STATE OF INDIANA
EMS SYSTEM QUALITY IMPROVEMENT REPORT
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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. 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 The State EMS Registry. The database used by the Indiana Department of Homeland Security (IDHS) to house this data is known as ImageTrend.

Over the last 48 months, significant time and effort has gone into improving both the quality and quantity of data being reported by EMS provider agencies to IDHS. The first ever State of Indiana EMS System Quality Improvement Report was published in July of 2018. That report included one month of complete data marking April 2018 as the first month that data quality and quantity were sufficient enough to perform a robust data analysis. This was followed by the second year of reporting with the April 2018 - March 2019 data report being published in January of 2020. The data report reflecting calendar year 2020 was delayed due to the COVID-19 pandemic, but is included in this report. As in previous years, this report continues a focus on clinical quality improvement by using the same data metrics over the dates of Jan. 1, 2020 – Dec. 31, 2020. Additionally, for the first time, this report offers a longitudinal view of the quality improvement report that identifies trends over the past three years of data collection.

Pre-hospital (EMS) care is delivered in a challenging and often times unique environment. Patients are often seriously ill or injured before EMS arrive 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 despite the fact that best possible care was provided in compliance with any given protocol or clinical guideline. In addition, the diverse and continually changing pre-hospital environment makes performing many assessments, treatments and interventions more complicated. We 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 individuals or identify faults, but to understand and improve the system and its practices on an organizational level. The goal of a CQI system is not to discipline a specific provider or agency but provide a mechanism to understand shortcomings. Deficiencies in patient care are the medical director's responsibility to address and should indicate a need for a closer look at the education, training and/or protocols that are in place.

The majority 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 (NEMSQA). Contemporary information of the initiative can be found at http://www.NEMSQA.org. While IDHS continues to transition to fully adopt the most current and accepted version of the NEMSQA measures, this report reflects data points from both the EMS Compass and NEMSQA reporting recommendations.
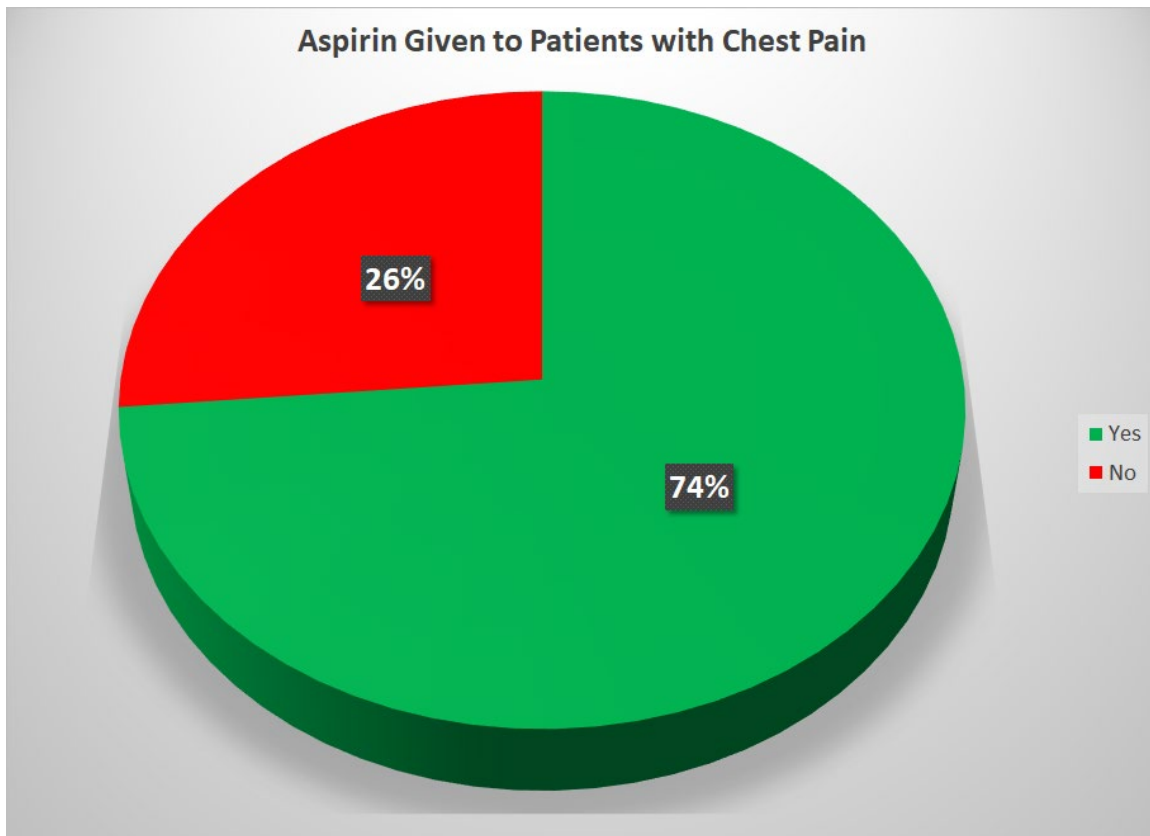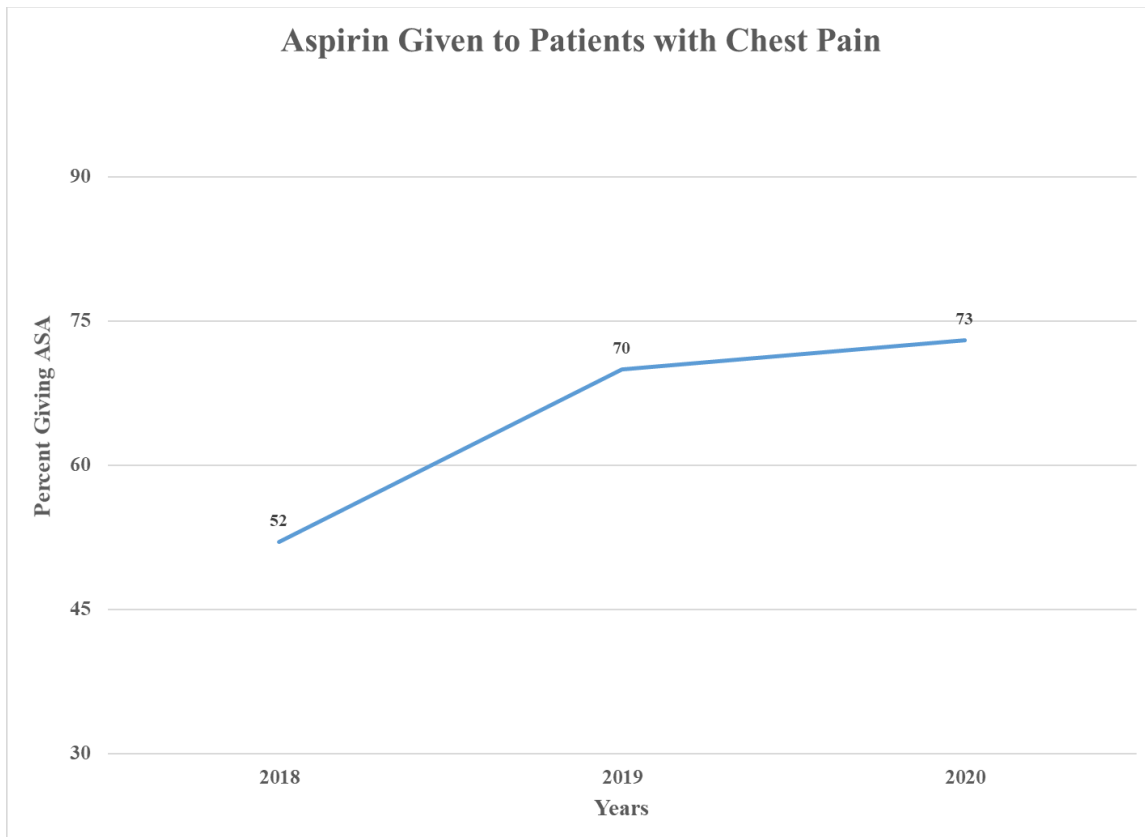
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ASPIRIN ADMINISTRATION

Aspirin was first shown to be a lifesaving drug in 1974. Since then, its value in the reduction of risk after myocardial infarction (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 widely 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 recommended by the verbal direction of an emergency medical dispatcher, directly administered by a basic emergency medical technician (EMT), an advanced EMT or paramedic.

