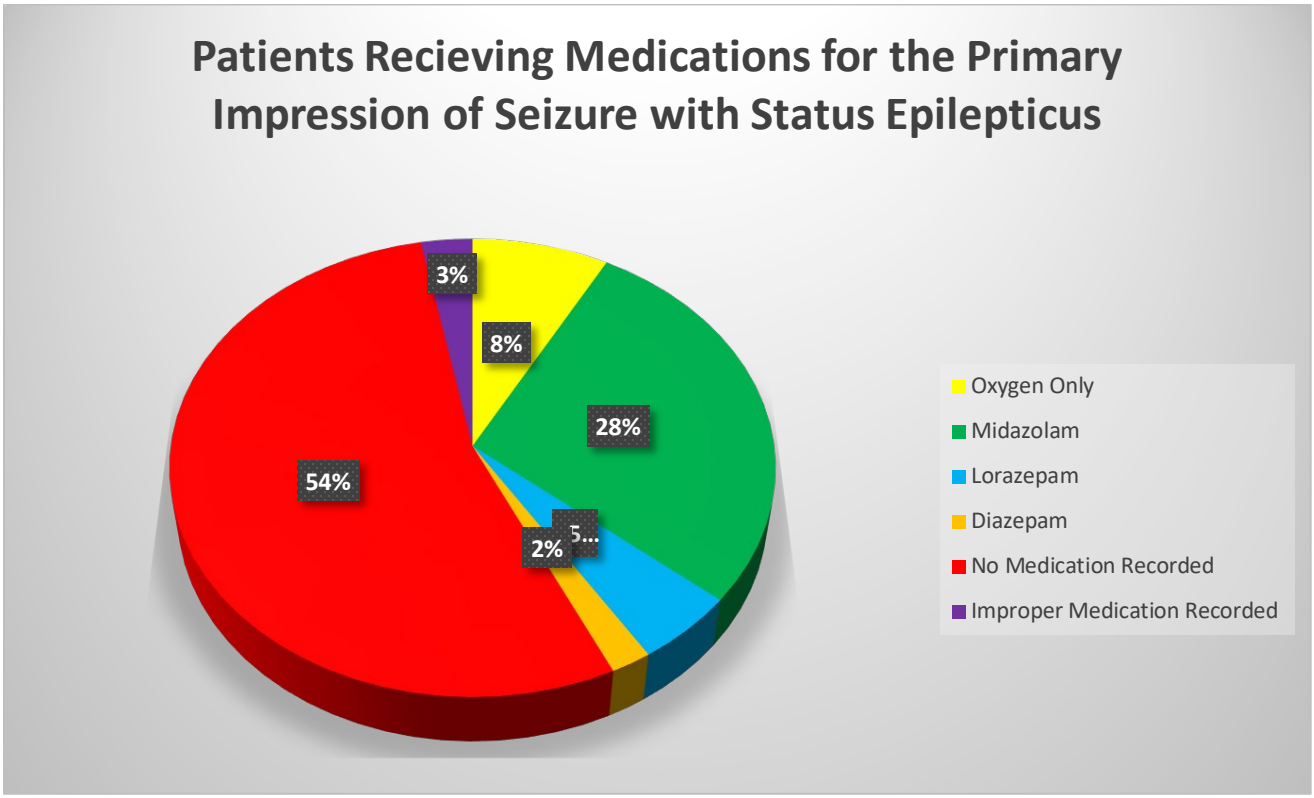
DISCUSSION: Along with the previously mentioned importance of properly documenting medications, looking at medications for pediatric patients with asthma with exacerbation or acute bronchospasm provides an example that speaks to the importance of the documentation of medications being given prior to EMS unit arrival. The documentation of the medication is the simplest way to track if the patient received proper treatment. Even if that treatment came before the EMS unit's arrival, that treatment needs to be acknowledged and documented for the report to be completed properly. For these treatments, the "prior to arrival" field should be used

to indicate when the medication was given to the patient. In 2018, EMS providers documented pediatric asthma was treated only 36 percent of the time. This analysis shows a significant improvement in both clinical treatment and data recording.

CORRECTIVE ACTION: Record medications received by the patient before EMS intervention in the incident report as a given medication and use the “prior to arrival” data label to indicate when the patient was given the medication.

MEDICATION FOR SEIZURES

Seizures are a common presentation in the prehospital setting and on-going seizure activity, or status epilepticus, represents an emergency neurologic condition often treated by emergency responders. Status epilepticus is defined in neurologic research as continued seizure activity lasting longer than 30 minutes, or two or more seizures without the patient regaining normal consciousness over a 30-minute period. In many cases, a patient may have experienced a solitary seizure that had resolved prior to EMS arrival. Once initial stabilization of the patient occurs, benzodiazepines are commonly administered as first-line therapy treatment for patients who are actively seizing. This EMS Compass metric is looking for a specified set of drugs being given to patients with ongoing status seizures originating from a 911 request. Proper medication documentation is counted toward the definitive administration of that drug in this analysis. Any mention of a specified drug in a narrative is counted toward the improper documentation category. If a medication or treatment was administered that was not specified by EMS Compass, that counts as an entry for the untreated category of this metric. As a result, the untreated category may be inflated based on any other set of criteria. Note the only medications being considered are those listed in the chart.



