# Oregon EMS and Trauma Data Strategic Plan

*2021–2023*


June 28, 2021

# Contents

# Introduction

Within the Oregon Health Authority, the Emergency Medical Services and Trauma Systems Section oversees Oregon's emergency medical services (EMS) data. EMS data systems include EMS agency and personnel licensing, EMS agency prehospital patient care reporting, and hospital trauma registry reporting. Other related data systems that may be integrated in the future include the following: hospital emergency department data, hospital discharge data, syndromic surveillance data, specialty registry data (cardiac arrest, myocardial infarction, stroke, etc.), emergency medical dispatch data, rehabilitation data, and health information exchanges.

Oregon's EMS data program has made significant achievements in the past six years:

- ✓ The adoption of Senate Bill 52 (2017), which mandates EMS reporting by licensed EMS agencies
- ✓ Implementation of a new EMS agency and personnel licensing system
- ✓ Improved communication with licensees, associations, and other stakeholders
- ✓ Implementation of a NEMSIS 3-compliant prehospital patient care reporting system
- ✓ Substantial funding through the Centers for Medicare & Medicaid Services (CMS) Health Information Technology for Economic and Clinical Health (HITECH) Act to establish and strengthen EMS data system interoperability
- ✓ Collection of most prehospital patient care reports within six hours of the incident, well under the 24-hour administrative rule requirement
- ✓ Comprehensive data quality assessments on the Oregon EMS Information System and Oregon Trauma Registry
- ✓ Development and implementation of data system performance measures and EMS operational and clinical performance measures
- ✓ Improved automation of program staff workflows
- ✓ Established a real-time copy of prehospital EMS data on the state network to support enhanced data reporting and analysis

There's always more work to do. In order to focus our efforts, OHA pursued a strategic planning process in 2016. The strategic plan laid out three strategic focus areas for Oregon's EMS data for three years (2017–2019). Within each area, goals and objectives were established, along with how progress will be measured.

Updates to the strategic plan, including this one, have removed the following goals and objectives that have been fully accomplished:

- Implement a new EMS agency and EMS personnel licensing system
- Upgrade the state trauma registry
- Establish prehospital data system performance measures
- Create and test methods for linking datasets using crash, EMS, hospital, trauma, and vital records (death) data
- Implement real-time, secure health information exchange between the prehospital data system and the trauma registry data system

- Include EMS data systems in the public health modernization plan
- Create stakeholder advisory workgroups for prehospital EMS and trauma registry data

This 2021 update to the strategic plan includes the following changes to reflect progress and respond to challenges and opportunities for the next three years (2021–2023):

- Adds new goals, objectives, measures, and milestones to implement tools that streamline work processes and to improve support for evaluating equity in health and healthcare
- Removes 2020 milestones, modifies some 2021–2022 milestones, and adds 2023 milestones for uncompleted work

OHA will track the strategic plan and continue to adjust along the way.

## OHA Vision

A healthy Oregon

## OHA Mission

Helping people and communities achieve optimum physical, mental and social well-being through partnerships, prevention and access to quality, affordable health care.

## OHA Values

Service Excellence

Partnership

Innovation

Leadership

Integrity

Health Equity

The Emergency Medical Services and Trauma Systems Program develops and regulates systems for quality emergency medical care in Oregon. This ensures that EMS Providers are fully trained, that emergency medical vehicles are properly equipped, and emergency medical systems are functioning efficiently and effectively.

# Strengths, Weaknesses, Opportunities, and Threats

## Strengths

- Increased communication and trust with stakeholders
- Strong public health mindset
- Dedicated interdisciplinary staff with a unified vision
- Legislated mandatory prehospital data reporting

## Weaknesses

- Lack of funding and position authority for critical administrative specialist and fiscal analyst positions to support EMS and Trauma data system operations
- Lack of funding and position authority for research analyst or epidemiologist positions to expand analytical capacity to support public health modernization
- Limited integration of EMS and trauma data systems into other public health data systems