To obtain this data, the Indiana EMS Registry was queried from the time period studied in this report. Although no EMS Compass bundle or NEMSQA measure 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. Properly recording the medication date and time along with the administration prior to EMS care, "yes or no", were both included.
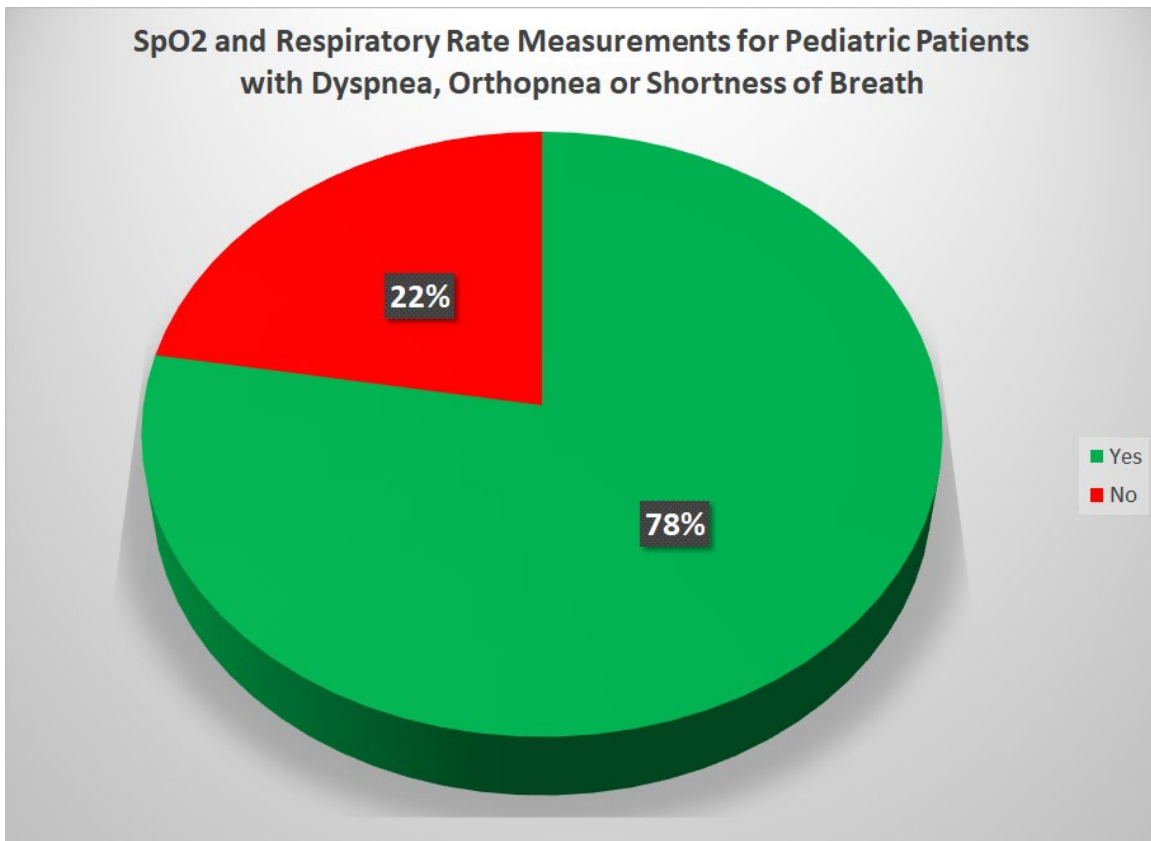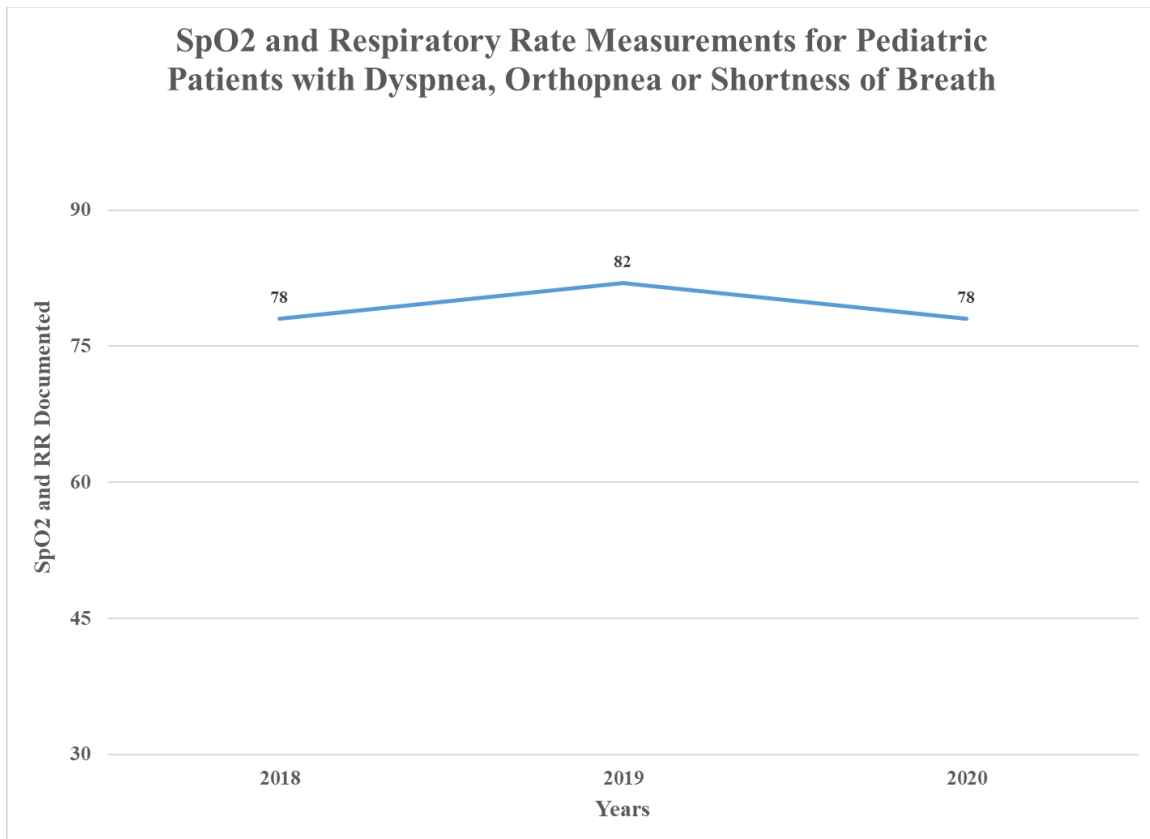
Aspirin Given to Patients with Chest Pain

26%

74%

■ Yes
■ No

Aspirin Given to Patients with Chest Pain

Percent Giving ASA (y-axis: 30, 45, 60, 75, 90)

- 2018: 52
- 2019: 70
- 2020: 73

Years (x-axis)

DISCUSSION: Over the past three years, medication documentation of aspirin administration has dramatically improved, from 52% in 2018 to 73% in 2020. In years past, it was interpreted that the low percentage of administration was due to a documentation error where many providers were documenting aspirin administration in the narrative section, but not recording it in the medication section. The verification for this measurement is based upon notation of aspirin in the medication section of the documentation since that is the method that permits a non-manual review of data.Over the past three years, EMS providers have seemingly improved the correct documentation, but at 73% there is still a great deal of room for both better documentation and improved clinical care. A manual search of these run reports revealed that a much higher percentage of patients did receive aspirin but that it was documented in a manner that it was not properly recorded. 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. Improper documentation continues to hinder a reporting agency's ability and gives the appearance that 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 also may be included in the narrative section, placing it in the narrative section alone is not appropriate.

RESPIRATORY ASSESSMENT FOR PEDIATRIC PATIENTS WITH RESPIRATORY DISTRESS

Evaluating a pediatric patient with trouble breathing is essential to 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 patients under the age of 15 who have a primary or secondary impression identified that is described as 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 an oxygen saturation/SpO2 measurement and respiratory rate are recorded in the same entry of the report.
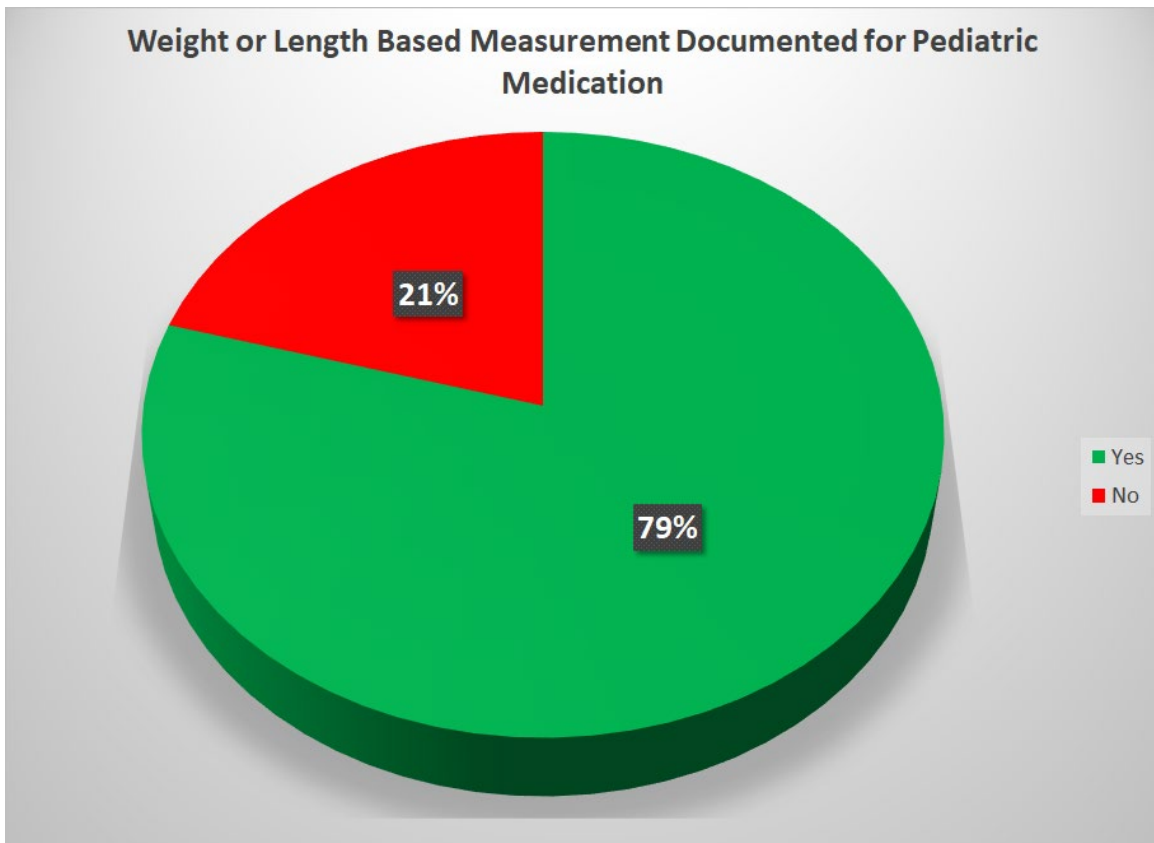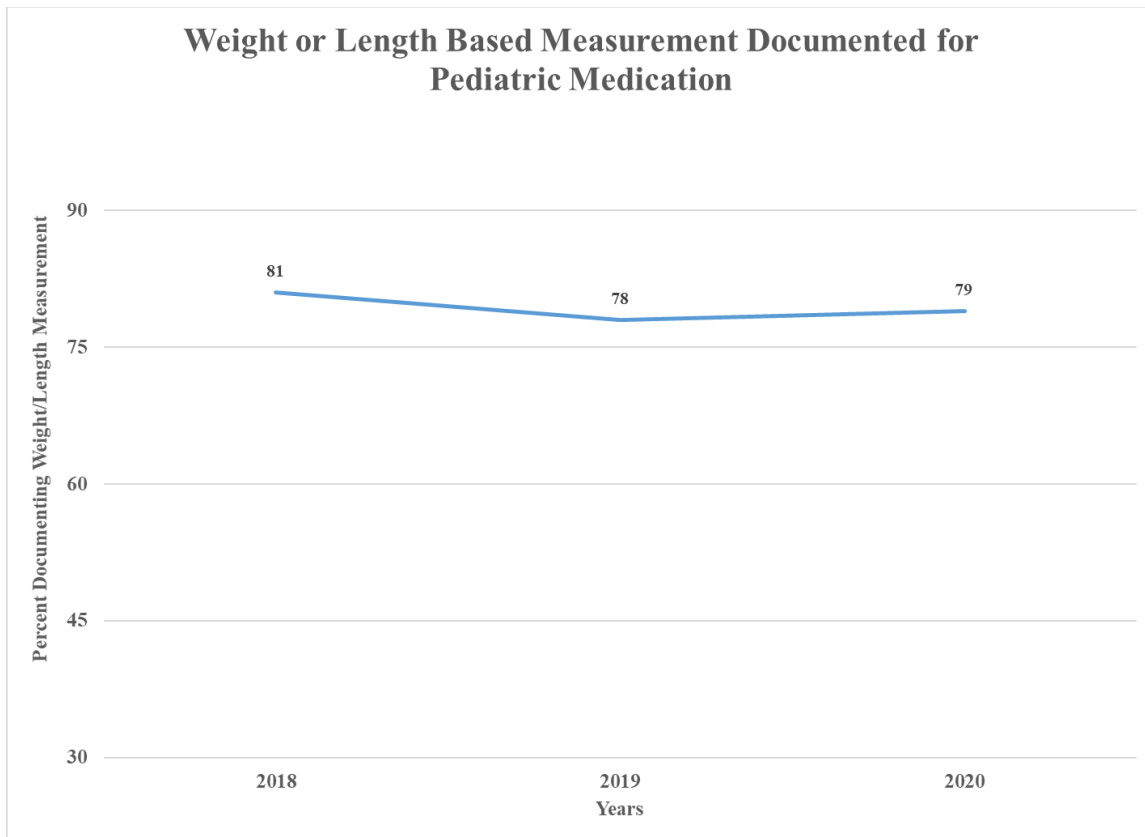

SpO2 and Respiratory Rate Measurements for Pediatric Patients with Dyspnea, Orthopnea or Shortness of Breath

- 22%
- 78%
- Yes
- No

SpO2 and Respiratory Rate Measurements for Pediatric Patients with Dyspnea, Orthopnea or Shortness of Breath

DISCUSSION: A child with breathing difficulty requires a rapid, accurate assessment focused initially on the patient's appearance, work of breathing, 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 a decrease in the progress made in the previous year and a complete reversion to similar levels of documentation recorded in 2018.