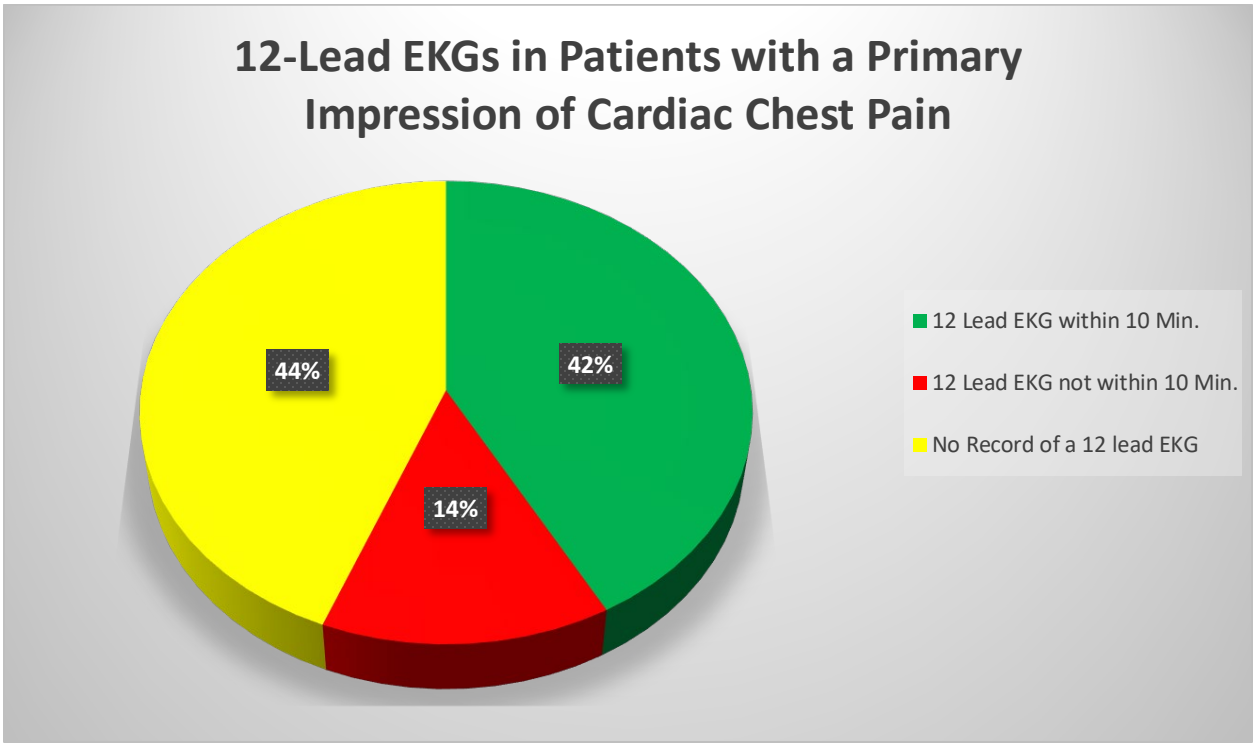
DISCUSSION: This chart is an example of terminology affecting the outcome we are looking to study. If a seizure has stopped prior to EMS arrival, in most instances EMS would not administer any medication. That should be classified as a simple seizure. If the seizure activity is ongoing as previously defined, that would be classified as status epilepticus. It is common practice to treat active seizure activity. The conclusion from this data is that EMS providers are

incorrectly categorizing seizures that do not require treatment as status seizures that should be treated. This would account for the high percentage of no medication recorded. Although improvement from 2018 was seen in that fewer improper medications were recorded, this metric deserves ongoing education and training to ensure that appropriate impressions are provided.

CORRECTIVE ACTION: Ensure all medications are being properly recorded. Ensure advanced life support treatment protocols include appropriate medications to terminate status seizure activity that meet or exceed the standard of care. Educate providers as to the difference between seizure and status epilepticus, so the proper disposition can be recorded.

12-LEAD EKG PROCEDURES FOR CARDIAC CHEST PAIN

Early acquisition of a 12-lead EKG for all patients with a chief complaint of chest pain is critically important to the success of a cardiac evaluation. Pre-hospital 12-lead EKG use is significantly associated with a reduction in mortality during the 30 days following hospitalization. This mortality benefit was seen in STEMI and in non-STEMI alike. This metric is aimed at assessing the administration and recording of 12-lead EKGs for patients recorded as having a primary symptom of cardiac chest pain in incident reports originating from a 911 request. The areas of the chart that represent administered EKGs said to be within 10 minutes or outside of 10 minutes are populated by incident reports where a 12-lead EKG is a properly recorded procedure and an entry exists for "unit arrived at patient to first 12-lead procedure in minutes" to indicate a properly recorded time. A properly recorded procedure without the associated time falls in the category of "12-lead EKG performed with time undocumented/improperly documented." If there is no properly recorded 12-lead EKG, but the narrative of the incident describes a 12 lead, the incident is counted toward the improper procedure documentation portion of the graph. If the incident has not properly recorded 12-lead EKG and the narrative does not mention a 12 lead, the incident is counted toward a 12-lead EKG not being obtained.



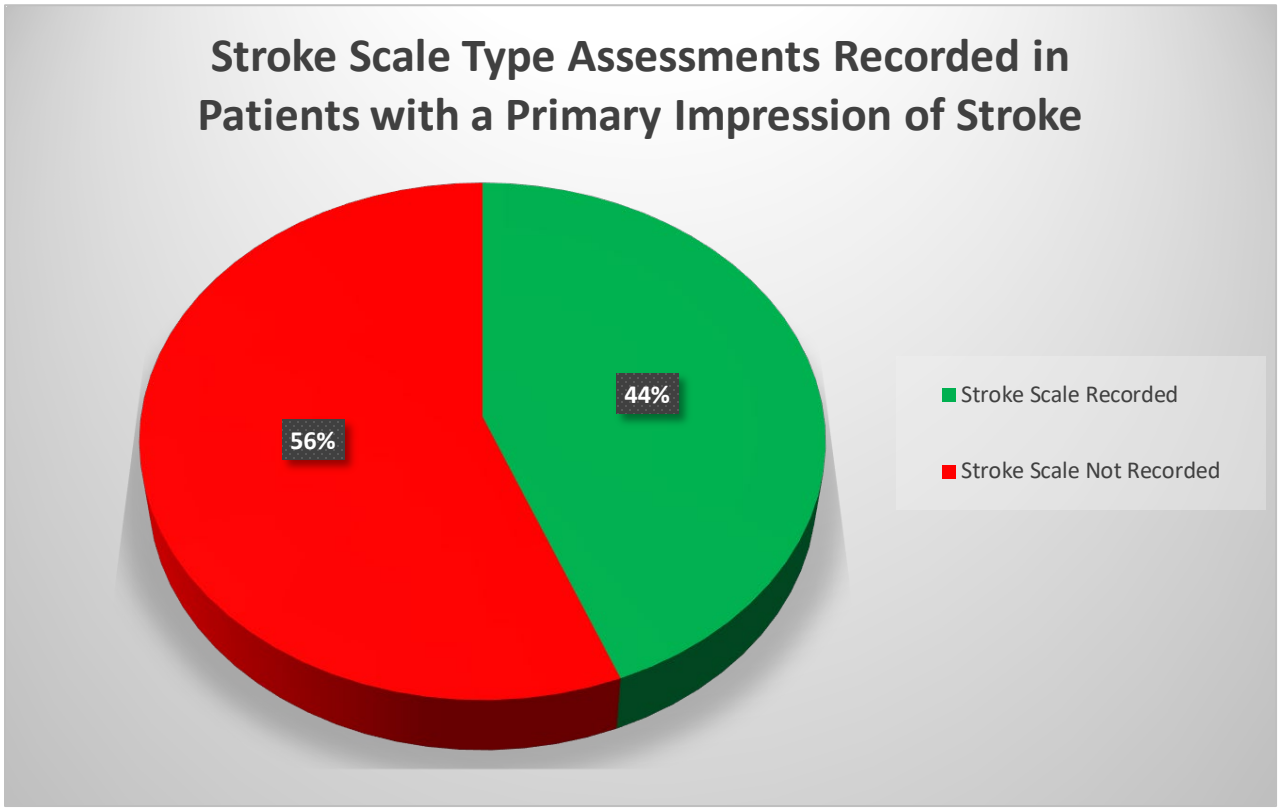
DISCUSSION: With regards to documentation, 12-lead EKGs are a good example of a standard procedure. Proper documentation of procedures of this nature is important in enabling EMS providers to ensure patients are receiving proper and basic care consistent with written clinical guidelines. This data serves as a display of magnitude of the problem that the improper reporting of procedures creates. The improper reporting of this procedure in April 2018 resulted in uncertainty about the condition and care of 46 percent of cardiac chest pain patients. The proper recording of this, or any other procedure, requires the procedure to be recorded in the "procedure performed" data element field and all other relevant related fields, such as the time