## Opportunities

- Recent developments in Mobile Integrated Healthcare–Community Paramedicine (MIH-CP) and the CMS ET3 pilot reimbursement models to potentially broaden funding mechanisms for EMS agencies
- Stakeholders want education about EMS data
- Opportunity to form and nurture partnerships
- Grant funding availability
- Increased interest among stakeholders in EMS/hospital data integration

## Threats

- Lack of permanent funding for EMS data systems
- Lack of quality assurance and feedback mechanisms in EMS agencies and data systems

# Gap Analysis

## State Traffic Records Assessment

In 2015, the National Highway Traffic Safety Administration (NHTSA) assessed Oregon's traffic records systems, including the EMS data systems.[1] The maturity of the EMS data systems was comparable to that of the state's crash, driver, and roadway data systems.

**Figure 1. Grading of Oregon's traffic records systems, including EMS data systems (ideal: 100%)**


The greatest opportunity for improvement in Oregon's EMS data systems, as identified by the traffic records assessment, is quality control: "a formal, comprehensive quality management process that includes quality control metrics and quality control reports… [to ensure that data systems are] timely, accurate, uniform, complete, integrated, and accessible."[2]

**Figure 2. Grading of key aspects of Oregon's EMS data systems (ideal: 100%)**


[1] National Highway Traffic Safety Administration Technical Assessment Team, *State of Oregon Traffic Records Assessment* (2016), http://www.oregon.gov/ODOT/TS/docs/TRCC/Oregon%20TRA%20Final%20Report.pdf.

[2] National Highway Traffic Safety Administration, *Traffic Records Program Assessment Advisory* (2012), https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/811644, 101.

# Stakeholder Voices

The strategic planning process included 13 hours of interviews in 2016 with 46 individuals throughout the state, from EMS agencies, hospitals, county governments, state government, and others.

Stakeholder voices included the following key themes:

## Give us Data

"I've never dealt with state data. We are not aware of what's available."
*—EMS Agency Administrator*

"It's important to have a user-friendly interface for people to do reports and write their own queries. Access is important."
*—County EMS Administrator*

"Report data in a visible way."
*—University Researcher*

## Integrate

"I've seen untold benefits to patient care from bridging the gap between EMS agencies and hospitals."
*—Hospital Administrator*

## Ensure Data Quality

"I'm surprised I haven't heard from the state saying, 'why haven't you uploaded data?'"
*—EMS Agency Administrator*

## We're Ready for Performance Improvement

"Come up with measures and allow us to benchmark our agency with the rest of the state. Then we can give ourselves goals to attain."
*—EMS Agency Administrator*

## Lead

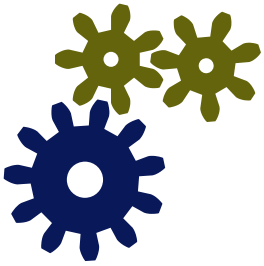
"Why do they need the data? Why are we giving them data?"
*—EMS Agency Administrator*

"The EMS office is stronger and more stable than it has been in a long time."
*—Coordinated Care Organization (CCO) Administrator*

# Strategic Focus Areas

## Leadership

Through policy leadership, OHA will make EMS a public health priority, communicate with public health leadership, establish policy partnerships, and promote advocacy of EMS data. Through operational leadership, OHA will strengthen our organizational structure, solidify staffing, establish operational partnerships, and improve communication with stakeholders.



## Data System Operations

OHA will collect, share, disseminate, link, analyze, and integrate data. OHA will evaluate the performance of our EMS data systems.

## Data Use

OHA will implement state-level EMS system performance improvement, and we will encourage and support regional and local performance improvement. OHA will use data for EMS system development, workforce development, and clinical care. OHA will use EMS data to support public health policy, prevention, and practice.

# Goals, Objectives, Measures, and Milestones

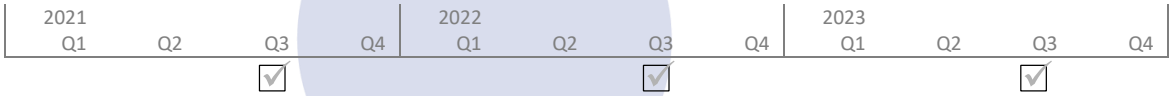
The following sections establish the work to be accomplished with Oregon's EMS data systems in 2021–2023, organized by strategic focus area.