CORRECTIVE ACTION: EMS provider agencies and their medical directors must ensure 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. In 2019, IDHS, in coordination with the Emergency Medical Services for Children (EMS-C) organization began requiring all EMS provider agencies in the state of Indiana to appoint a Pediatric Emergency Care Coordinator (PECC). This individual's role is to focus and improve the pediatric care provided by each EMS provider organization. IDHS urges all EMS organization PECCs to take a more active role in promoting and improving pediatric care, including the pediatric specific metrics included in this annual report. Improving compliance with this metric would benefit from further engaging the PECCs to work within their organizations to understand the value of proper performance and recording of the metric items.

PEDIATRIC MEDICATION ERRORS

Medication errors are common in pediatric patients. Medication errors cause significant mortality and morbidity, including 7,000 patient deaths annually from medication errors in the United States. Pediatric patients may have three times more medication errors than adult inpatients and these errors are frequently harmful. This metric describes how frequently a weight in kilograms or a length-based weight estimate is recorded for pediatric patients who received medication in EMS incidents originating from a 911 request. This metric includes all patients under the age of 15 who 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).

Weight or Length Based Measurement Documented for Pediatric Medication

Weight or Length Based Measurement Documented for Pediatric Medication

Percent Documenting Weight/Length Measurement (y-axis: 30, 45, 60, 75, 90)

81 — 2018
78 — 2019
79 — 2020

Years

DISCUSSION: Every time a procedure or protocol is done properly, it must be recorded in the patient care record, and more specifically, in the appropriate field. This is the only way to improve patient care. When medications are given, proper dosing of those medications is paramount and weight-based dosing is almost universally indicated for pediatric patients. Documenting patient weight and using that weight to calculate proper medication dosing has been shown to reduce pediatric medication errors.

CORRECTIVE ACTION: Always record all relevant measurements in the appropriate field(s) of the patient report. Proper reporting of patient information can help ensure proper care and catch improper care. EMS providers and their medical directors must ensure that EMS treatment protocols reflect weight-based (in kilograms) 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.
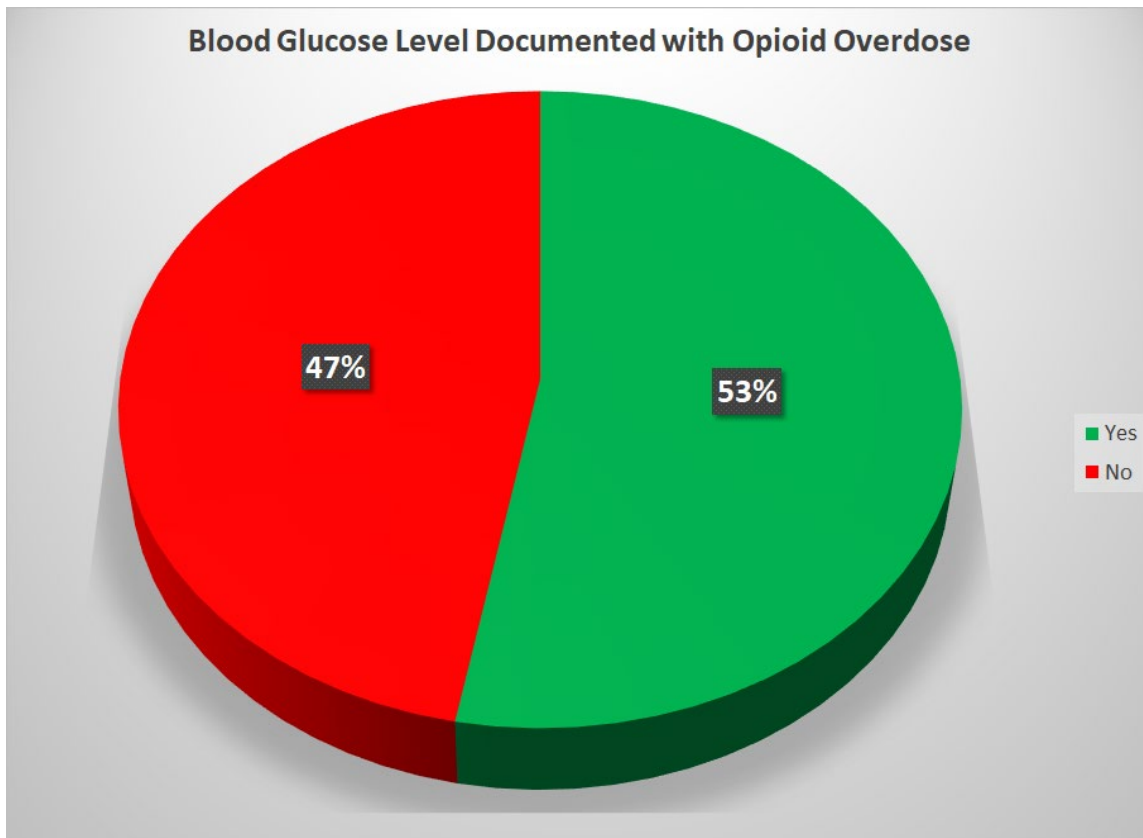
TREATMENT PROTOCOLS FOR OPIOIDS

Opiate overdoses have an increasing prevalence in all areas of the United States. Opiate overdoses commonly present with altered mental status, hypoxia and respiratory depression. Causes of altered mental status have a broad differential including easily reversible causes (hypoglycemia) to other causes, some of which may be irreversible (stroke). Developing a structured and systematic approach to abnormal mental status assessment, including opioid overdose, will allow EMS providers to develop and streamline the diagnostic workup and management of these patients. The following graphs display three key treatment guidelines as outlined by the National Model EMS Clinical Guidelines (NASEMSO) for opioid poisonings and overdoses. The 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.
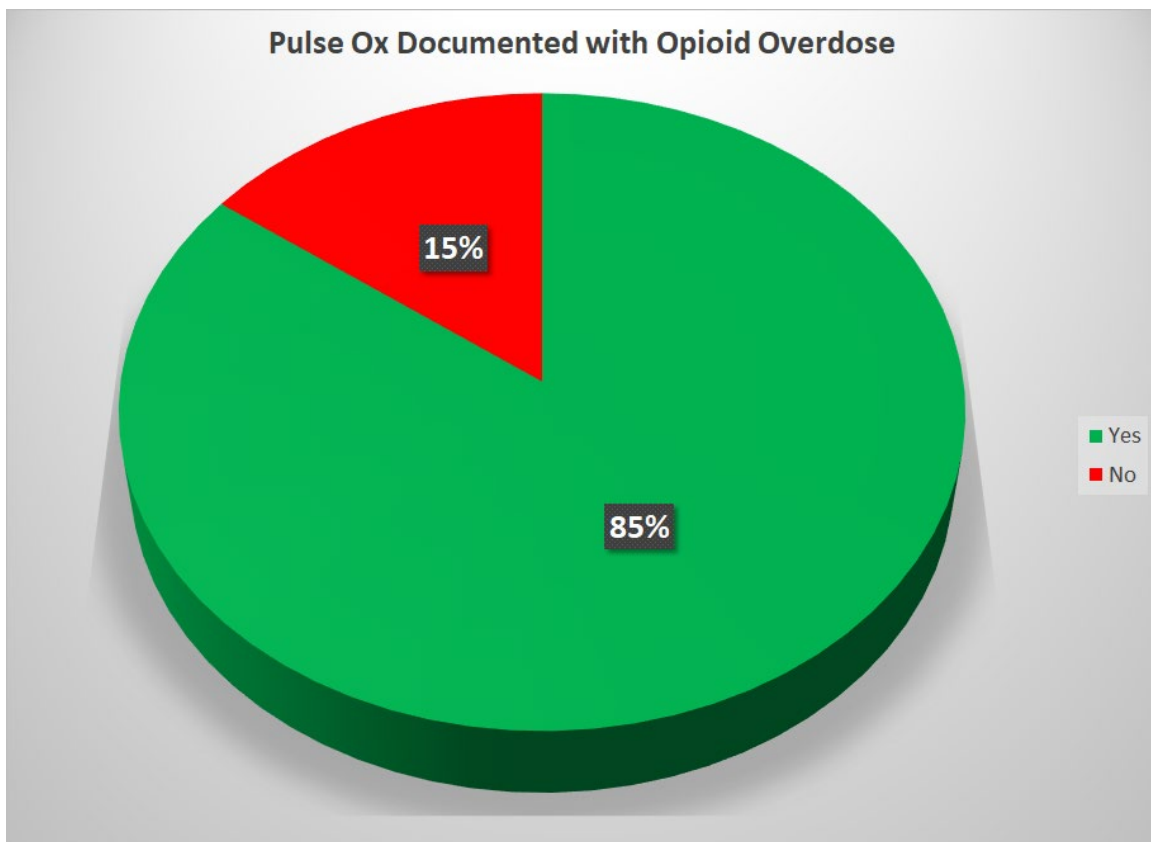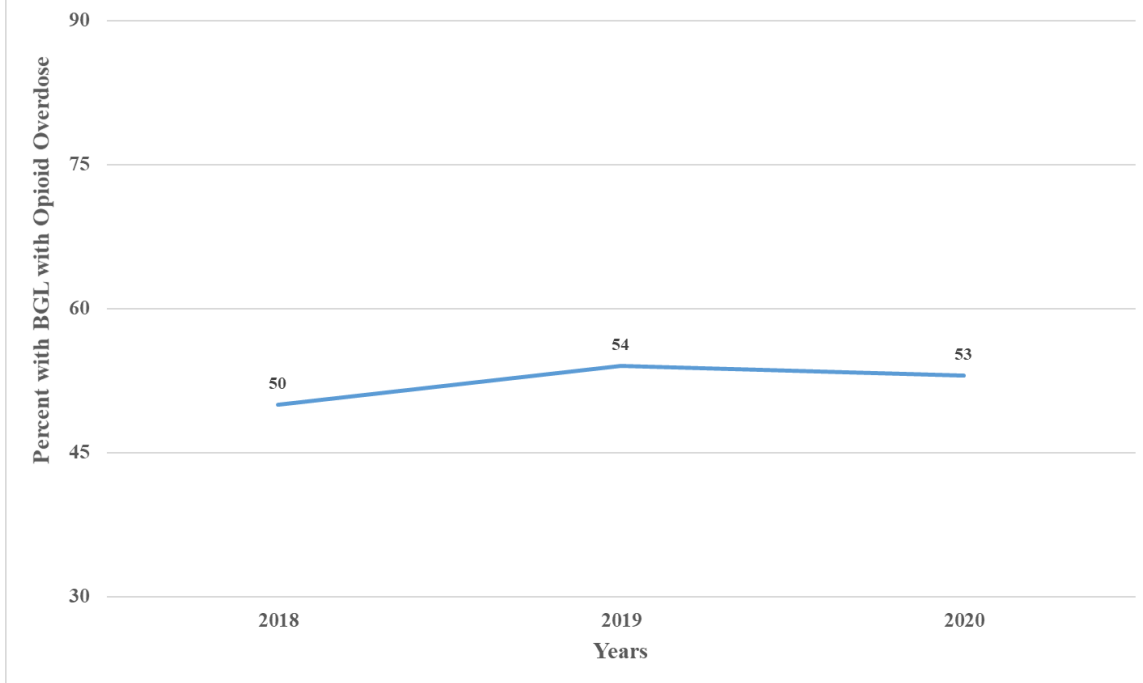