of the procedure, to be documented alongside the procedure in their corresponding appropriate field. This report showed an 8 percent increase in the number of 12-lead EKGs being performed within 10 minutes of arrival to a patient. Although this does show a trend in the right direction, ongoing efforts at education and training will be necessary to further improve this metric.

CORRECTIVE ACTION: Ensure all procedures are recorded in the procedure performed data field. Such a common procedure can be easily mentioned in a narrative, but only mentioning the procedure in the narrative is improper recording.

STROKE ASSESSMENT

Stroke is a major cause of death and disability and a common clinical impression by EMS providers. Stroke scales are standardized assessment tools used to identify stroke and when performed, documented, and reported by EMS providers clearly makes a significant impact on patient outcomes. In 2018, legislation added in IC 16-31-2-9.5, known as the "Stroke Rule," was passed requiring EMS provider agencies to have protocols addressing assessment and treatment guidelines in place to manage stroke care. This rule was officially enacted in December 2019. The performance metric detailed here describes how many patients received a stroke assessment out of all patients with a provider impression of a stroke originating from a 911 request. This metric counts any proper recording of an outcome of a stroke assessment and any positive record of a stroke assessment type as a stroke or stroke assessment being performed. Any improper entries and patients who did not receive a stroke assessment constitute the "Stroke assessment not performed/recorded" section of the chart.



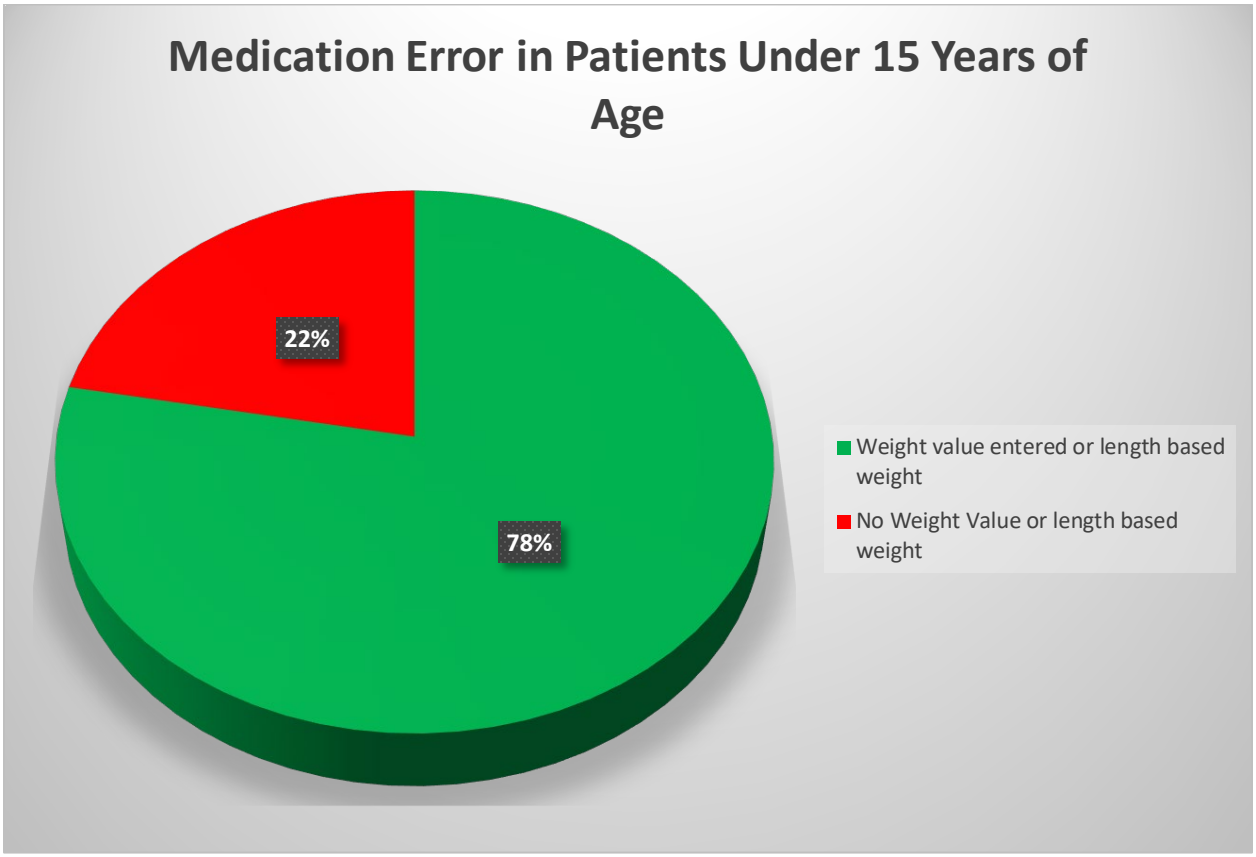
DISCUSSION: Like previous reports included in this quality analysis document, this data likely represents an ongoing problem with data reporting rather than a reflection of clinical care rendered. For the purposes of this report, multiple different stroke assessment tools were recognized. These included the Cincinnati, Los Angeles, Massachusetts, Miami Emergency Neurologic Deficit (MEND), NIH and F.A.S.T. Stroke scales. Correctly, theses scales would be recorded in the data field corresponding with the eVitals.30 or eVitals.29 NEMSIS data field. Performing a stroke assessment is widely accepted as a standard evaluation for any patient presenting with neurologic symptoms. Because of the statistically proven benefit of performing,

documenting and reporting a stroke scale in a patient suspected of having a stroke, it is surprising that 56 percent of patients with a primary provider impression of stroke did not document this critical assessment.

