

eBOOK

# 4

*Steps to Building*  
**a Statewide  
Data Dictionary**

The State of Colorado's Experience

IMAGETREND®



## Introduction

There's no question that data is essential to trauma programs and maintaining a dynamic registry system. However, understanding the importance of that data to transform it into useful information and knowledge is key to driving robust initiatives and keeping stakeholders informed.

The question is, how do we foster a better understanding of the data that is going in and out of our trauma registries? For the State of Colorado, the answer was building a statewide data dictionary to standardize data sets and to share key elements across the State and nationally.

First things first – **what is a data dictionary?** A data dictionary is a collection of names, definitions, and attributes about data elements that are being used or captured in a database, information system, or part of a research project.



For insights on the State of Colorado's experience, Kiva Thompson, Trauma System Nurse Consultant with the Colorado Department of Public Health and Environment, outlined the four (4) 'how to' steps that the State took to building their statewide data dictionary. In this eBook, Thompson, who is a Registered Nurse by trade, shares the importance of collecting elements and defining terms, aligning with local and national standards, utilizing a team approach and publishing the final product.



**"I like to keep our stakeholders informed of the why behind what we're doing," Thompson said. "As a State that does a lot of internal research, building a statewide data dictionary has allowed us to do so and has really helped us drive the information needed to provide the best possible care to the citizens of Colorado."**

## Collecting & Defining Terms

The data requirements for each state or program vary, but for the State of Colorado, many of the data elements that they collect are required by law. A Colorado statute states that trauma information shall be collected on general categories such as discharges, inpatients, transfers, readmissions and deaths. Within these categories are specific data elements that are required including demographic information, injury information, prehospital information, readmission information and more.



**Demographic**



**Prehospital**



**Readmission**

**“It is really important to know what the data requirements are in your state, agency or facility for collecting the appropriate trauma information and understanding what information is important to you from a data element standpoint,” said Thompson. “Some of the information that we collect can be arbitrary, so knowing the why behind what we’re collecting is important to our stakeholders and users.”**

Once the data elements that are required or important to your program are established, Thompson mentioned it’s key to ensure that these data elements consist of the same, if not similar, aspects such as definitions, acceptable values, acceptable nulls and rules, so that everyone using the system understands what they’re collecting, why and what an acceptable entry looks like.

**“With so many data elements and various aspects, it’s essential to have a platform that supports system configuration and organizational growth,” said Thompson. “System validation rules have allowed our users and stakeholders to see up front what is required for an appropriate data submission.”**

# STEP

## Achieving Organizational Alignment



### What does alignment mean in trauma reporting?

**“Alignment is looking at similarities in other reporting structures,”** *Thompson stated.* **“As users of trauma data, whether it’s entering or analyzing, we know there’s multiple entities that collect the information that is of interest to our state, program or facility.”**

In the State of Colorado, some of the data elements that are being collected at the state level are also being collected at the regional and local levels for benchmarking. Thompson said identifying these similarities allows programs to see where they connect or overlap with others to utilize information that has already been documented to move forward in developing a robust data dictionary.

**“If you find a data element is the same across three different agencies, why not use the same aspects such as definition, values, etc. to ensure we’re not reinventing the processes?”** *Thompson questioned.* **“Organizational alignment eliminates the discrepancies or challenges of using different variables, which leads to better overall data quality.”**



### Quick Note:

Alignment doesn’t mean titles and definitions need to match perfectly. When achieving organizational alignment, it’s important to satisfy both entities in this process through fluid association and to make adjustments when needed.

# STEP 3

## Build Your Team of Experts



When building a statewide data dictionary, utilize the resources that are already available within your program. Relying on one individual to create and manage a data dictionary can lead to information silos. Instead, build your team of experts.

**“I utilized staff from both our trauma and data sections and even relied on the input from our trauma facilities,”** *Thompson commented.* **“These different avenues of expertise are essential to delivering the various aspects that make a trauma registry dynamic.”**

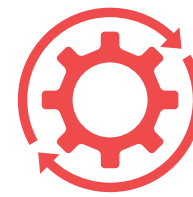
Including clinical input helps apply the patient-centered focus that ensures you’re collecting impactful data. Statistical input delivers the technical focus and helps with data accuracy and quality. Lastly, incorporating the operational aspect with input from the people who use the system on a daily basis establishes workflows for an efficient and meaningful process.