Pulse Ox Documented with Opioid Overdose
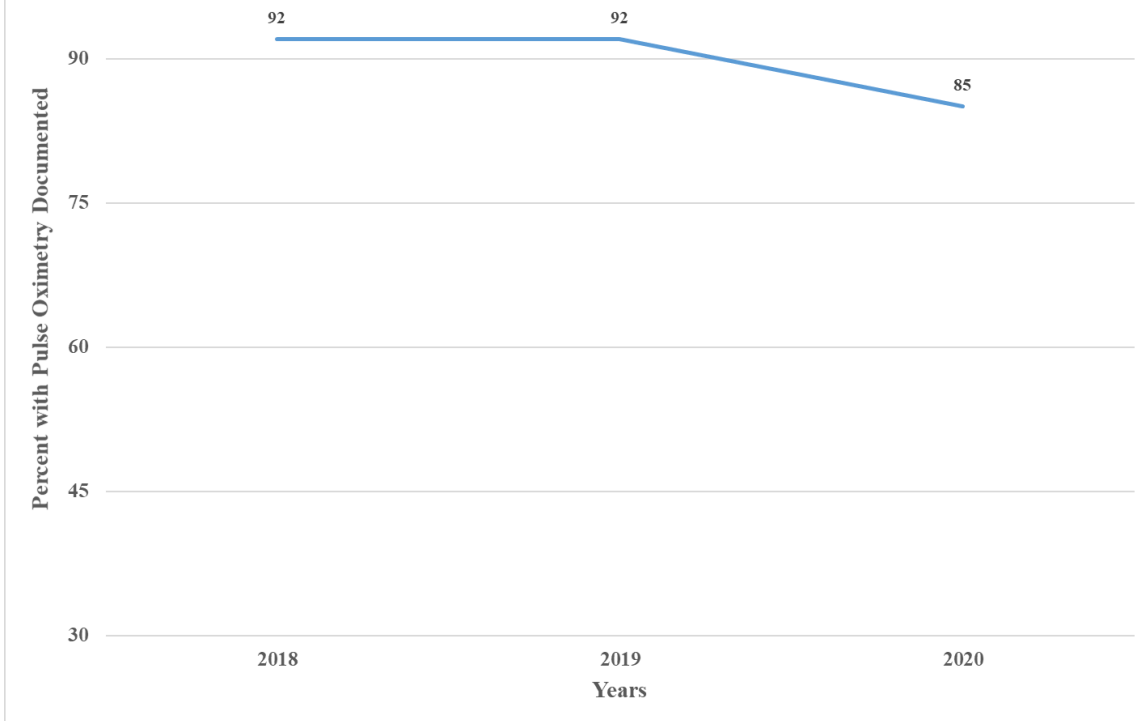
Pulse Ox Documented with Opioid Overdose

Blood Glucose Level Documented with Opioid Overdose

47%

53%

Yes
No

Blood Glucose Level Documented with Opioid Overdose

Line chart showing Percent with BGL with Opioid Overdose (y-axis) versus Years (x-axis):
- 2018: 50
- 2019: 54
- 2020: 53

Naloxone Administered with Opioid Overdose

Pie chart:
- Yes: 60%
- No: 40%

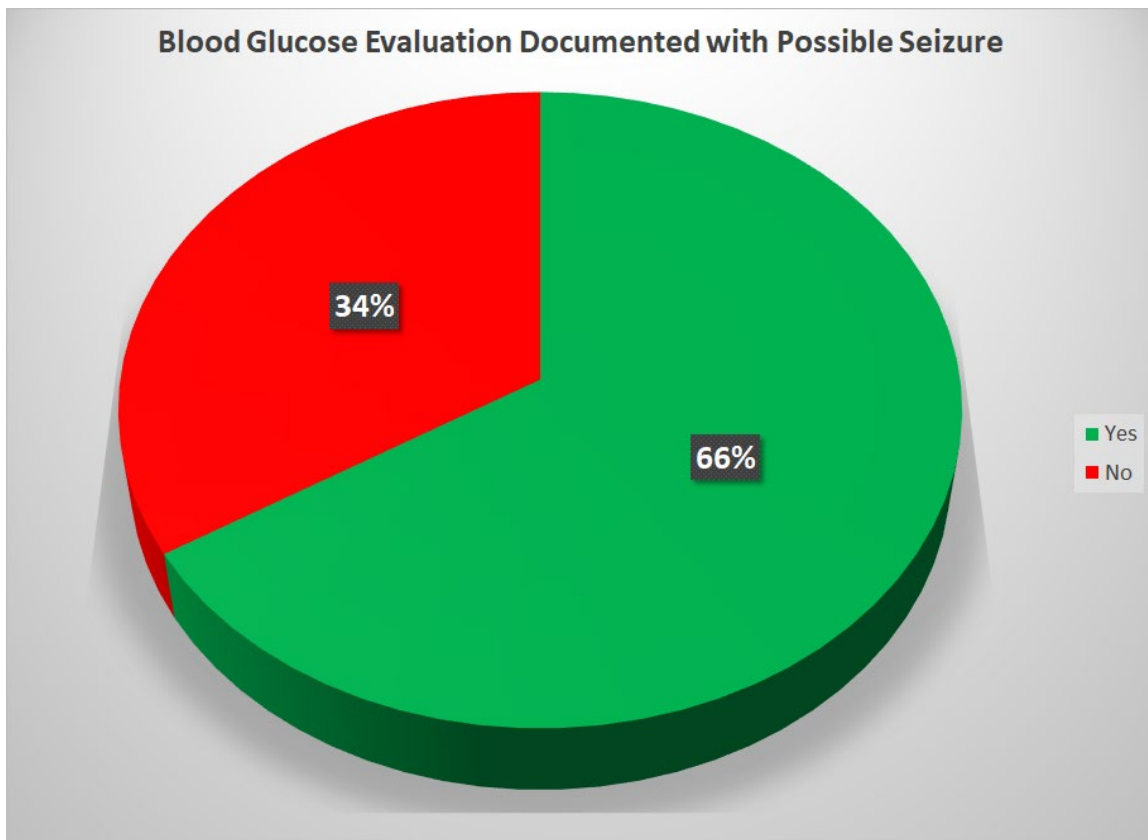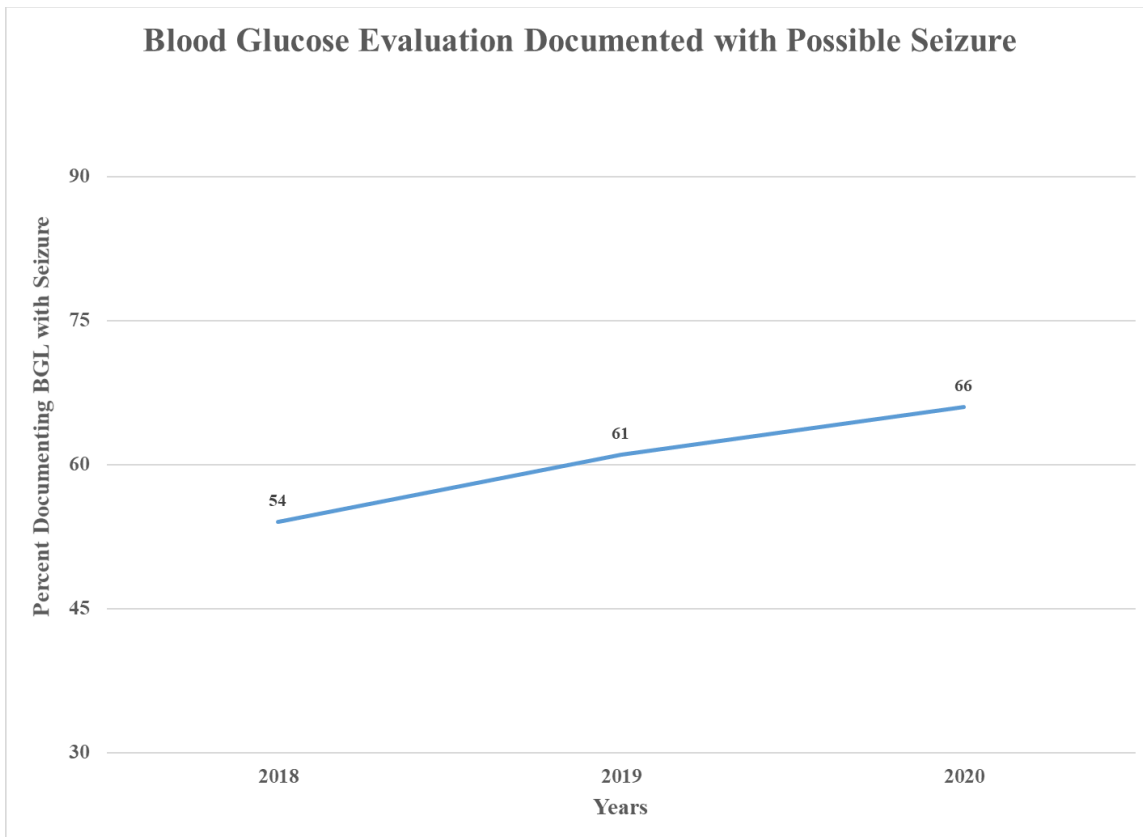## Naloxone Administered with Opioid Overdose
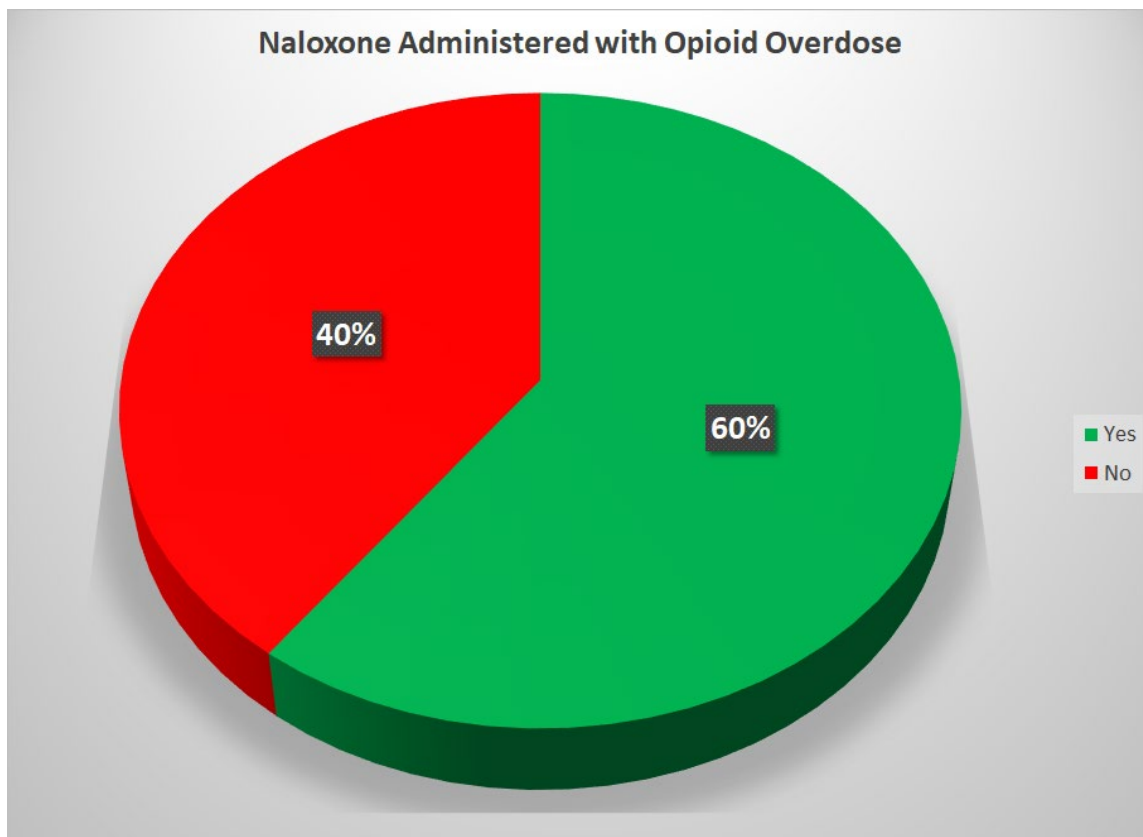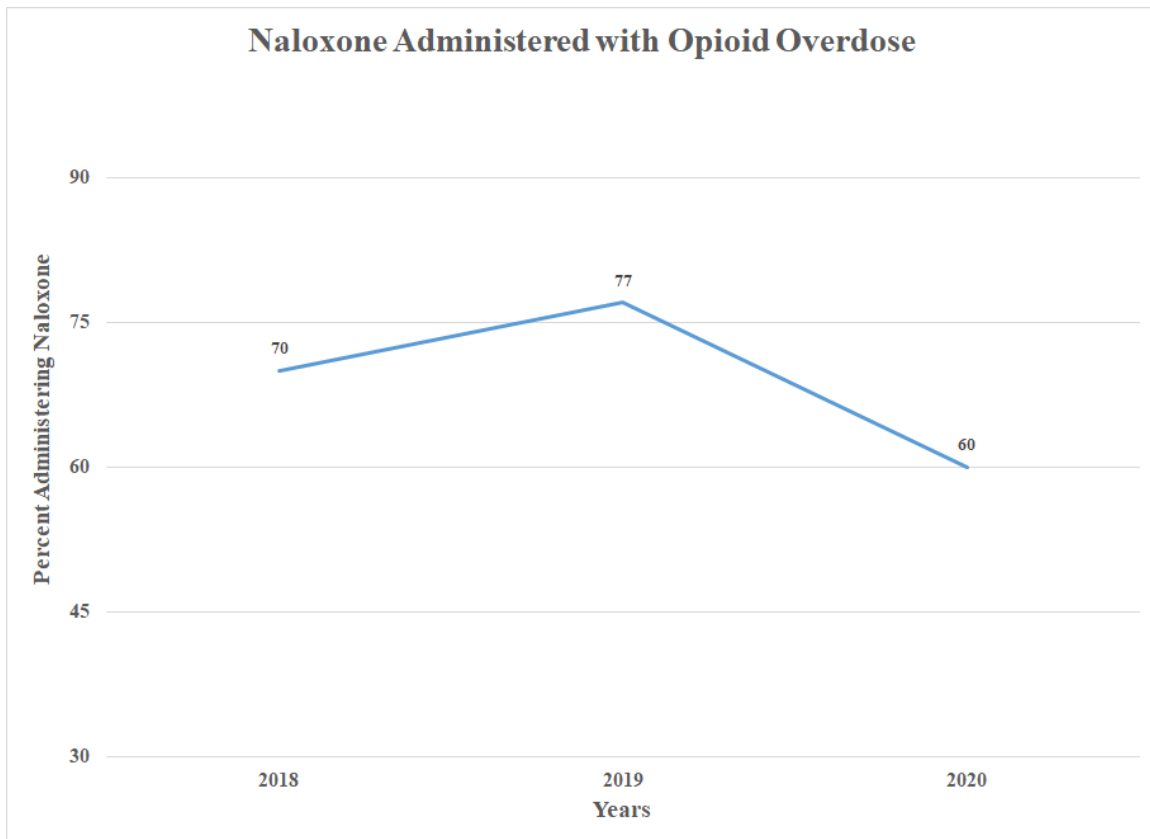
DISCUSSION: The mainstays of diagnostic evaluation for any patient with altered mental status, including those suspected of experiencing an opioid overdose, should include both pulse oximetry and blood glucose monitoring. While the administration of naloxone isn't always indicated or warranted, an accurate blood glucose measurement and a check for hypoxia with pulse oximetry should be performed as part of an EMS professional patient assessment. Documentation of pulse oximetry, while still at an acceptable level for calendar year 2020, fell for the first time since reporting began in 2018. Blood glucose measuring decreased by 1% but has remained relatively consistent. Naloxone administration dropped considerably compared to the 2019 reporting year. While the immediate assumption might be that this reflects improper care, this decrease in naloxone administration also may reflect that naloxone is more readily available and being administered in some instances before EMS providers arrive on scene. Even then, those administrations should be recorded as having been given prior to arrival. Another possibility for this significant drop may be a change in EMS practice. New data and new practice shows assisting respiratory efforts of overdose patients with a bag-valve-mask (BVM) for two minutes prior to medication administration significantly reduces the amount of naloxone needed and administered. Additional analysis will be needed to further examine the drop in naloxone administration observed in this year's data.