CORRECTIVE ACTION: EMS provider agencies and their medical directors must ensure prehospital treatment protocols both have a stroke scale available and demand that providers perform and correctly document this assessment tool. To that end, , IC 16-31-2-9.5 now requires the EMS Commission to adopt rules under IC 4-22-2 concerning protocols for the identification, transport, and treatment of stroke patients by personnel providing emergency medical services. Rules were adopted in December 27, 2019, and the guidelines for the development of stroke protocols were approved by the EMS Commission. The actual stroke rule was effective December 27, 2019. Model stroke EMS protocols are available from the IDHS EMS division upon request and should be utilized if not already in place at the local level. This metric will be closely examined, and EMS provider agencies in Indiana should expect stroke protocols and stroke documentation to be a part of the IDHS EMS Division audits during the 2020 calendar year.

PEDIATRIC MEDICATION ERROR

Medication errors are common in pediatric patients. Medication errors cause significant mortality and morbidity, including 7000 patient deaths annually from medication errors in the United States. Pediatric patients may have 3 times more medication errors than adult inpatients, and these errors are frequently harmful. Using a weight or length-based estimate is important in the EMS setting for helping reduce medication errors . Using a weight or length-based estimate is important in the EMS setting for helping reduce medication errors. This metric includes all patients under the age of 15 that have any medication recorded as being given on a 911 request response. The metric counts each unique medication for every patient (i.e. for every different medication that was given to a patient, was there was a weight recorded in kilograms or a length-based weight recorded).

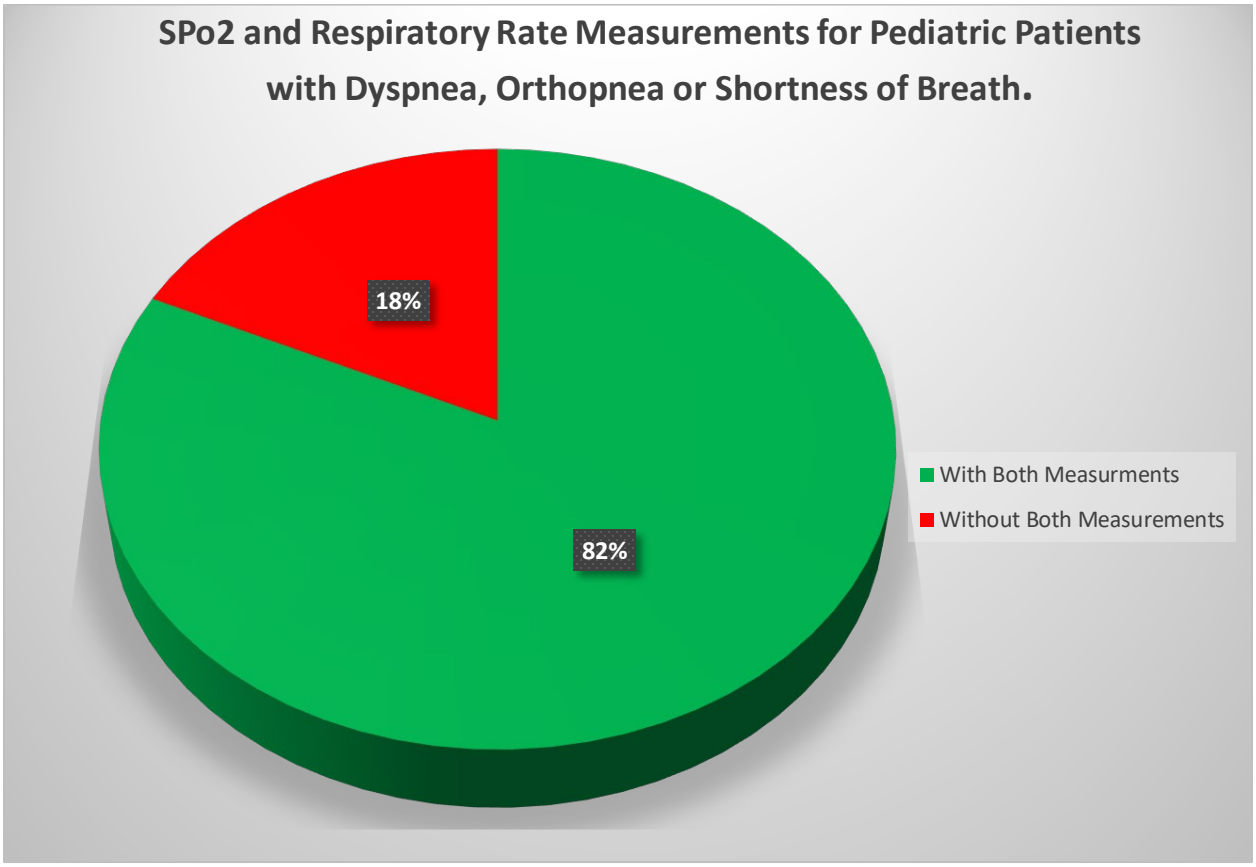


DISCUSSION: Reporting a weight in kilograms or a length-based weight for pediatric patients is another example of the importance of proper reporting. If this kind of medication error is truly an issue, we need to have proper recording to show it. Improper recording obscures the data and makes quality improvement difficult. Every time a procedure or protocol is done properly, it needs to be recorded so that it is possible to catch the times that it is not being done properly. This is the only way to improve patient care. This year's data is statistically consistent with the previous year, when 81 percent of EMS providers had a weight value entered or length-based weight estimate was properly recorded.

CORRECTIVE ACTION: Always record all relevant measurements in the incident report. Proper reporting for patient information can help ensure proper care and help catch improper care. EMS providers and their medical directors must ensure EMS treatment protocols reflect weight (in kilograms) based dosing of medications. For those patients in which weight cannot be determined, a length or age-based tape or chart should be used to accurately estimate patient weight.

RESPIRATORY ASSESSMENT FOR PEDIATRIC PATIENTS WITH RESPIRATORY DISTRESS

Recognizing the pediatric patient with trouble breathing aids in the rapid identification of respiratory distress or respiratory failure. Respiratory distress is a compensatory mechanism and often indicates a sick child. The EMS Compass describes this metric as the “documented evidence that a respiratory assessment was performed on pediatric patients.” This metric counts all pediatric patient under 15 who have a primary or secondary impression of EMS Compass described respiratory distress for responses where the type of service requested is a 911 request. This chart counts every unique respiratory assessment for those patients. An assessment counts toward being correct if a peripheral capillary oxygenation as measured by pulse oximetry (SPo2) measurement and respiratory rate are recorded in the same entry of the report.