# Leadership

## Goal: Identify and obtain needed resources to implement EMS data systems and ensure that they are sustained and able to grow with health system needs over time

Objective: EMS data leadership will complete an assessment of needed resources to support EMS data systems

Measure: Needs assessment completed and updated annually



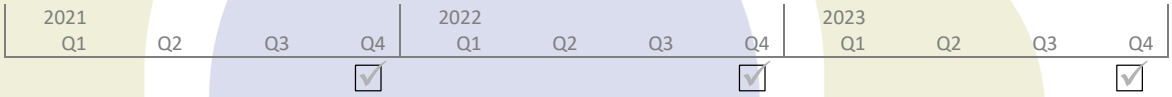

Objective: EMS data leadership will obtain dedicated resource allocation for EMS data

*No measures for 2021–2023.*

## Goal: Create and implement a communications plan for the development and maintenance of the EMS data systems

Objective: EMS data leadership, with the participation of Public Health Division (PHD) center administrators, will create a communications plan

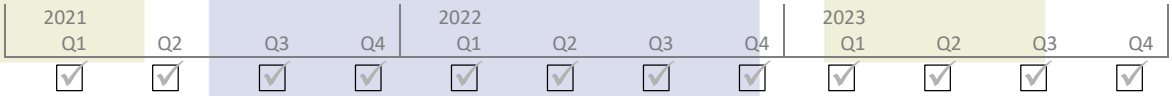
Measure: The communications plan has been updated annually




## Goal: Create stakeholder advisory workgroups for EMS data

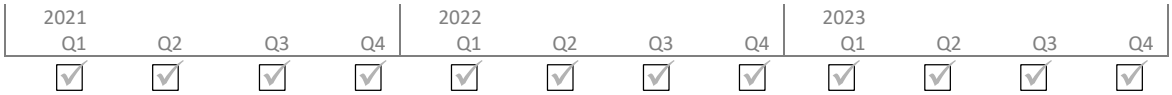
Objective: EMS data leadership will create a stakeholder advisory workgroup for prehospital EMS data

Measure: The EMS data stakeholder advisory group has met quarterly




Objective: EMS data leadership will create a stakeholder advisory workgroup for trauma registry data

Measure: The trauma registry data stakeholder advisory group has met quarterly



Objective: EMS data leadership will create a stakeholder advisory workgroup for community paramedicine data

Measure: The community paramedicine data stakeholder advisory group has met quarterly

| 2021 | | | | 2022 | | | | 2023 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ |

# Data System Operations

## Goal: Collect complete, accurate, and usable data

### Objective: Implement NEMSIS version 3.5

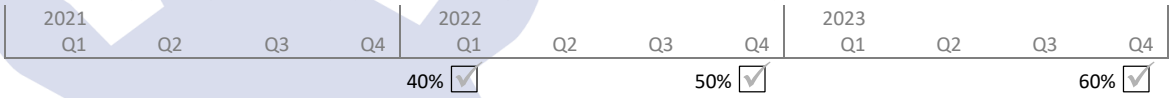
Measure: Staff have developed state resources for NEMSIS version 3.5


### Objective: Collect NEMSIS version 3 prehospital data from EMS agencies

Measure: The percentage of licensed transporting agencies submitting NEMSIS version 3 data in a given month


Measure: The percentage of registered non-transporting 911 scene response agencies voluntarily submitting NEMSIS version 3 data in a given month


Measure: The percentage of reporting agencies submitting NEMSIS version 3.5 data in a given month

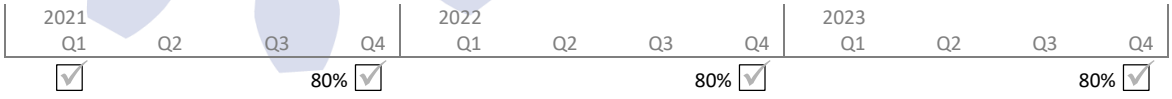



### Objective: Collect timely NEMSIS version 3 prehospital data

Measure: The percentage of patient care reports accepted by the state data system within 12 hours from the time the EMS unit was back in service in a given month