CORRECTIVE ACTION: Properly report all relevant data elements for each incident. Measure and record an SpO2 and blood glucose level on all patients experiencing altered mental status, including those with suspected opioid overdose.

BLOOD GLUCOSE EVALUATION IN SEIZURE PATIENTS

Both hyperglycemia and hypoglycemia are known to cause seizures. Likewise, the majority of patients experiencing seizures often present with altered mental status. Therefore, checking a blood glucose before or after the administration of anti-seizure epileptic medication is necessary to help determine the etiology of the seizure. This metric evaluates 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.


Blood Glucose Evaluation Documented with Possible Seizure

- 34%
- 66%
- Yes
- No

Blood Glucose Evaluation Documented with Possible Seizure

Percent Documenting BGL with Seizure (y-axis)

- 2018: 54
- 2019: 61
- 2020: 66

Years (x-axis)

DISCUSSION: Seizure is a frequent reason for EMS system activation. Many EMS protocols or clinical guidelines require blood glucose testing before or after treatment of the seizure. Blood glucose testing (accu-check testing) is quick, easy and a first responder level skill performed by all levels of EMS provider. While it is alarming that this basic evaluation is not performed in 34% of the data examined, the data did reveal improvement to 66% compared to 61% in the previous year. While it is hoped that this continues to be a reporting and documentation problem, it is encouraging to see this metric improve by 12% since first studied in 2018.

CORRECTIVE ACTION: Education and training of the importance of blood glucose testing should be a part of all EMS provider organizations. Although this is a basic skill and easy to perform, the data indicates reinforcement of this assessment tool needs to be undertaken by EMS provider agency medical directors and EMS educators. Blood glucose testing should be performed 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 the number of injured patients originating from a 911 request that had a properly recorded pain scale value. 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.
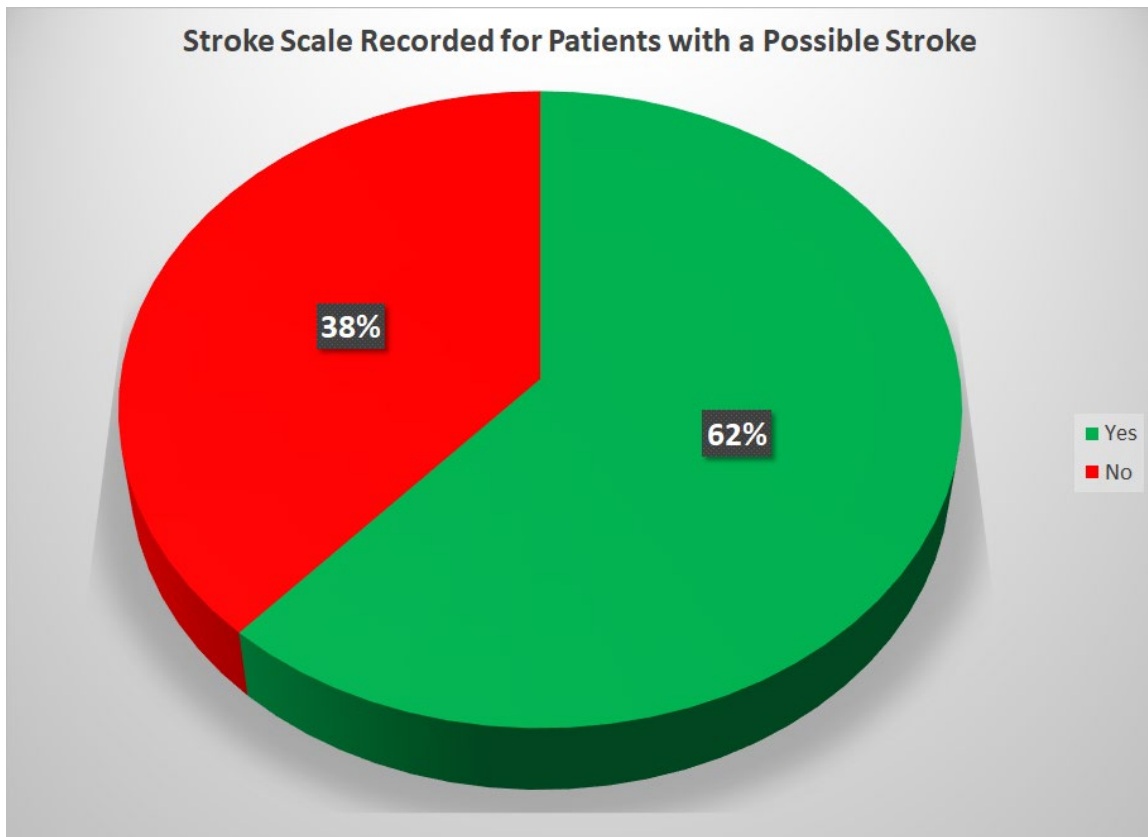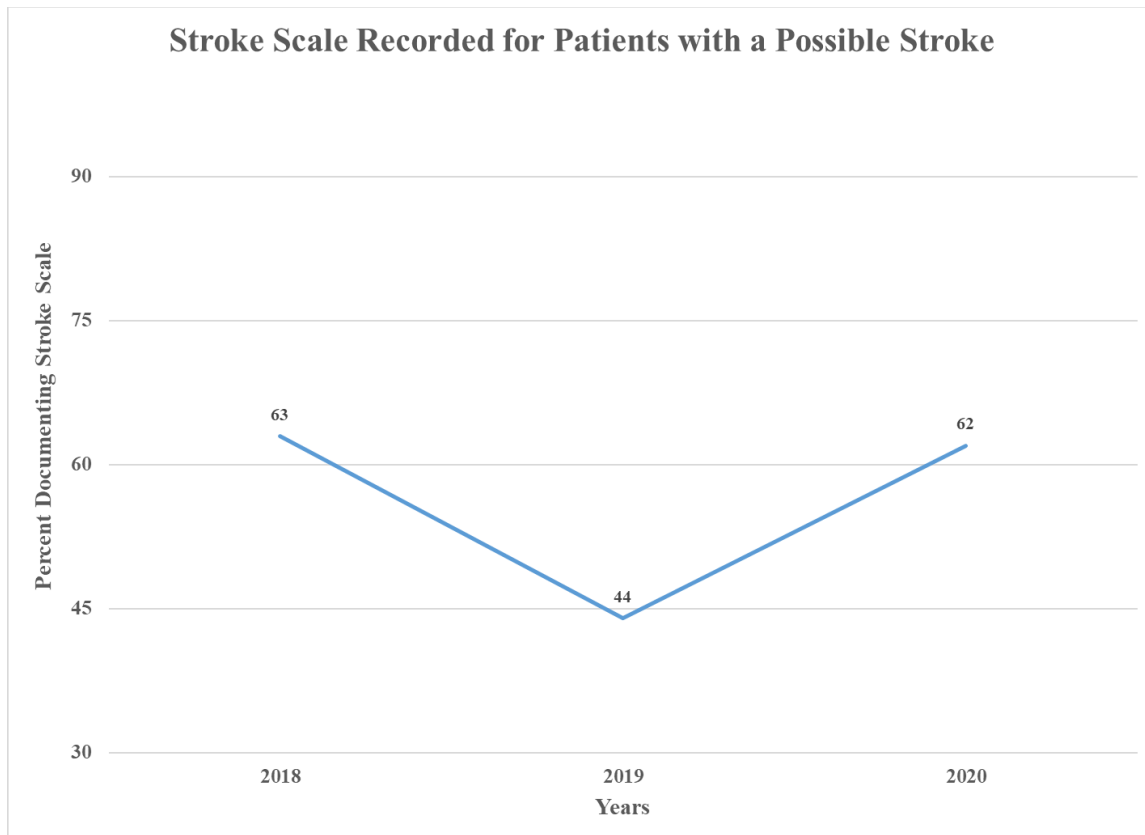
Pain Assessment Documented with Injury