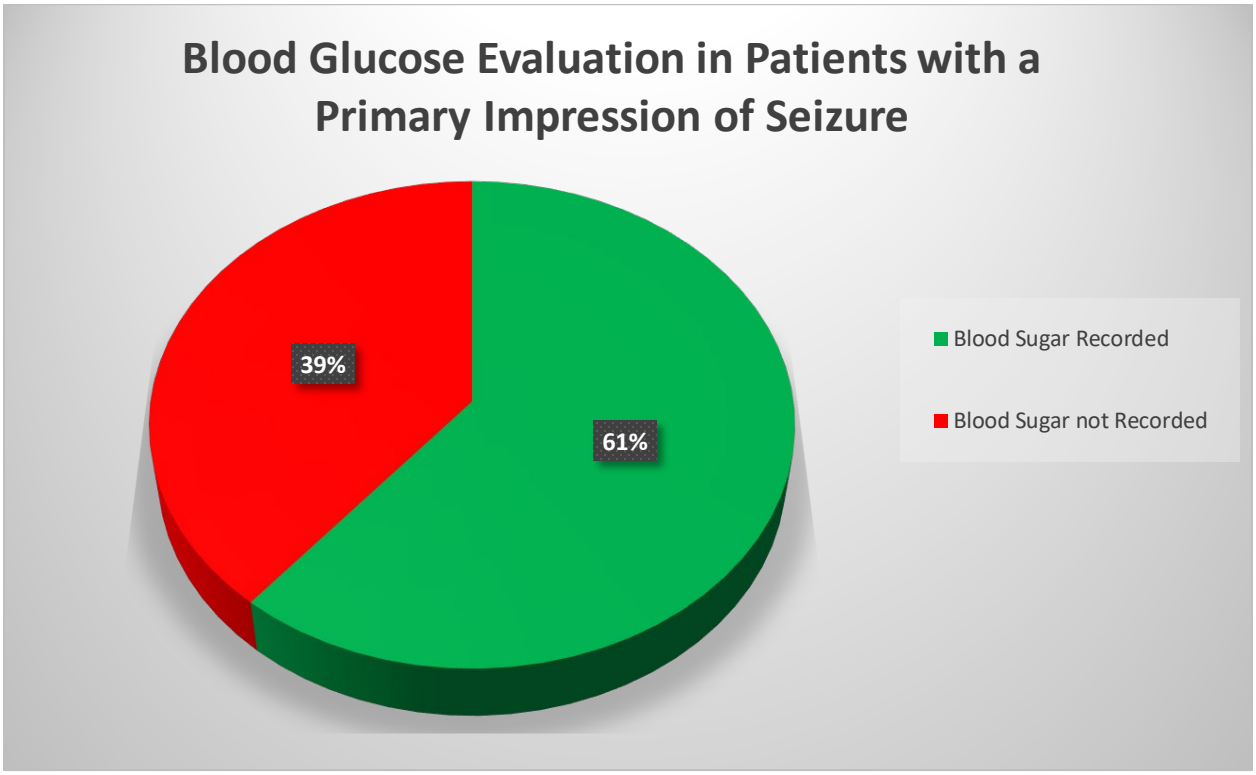


DISCUSSION: A child with breathing difficulty requires a rapid, accurate assessment focused initially on the patient's appearance, work of breathing, and skin color and condition. Respiratory rate and SpO2 measurement are objective markers of respiratory assessment and should be performed and documented on all pediatric patients with respiratory complaints. The data shows the beginning of an upward trend in properly performing and documenting a respiratory assessment in children with 82 percent of charts documenting both measures compared to 78 percent in 2018.

CORRECTIVE ACTION: EMS provider agencies and their medical directors must ensure that pediatric assessment training is current, ongoing, and reinforced frequently. Likewise, it is important to have both working pulse oximeters and pediatric pulse oximetry probes. This critical assessment must be performed and documented to ensure proper care of the pediatric respiratory distress patient.

BLOOD GLUCOSE EVALUATION SEIZURE PATIENTS

Hypoglycemia is known to cause seizures. Although the frequency of hypoglycemia-induced seizures is unknown, checking a blood sugar before or after the administration of anti-epileptic medications is necessary. This metric counts blood glucose measurements in seizure patients originating from a 911 request. If a patient received one or more properly recorded blood glucose evaluations, they are counted as one patient having received a blood glucose measurement. This metric exists without any duplicates and reports only the proper documentation status of this evaluation.