Clinical



Statistical



Operational

The team effort doesn’t end after a data dictionary has been built out. Utilize the teams’ expertise to review the data elements and processes annually for updates, feedback and modifications.

**“Every year our team goes through a review process to assess our needs and system alignment,”** *said Thompson.* **“We look at what data elements are still valuable to our data population and take our stakeholders’ feedback into consideration for modifications.”**

# 4 STEP



## Put Your Work into Action

**The final step:** publishing your hard work. A simple step in theory, but at the state level, getting the correct information out to all the connecting trauma facilities could prove as a challenge.

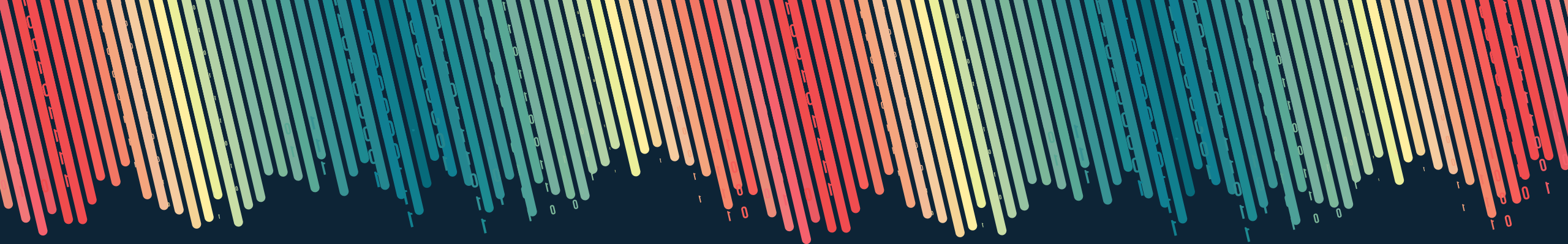


The key to ensuring a successful publication is understanding how the registry staff accesses information. Thompson provided three aspects she believes helped the State of Colorado successfully publish their statewide data dictionary via a public facing document:

1. Conforming to department standards
  - Font
  - Margins
  - Spacing
  - Logos
  - Headings
2. Utilizing a familiar document setup or flow
  - Consider audience
  - Non-technical
  - Organized by form order
3. Enabling a user friendly experience
  - Table of contents
  - Hyperlinks
  - Change log
  - Provide data section TR number

**The State of Colorado's data dictionary is a public document and can be accessed at [coems.info](http://coems.info).**

**"Incorporating stakeholder input and a collaborative approach is beneficial when creating this document," Thompson said. "Accommodating all users of the document is very important to uniform buy-in."**



## Conclusion

Building a statewide data dictionary is essential to a robust trauma registry system and ensuring the citizens that you serve are getting the care that they need. Identifying and defining the elements that are important to your program; working to align as many data elements as possible with other data sources; gathering a team to work together, utilizing the strengths and expertise of each member; and making your hard work and collaboration accessible to all who need it are key steps to creating a statewide data dictionary.



**Identify and Define**



**Align**



**Gather Team**



**Make Accessible**

# ABOUT IMAGETREND PATIENT REGISTRY™

Patient Registry is a multi-discipline registry solution that collects and analyzes information for trauma, stroke and cardiac, all with a single system. Evaluate the incident and the health system's response with detail on the severity, causes and outcomes. It allows you to gather information more efficiently to better analyze treatment methods to reduce morbidity and mortality. Beyond included modules and advanced reporting, integrations with EMS systems and the hospital EMR help your department get to the next level. Its scalable architecture and relational database makes it perfect for stand-alone hospitals, health care networks, countywide and statewide systems.

## ABOUT US

ImageTrend, Inc. is dedicated to connecting life's most important data in the healthcare and emergency response community. ImageTrend delivers software solutions, data analytics and services for EMS, Fire, hospitals, community paramedicine (CP), critical care and preparedness to enable fully integrated patient-centric healthcare and public safety. ImageTrend's commitment to innovation, our clients, and providing world-class implementation and support is unsurpassed. Based in Lakeville, Minnesota, ImageTrend combines business analysis, creative design and data-driven architecture to offer scalable solutions and strategies for today and the future.

[www.ImageTrend.com](http://www.ImageTrend.com)  
[ask@imagnetrend.com](mailto:ask@imagnetrend.com) | (888) 469-7789



*The State of Colorado and CDPHE contracted with ImageTrend for this work in Colorado, and such work does not constitute an endorsement of ImageTrend or its services.*