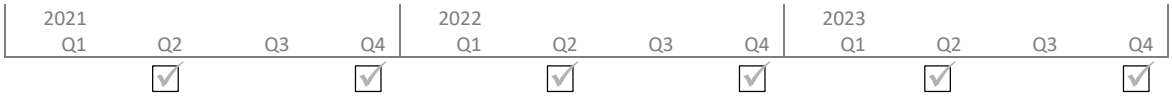

### Objective: Collect timely trauma registry data

Measure: The percentage of trauma registry records accepted by the state data system within 60 days from the time of hospital discharge in a given month

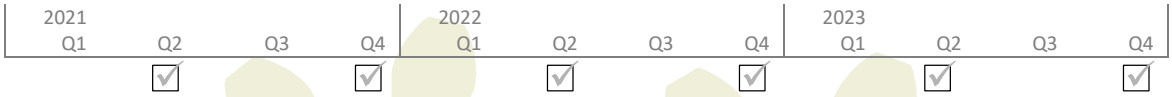


Objective: Update the state prehospital data elements and data quality rules semiannually to meet national and Oregon needs

Measure: Updated state Schematron file published via the NEMSIS Technical Assistance Center




Measure: State staff have notified EMS agency administrators of the updated data quality rules and their impact on reporting




Objective: Update the trauma registry data elements and data quality rules annually to meet national and Oregon needs

Measure: The trauma registry has been updated to implement annual updates to the National Trauma Data Standard


Objective: Improve the ability of EMS data systems to track equity in health and healthcare

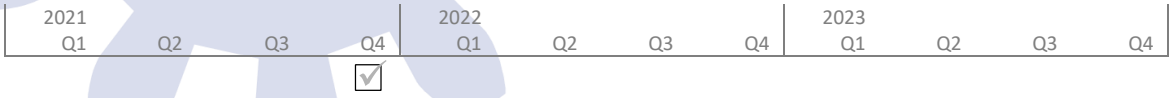
Measure: Records in the prehospital data system are linked to Race, Ethnicity, Language, and Disability (REALD) data


Measure: Records in the trauma registry are linked to Race, Ethnicity, Language, and Disability (REALD) data

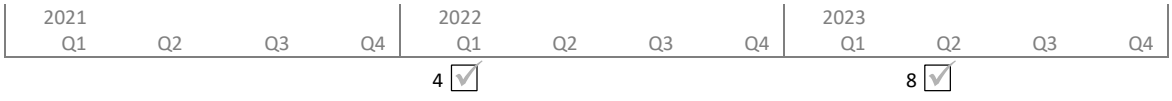

## Goal: Use Software-as-a-service tools to expand capacity and streamline work processes

Objective: Develop modular packages to support data analytics

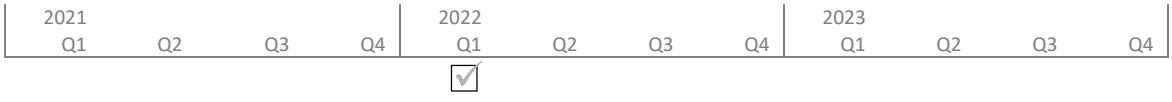
Measure: Report layout and style assets (themes) have been developed




Measure: The total number of R programming language scripts that have been developed to support commonly used analytical functions




Measure: An R programming language package has been developed to collect commonly used analytical functions

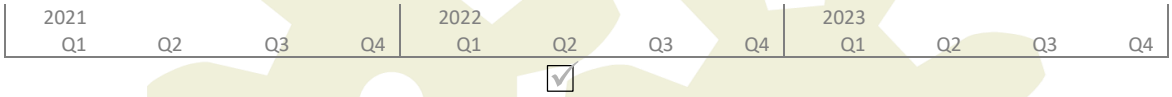


Objective: Implement a collaborative integrated development environment to support collaboration among program staff in data analytics