33%

67%

- Yes
- No

Pain Assessment Documented with Injury
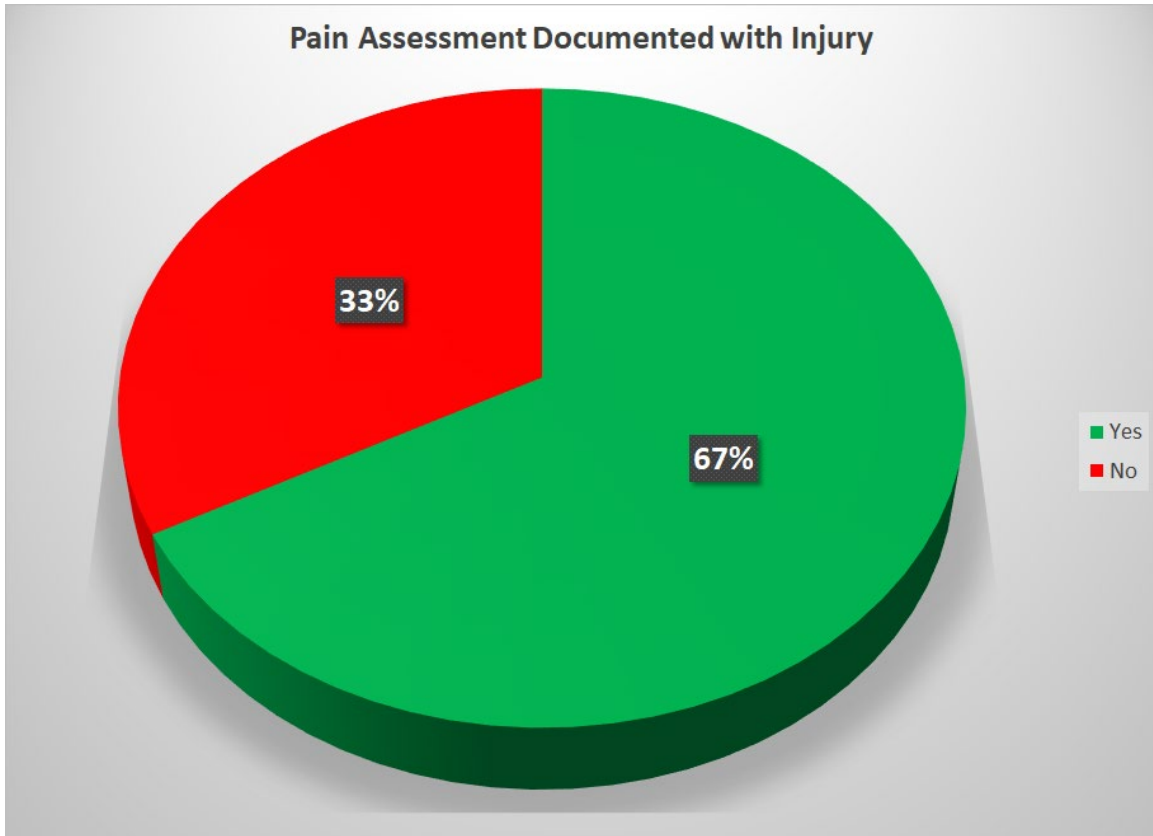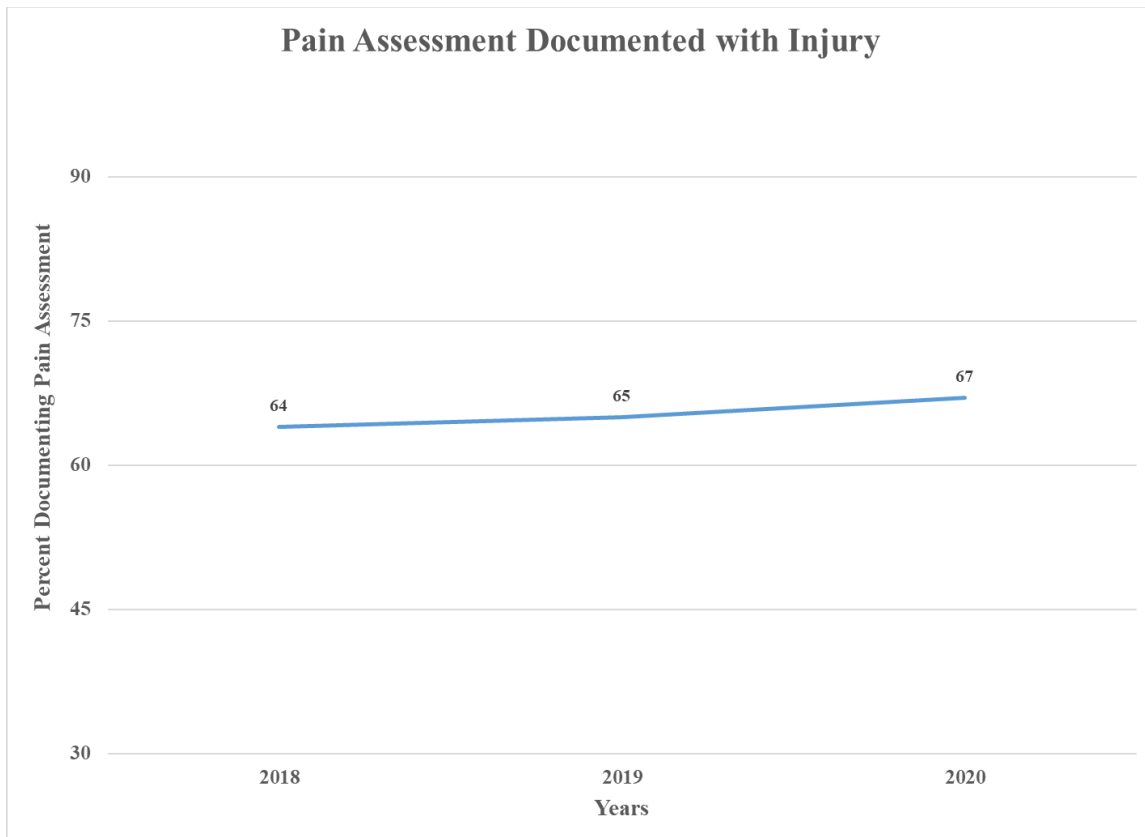
DISCUSSION: Pain is one of the most common reason patients seek medical attention. EMS providers routinely treat patients with pain and pain medication administration is a consistent protocol or clinical guideline found in nearly all EMS provider agency medical treatment guidelines. Although the recent opiate crisis has drawn more attention and training to the appropriate administration of pain medications, 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 improving compared to previous years, although there is still a large margin for improvement.

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 the various modalities of pain treatment at their disposal. Even the recording of a pain scale may prompt the provider to consider clarifying or justifying the patient's rating in the narrative which would enhance medical review of whether pain medications were appropriate or not. Pain scales that objectively measure a patient's pain should be incorporated into all EMS provider treatment protocols.

STROKE ASSESSMENT

Stroke is a major cause of death and disability and a common clinical impression made by EMS providers. Stroke scales are standardized assessment tools used to identify stroke and when performed, documented and reported by EMS providers, can make a significant impact on patient outcomes. In 2018, legislation known as the "Stroke Rule" was enacted by the Indiana EMS Commission requiring EMS provider agencies to have protocols and treatment guidelines in place focusing on 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 and positive records of an outcome of a stroke assessment being performed.
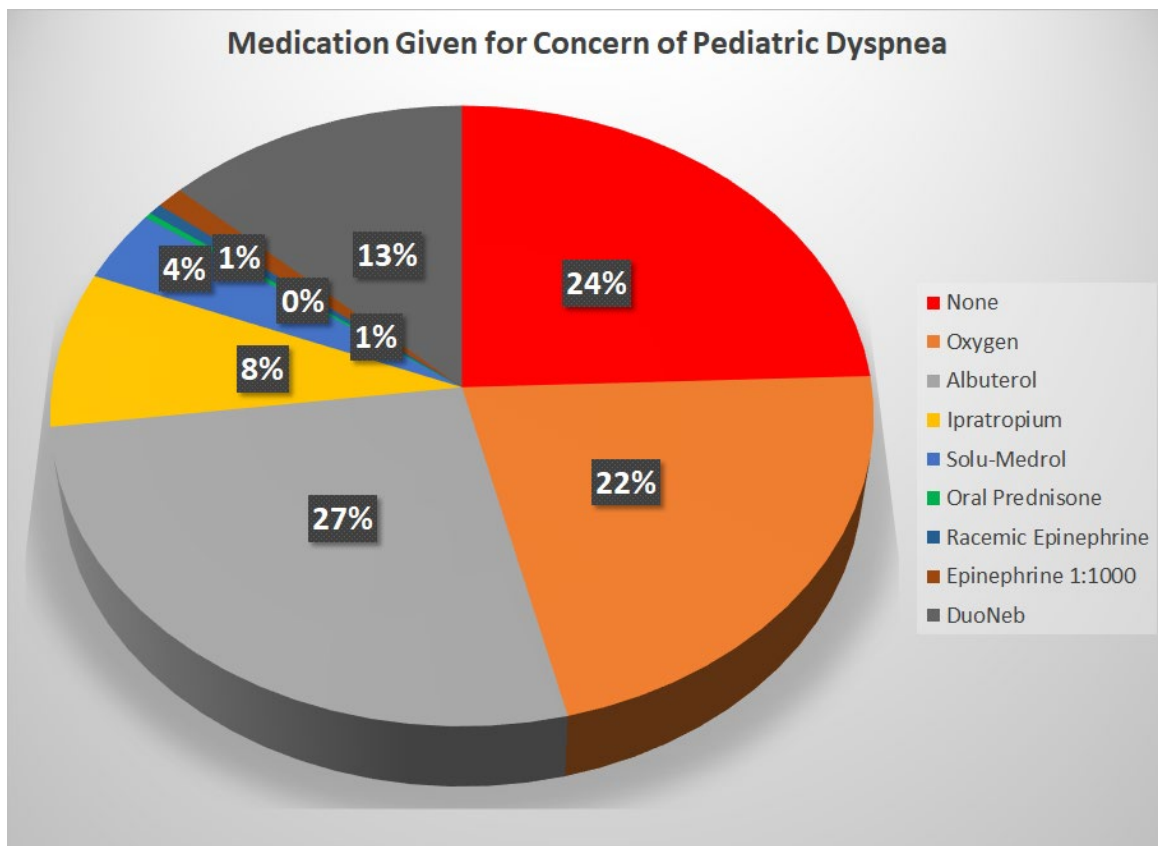