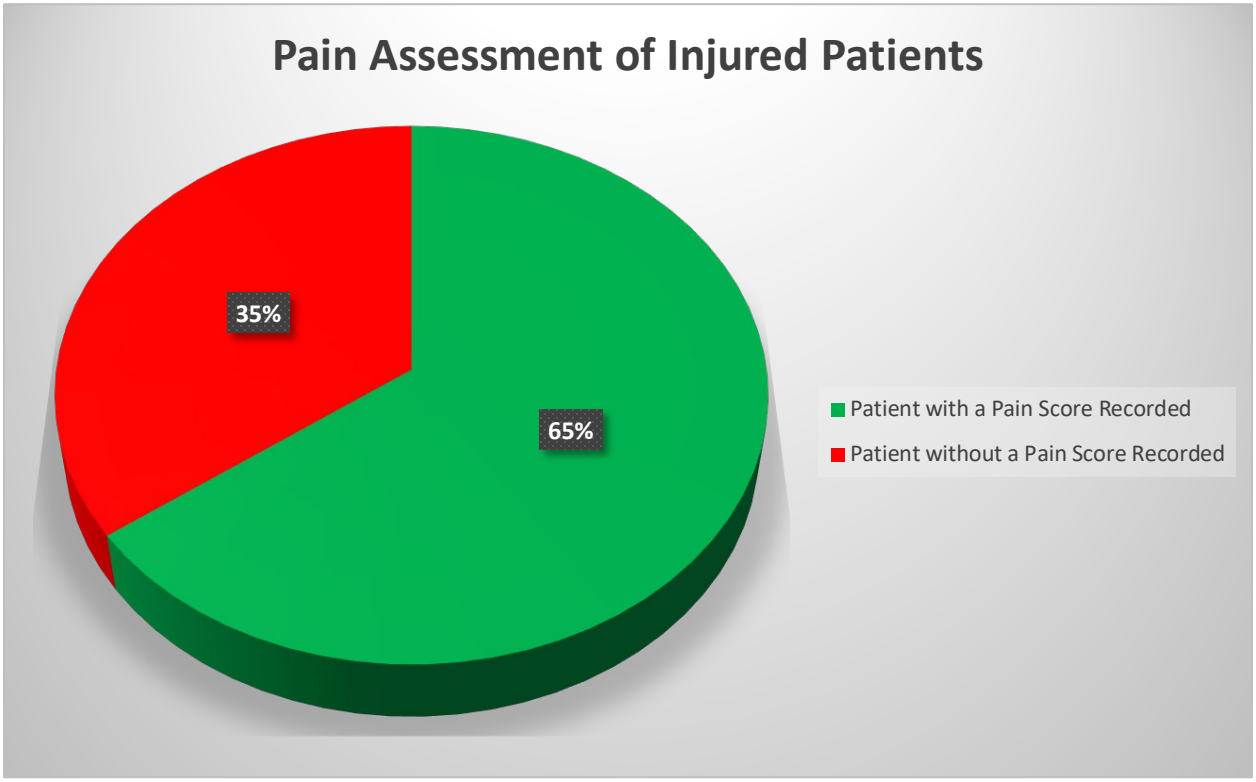


DISCUSSION: Seizure is a frequent reason for EMS activation. Many EMS protocols require glucose testing prior to or after treatment of the seizure. Blood sugar testing (accucheck testing) is quick, easy and is performed by both basic and advanced life support providers. While it is alarming that this basic evaluation is not performed in 39 percent of the data examined, the data did reveal an improvement from 54 percent to 61 percent compared to April 2018.

CORRECTIVE ACTION: Education and training of the importance of blood sugar testing should be a part of all EMS provider organizations. Although this is a basic skill and easy to perform, the data indicate that reinforcement of this assessment tool needs to be undertaken by EMS provider agency medical directors and EMS educators. Blood sugar testing should be performed either before or after anti-epileptic medication administration on all patients experiencing a seizure.

PAIN ASSESSMENT FOR TRAUMA PATIENTS

Acute pain in trauma patients in emergency care is often cited as being under-treated. Although administration of pain medications has more recently come under greater scrutiny, some still consider the pain scale to be the fifth vital sign. This metric counts what injury had a properly recorded pain scale value for patients originating from a 911 request. Inclusion is based on a "yes" entry under "possible injury." This metric is primarily reporting lack of proper entry. It is difficult to tell if verbal or any other unrecorded pain assessment took place.

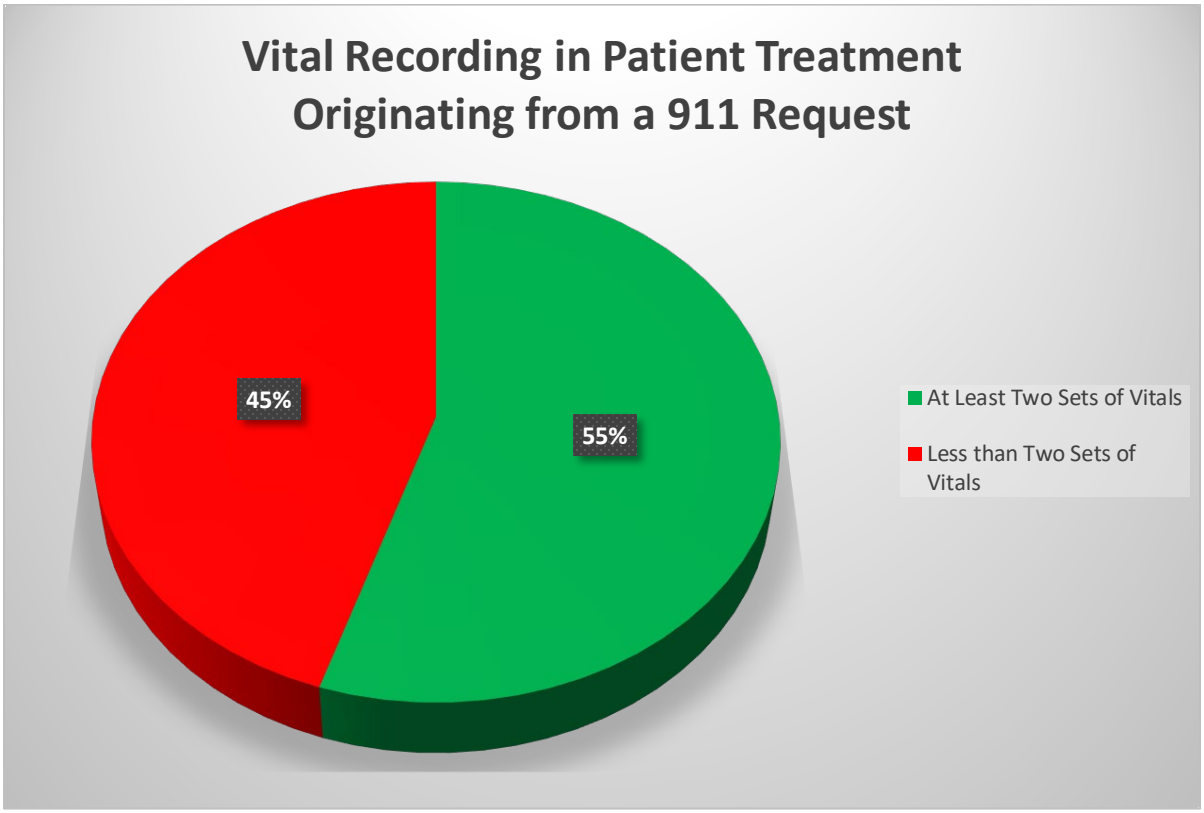


DISCUSSION: Pain is one of the most common reason patients seek medical attention. EMS providers routinely treat patients with pain and pain medication administration is a consistent protocol found in nearly all EMS provider agency medical treatment protocols. Although the recent opiate crisis has drawn more attention and training to the appropriate administration of pain medications, properly documenting pain trending and treating pain is still a necessary component of EMS provider patient care. Performing and documenting a pain scale score is an important and objective way to assess a trauma patient with a documented injury. Data in this report is consistent with that found in April 2018.

CORRECTIVE ACTION: Although a patient's response to pain assessment will be a subjective answer, EMS provider patient assessment of pain is important to assure proper treatment and use of various types of pain treatments. Pain scales that objectively measure a patient's pain should be incorporated into all EMS provider treatment protocols.