Stroke Scale Recorded for Patients with a Possible Stroke

38%

62%

■ Yes
■ No

Stroke Scale Recorded for Patients with a Possible Stroke

DISCUSSION: 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, these 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. With the widely known, statistically proven benefit of performing, documenting and reporting a stroke scale in a patient suspected of having a stroke, it is surprising that 38% of patients with a primary provider impression of stroke did not document this critical assessment. There was a substantial increase from 2019, however current reporting still is well below an acceptable level.

CORRECTIVE ACTION: EMS provider agencies and their medical directors must ensure prehospital treatment protocols have a stroke scale available and demand that providers perform and correctly document this assessment tool. Additionally, in Indiana, the legislature passed IC 16-31-2-9.5 that 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. As noted previously, the EMS Commission did pass the required legislation and it imposes the stroke assessment and treatment guidelines for EMS providers. Model stroke EMS protocols are available from IDHS upon request and should be utilized if not already in place at the local level. Within the past year, stroke protocols and stroke documentation has been added to the IDHS EMS provider agency audits, with the demonstration of the improvement that followed, and hopeful continuance of that improvement in the future.

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 neglected in medical management. It is estimated that asthma affects nearly 10% of all children. The treatment of acute asthma exacerbations consumes a significant portion of 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. In addition to asthma, many other pediatric respiratory illnesses present with acute bronchospasm and would require EMS provider recognition and treatment.

This metric attempts to describe the administration of various medications in pediatric patients with a primary or secondary impression of asthma with exacerbation or acute bronchospasm originating from a 911 request. This metric describes all properly documented, relevant medications that the patients received.

Medication Given for Concern of Pediatric Dyspnea

Legend:
- None (24%)
- Oxygen (22%)
- Albuterol (27%)
- Ipratropium (8%)
- Solu-Medrol (4%)
- Oral Prednisone (1%)
- Racemic Epinephrine (0%)
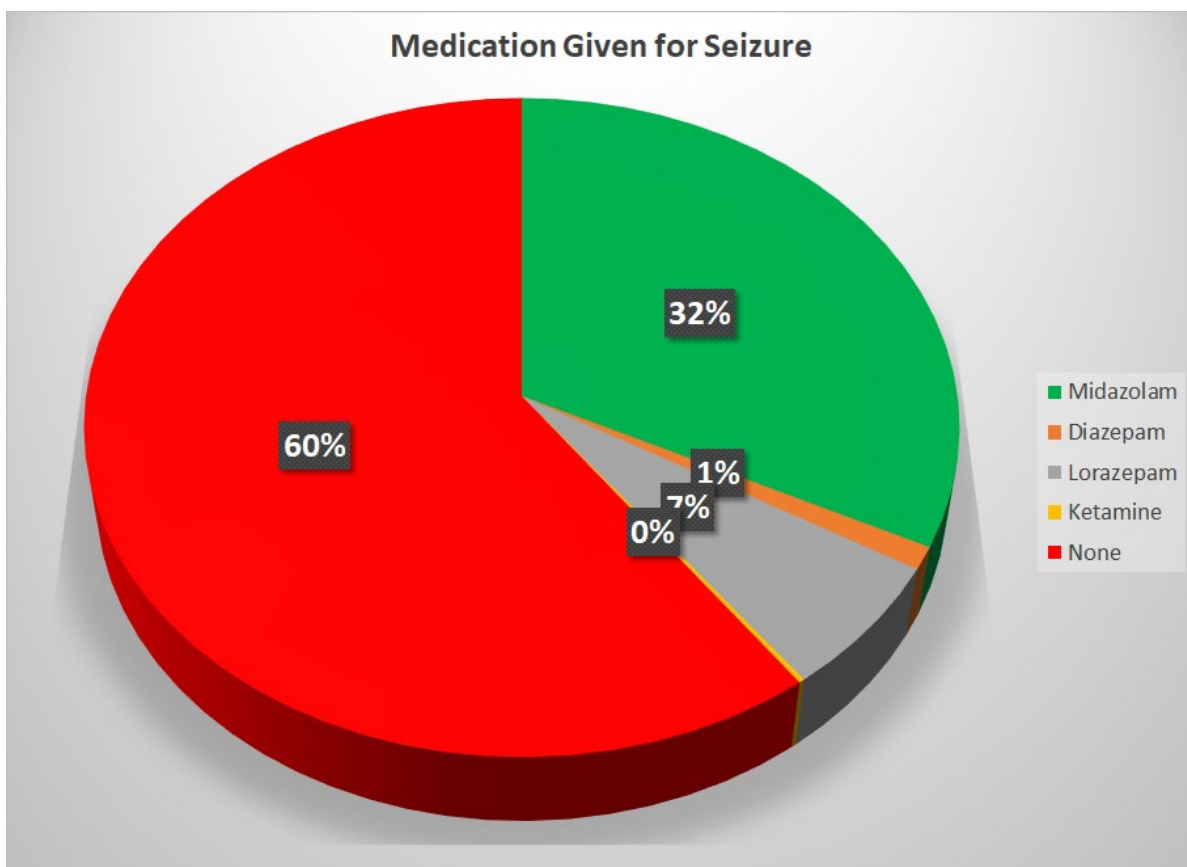- Epinephrine 1:1000 (1%)
- DuoNeb (13%)

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 easiest 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 situations, the "prior to arrival" field should be used to indicate when the medication was given to the patient. In 2018, EMS providers documented that pediatric asthma was treated only 36% of the time. The documentation since that point has improved to treating asthma approximately 75% of the time in 2020, a drastic improvement most likely due to documentation and therefore clinical treatment by the hospital providers and anyone treating the patient after the EMS system. The most revealing factor in this assessment is that nearly a quarter of the patients received no medication which is highly improbable given the severity of the complaint so a lack of proper documentation seems likely.

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 STATUS SEIZURES

Seizures are a common presentation in the prehospital setting and status epilepticus represents an emergency neurologic condition often treated by emergency responders. Status epilepticus is defined in the neurologic literature 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 commonly are administered as first-line therapy treatment for patients who are actively seizing. This 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. Any mention of a specified drug in a narrative counts toward the improper documentation category. Note the only medications being considered are those listed in the chart.
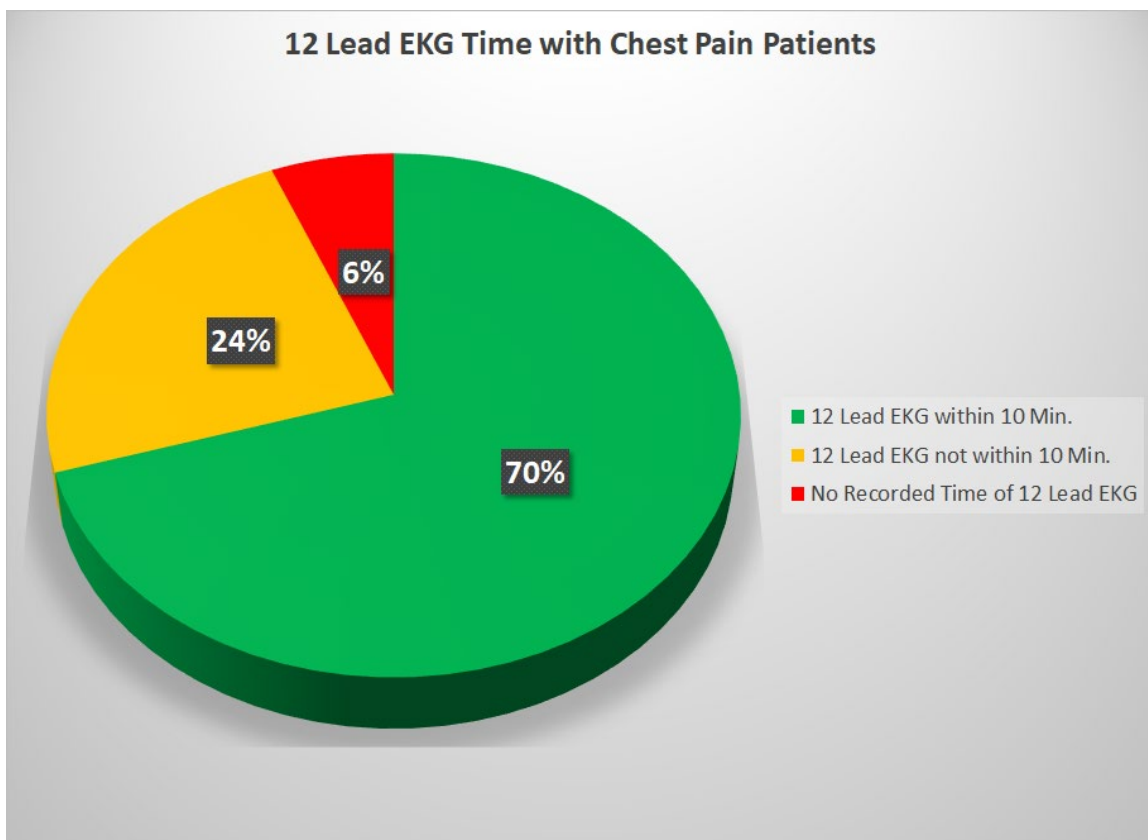

Medication Given for Seizure

- 32% Midazolam
- 1% Diazepam
- 7% Lorazepam
- 0% Ketamine
- 60% None

Legend:
- Midazolam
- Diazepam
- Lorazepam
- Ketamine
- None

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 mis-categorizing seizures that don't 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
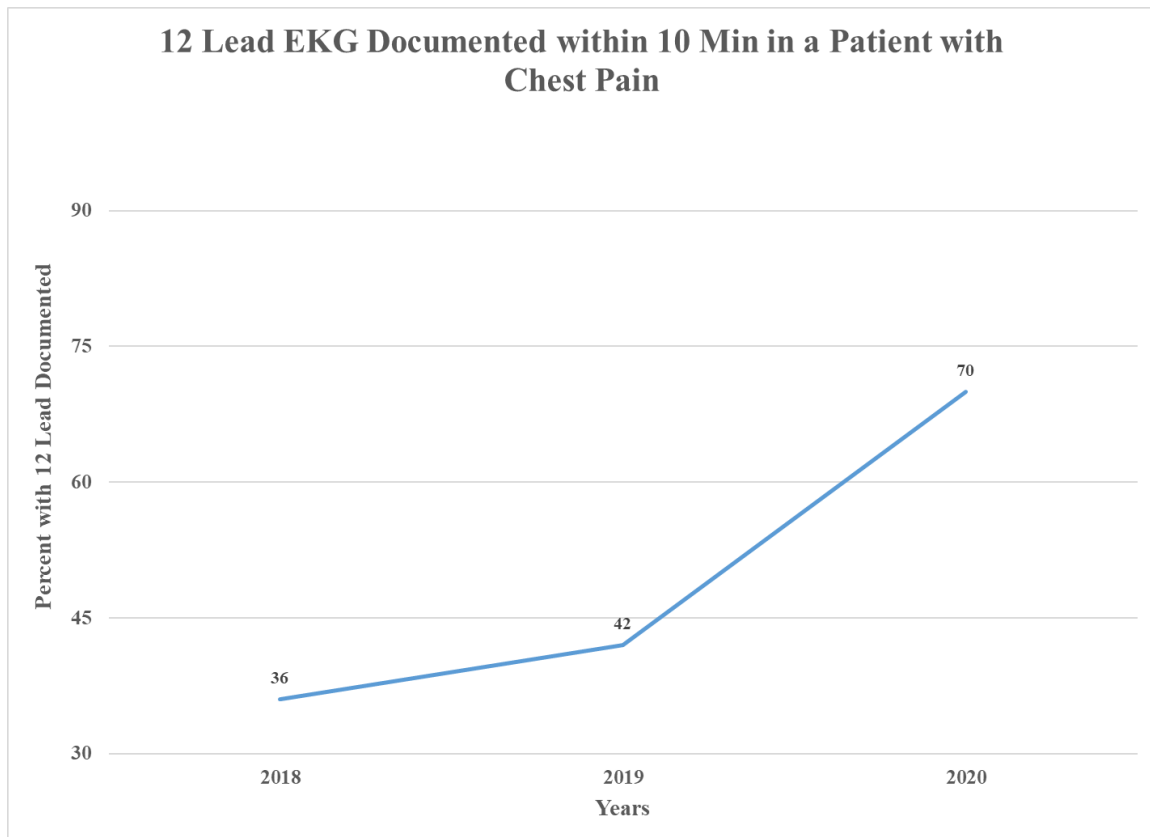
improper medications were recorded, this metric deserves ongoing education and training to ensure that appropriate impressions are provided and that if a patient is actively seizing after EMS arrival, that proper care and medication be administered.

CORRECTIVE ACTION: Ensure all medications are being properly recorded. Ensure ALS 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 that 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 prehospital chest pain program. 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 EKG's 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 EKG's that are 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 no 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.
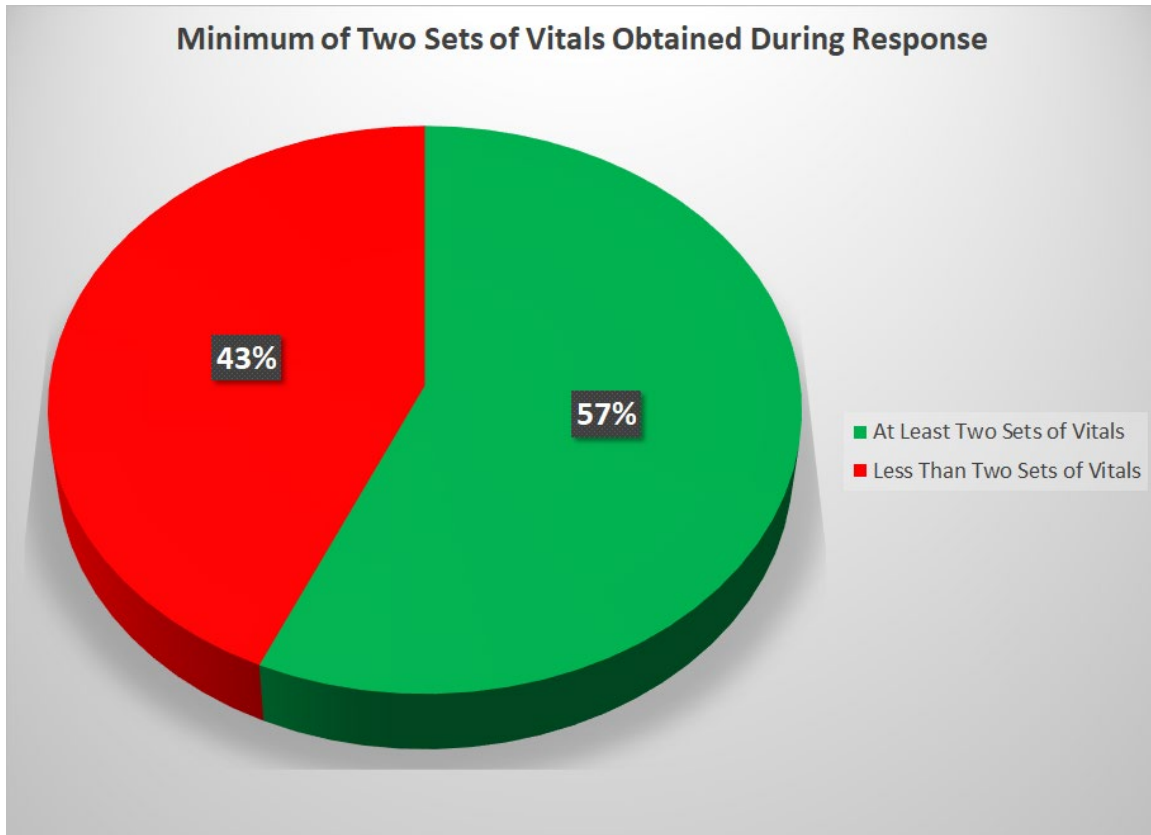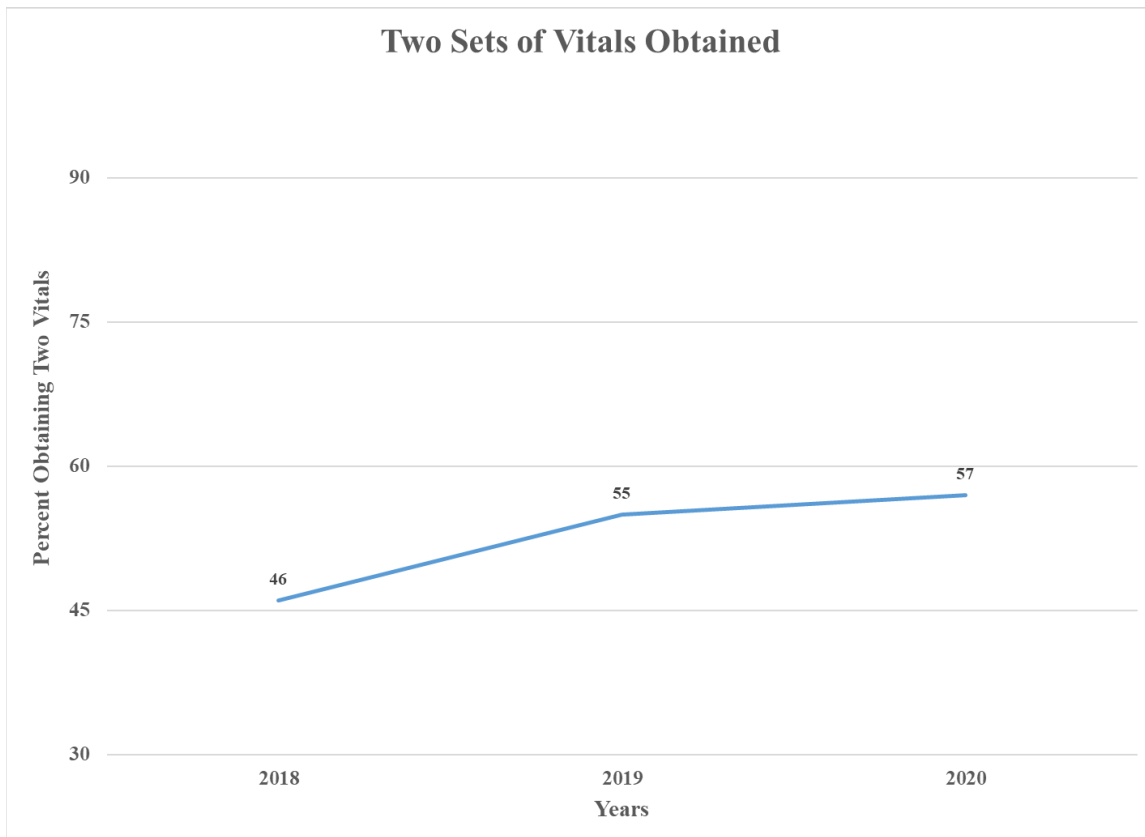

12 Lead EKG Time with Chest Pain Patients

- 12 Lead EKG within 10 Min.
- 12 Lead EKG not within 10 Min.
- No Recorded Time of 12 Lead EKG

12 Lead EKG Documented within 10 Min in a Patient with Chest Pain

DISCUSSION: With regards to documentation, 12-lead EKG's are a good example of a standard procedure. Proper documentation of procedures of this nature are 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 proper recording of 12-Lead EKG's, 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 a 28% increase in the number of 12-lead EKGs being performed within 10 minutes of arrival to a patient. EMS providers and their agencies should be commended to this substantial increase in performance. Continued efforts will be necessary to maintain and even improve this important assessment tool.

CORRECTIVE ACTION: Ensure that all procedures are recorded in the procedure performed data field. Continue to educate EMS providers to the importance of performing a 12-lead EKG within 10 minutes of patient contact when practical. While such a common procedure can be easily mentioned in a narrative, only mentioning the procedure in the narrative is improper recording.

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 essential to the successful care and treatment by 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.

Minimum of Two Sets of Vitals Obtained During Response

- 43%
- 57%
- ■ At Least Two Sets of Vitals
- ■ Less Than Two Sets of Vitals

Two Sets of Vitals Obtained

DISCUSSION: This general practice guideline evaluates 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 outside of any additional 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 challenges to proper EMS documentation. Recording vitals is important for patient care and also for the post-incident assessment of patient care by a doctor or in any quality assurance system. 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 55% to 57% since the last publication of this report.

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

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 national required data elements would lead to improved quality of data. This list can be downloaded using the link provided below this text. Agency-specific ePCR vendors should also ensure that state-required data elements are reported before an individual provider can close a specific patient encounter.

HELPFUL LINKS

State Version of Image Trend Elite: https://indianaems.isdh.in.gov/Elite/Organizationindiana/

National Emergency Medical Services Information System: 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