GENERAL PRACTICE VITALS RECORDING

Vital signs are an important component of patient care. They determine which treatment protocols to follow, provide critical information needed to make life-saving decisions and confirm feedback on treatments performed. Accurate, documented vital signs are a very important part of EMS. The chart depicts the proportion of patients originating from a 911 request who had two full sets of vitals properly recorded. For the purposes of this graph, a full set of vitals is considered to be pulse, respiratory rate and systolic blood pressure. A patient counts as having two full sets of vitals if the recorded vitals count is two or greater for all the mentioned vitals.

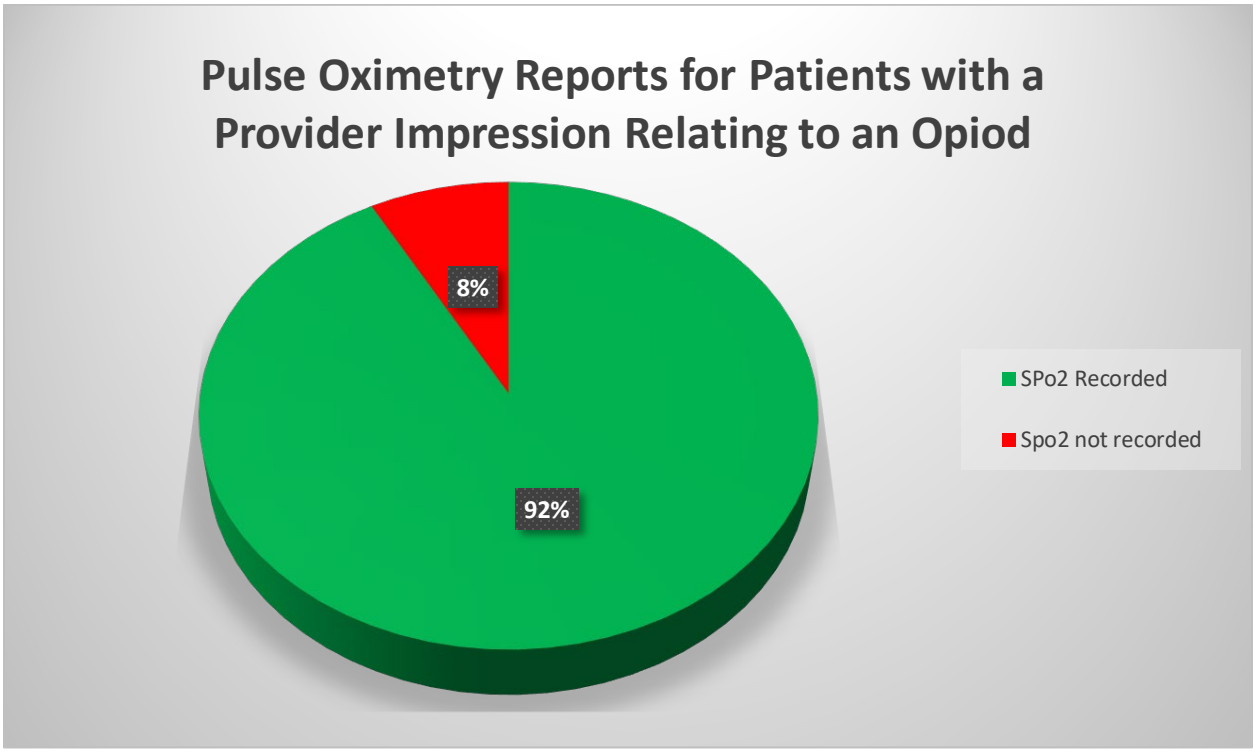


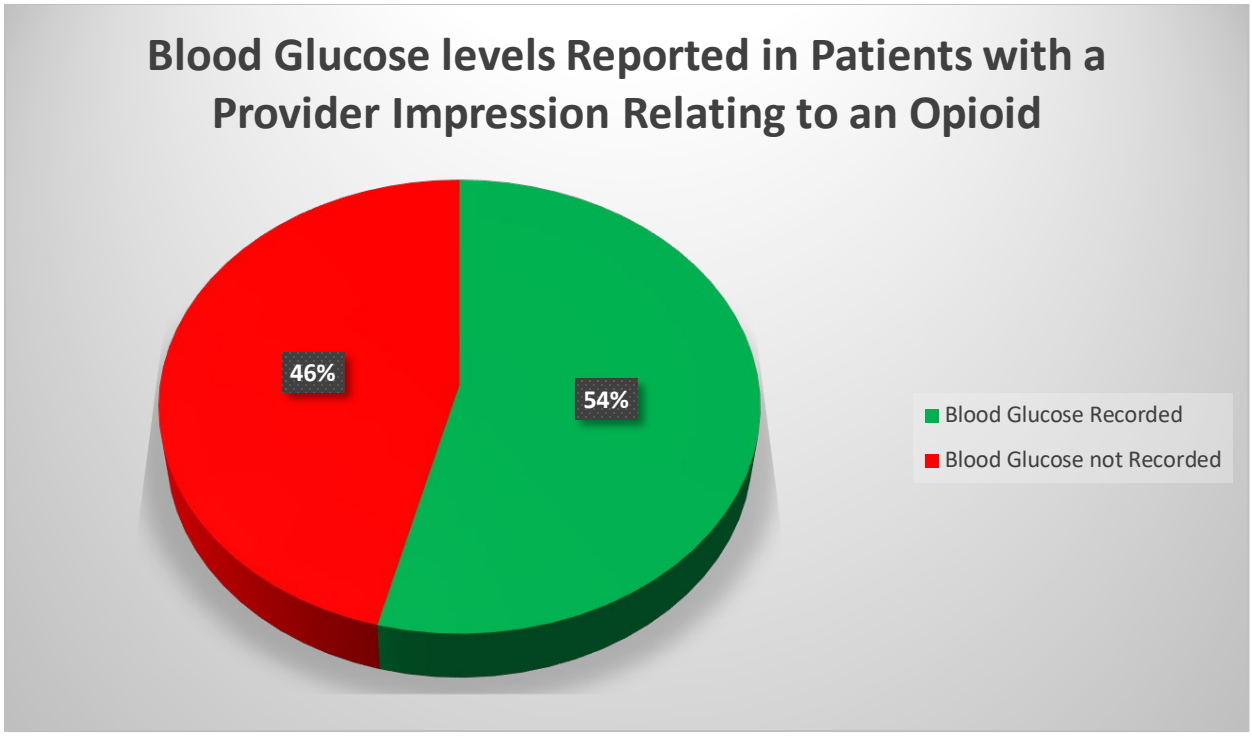
DISCUSSION: This general practice guideline assesses the recording of two full sets of vitals for all patients. As an EMS clinical guideline for all patients, this is an assessment of vitals recording in addition to recording that may be necessary per procedure protocol. By investigating the general practice of recording vitals, we can see a lack of proper documentation in one of the most basic capacities. Recording vitals is important for patient care and for the post-incident assessment of patient care by a doctor or in metric such as these. A trend of improperly recording vitals could lead to a loss of information substantial enough to make large scale assessments impossible, and the resulting misleading data could cause needed improvement to be overlooked. Recording vitals is a key part of the outlined clinical guidelines for every run, and proper and complete reporting depends on vitals being recorded. Proper vital sign recording increased from 46 percent to 55 percent since the last publication of this report.

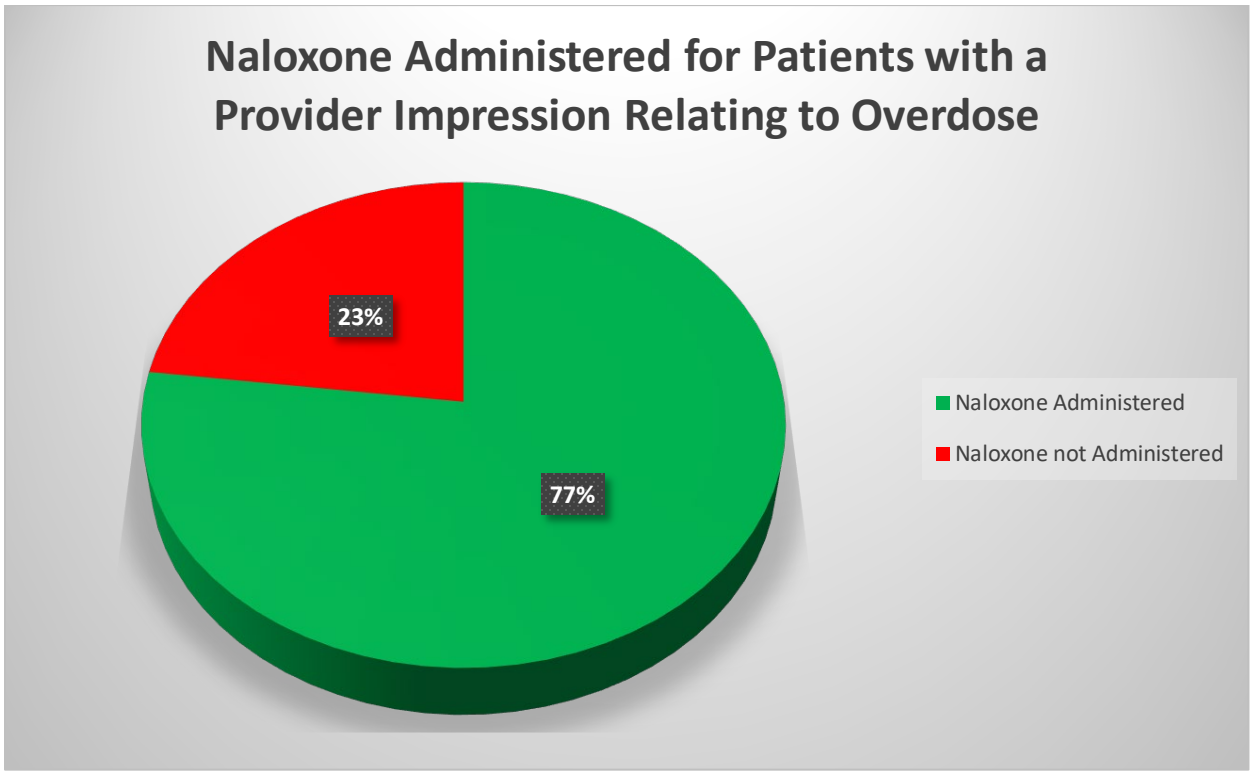
CORRECTIVE ACTION: Ensure vitals are being consistently monitored and recorded for all patients.

TREATMENT PROTOCOLS FOR OPIOIDS

Opiate overdoses have been increasing in recent years and are a common EMS response. Opiate overdoes commonly present with altered mental status. Causes of altered mental status run the gamut from easily reversible (hypoglycemia) to permanent (stroke). Developing a structured and systematic approach to abnormal mental status patients, including opioid overdose, will allow EMS providers to develop and streamline the diagnostic work up and management of these patients. This graph displays three key treatment guidelines as outline by the NASEMSO “National Model EMS Clinical Guidelines” for opioid poisonings and overdoses. The matrix included 911 request incidents are those with a provider impression containing any sort of opioid related condition. These counts include only proper documentation of the relevant fields. There is no duplication of any incident in the report.







DISCUSSION: The opioid data stands as a representation of how proper reporting would allow for a bigger picture analysis of a specific condition. With a more complete and proper reporting system, there will be a closer look at the care patients are receiving by having more relevant

data available. So, while this data may look good, in the context of all the other reporting errors that are occurring, it is difficult to know if what the data shows is actionable information. Complete and proper recording would allow for quick and easy assessments of any treatment based on the clinical guidelines for that condition. Good data will enable high quality reports of this nature to be created, and the result of having a wide array of these charts would be improvement in patient care across the board. Pulse oximetry measurement for patients with a provider impression relating to an opioid were unchanged from the previous report. Blood glucose analysis as well as naloxone administration both increased likely because of continued efforts at education and training for opioid related problems. It is anticipated that data from these metrics will remain steady in future publications.

CORRECTIVE ACTION: Properly report all relevant data elements for each incident. Doing so will allow quality improvement to be better in the future.

ADDITIONAL INFORMATION

IDHS publishes a data dictionary that identifies the state and national data elements. Using the Data Dictionary to verify that an individual EMS provider agency is documenting all the state and nationally required data elements would lead to improved quality of data. This list can be downloaded using the link provided. Agency-specific ePCR vendors should also ensure state required data elements are reported before an individual provider can close a specific patient encounter.

HELPFUL LINKS

NATIONAL EMERGENCY MEDICAL SERVICES INFORMATION SYSTEM

www.Nemsis.org

DATA DICTIONARY AND STATE DATA SET

http://www.nemsis.org/media/nemsis_states/indiana/Resources/IN_StateDataSet.xml

SCHEMATRON VALIDATION RULES FOR PATIENT CARE REPORT DATA

http://www.nemsis.org/media/nemsis_states/indiana/Schematron/IN_EMSDataSet.sch.xml