Measure: A use case has been created for the implementation of the integrated development environment


Measure: Approval has been obtained for the implementation of the integrated development environment

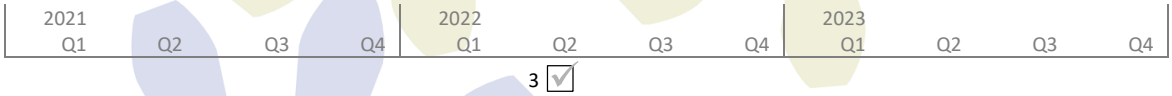

Measure: The integrated development environment has been implemented




## Goal: Develop and implement a data system evaluation plan

Objective: Establish licensing data system performance measures

Measure: The number of licensing system performance measures implemented in automated reporting




Objective: Establish trauma data system performance measures

Measure: The number of trauma system performance measures implemented in automated reporting


Objective: Create a dashboard of data system performance measures

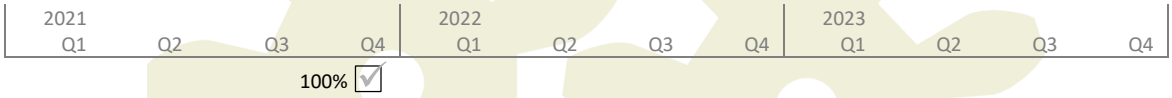
Measure: Data system performance measures dashboard has been created.

## Goal: Implement timely, secure health information exchange using EMS data and other healthcare data

Objective: Implement real-time data integration between the EMS licensing data system and the prehospital data system

Measure: The percentage of licensed transporting agencies for which licensing data has been transmitted from the licensing data system to the prehospital data system


Measure: The percentage of registered non-transporting 911 scene response agencies for which licensing data has been transmitted from the licensing data system to the prehospital data system




Objective: Implement real-time data integration between the prehospital data system and the Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE)

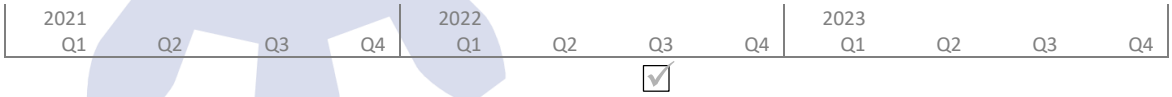
Measure: A data governance and data access policy has been created for the Acute and Communicable Disease Prevention and Health Security and Response Program


Measure: Patient care report data from the prehospital data system are stored in ESSENCE


## Goal: Implement community paramedicine data reporting

Objective: Assess community paramedicine reporting needs among EMS agencies and other stakeholders.

Measure: A community paramedicine reporting needs assessment report has been completed.




Objective: Adopt a minimum data set and data dictionary for community paramedicine reporting that includes a list of data elements, definitions, data types, and other constraints

Measure: A community paramedicine dataset has been adopted

Objective: Implement support for community paramedicine reporting in the state EMS data system.

Measure: Community paramedicine reporting is supported in the state EMS data system

| 2021 | | | | 2022 | | | | 2023 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| | | | | | | | | ☑ | | | |

Objective: Collect community paramedicine data

Measure: The number of community paramedicine programs submitting data in a given month.

| 2021 | | | | 2022 | | | | 2023 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| | | | | | | | | | | 3 ☑ | |

## Goal: Train users on data entry and administration

Objective: Train users and agency administrators of the prehospital data system on submitting data and managing agency reporting to the state

Measure: A new or updated guidance document or training video is published

| 2021 | | | | 2022 | | | | 2023 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| | | ☑ | | ☑ | | ☑ | | | | | |

Objective: Train users and hospital administrators of the trauma registry on submitting data and managing hospital reporting to the state

Measure: A new or updated guidance document or training video is published

| 2021 | | | | 2022 | | | | 2023 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| | | | ☑ | | ☑ | | ☑ | | | | |

Objective: Train users and agency administrators of the community paramedicine reporting system on submitting data and managing agency reporting to the state

Measure: The number of community paramedicine data training sessions conducted

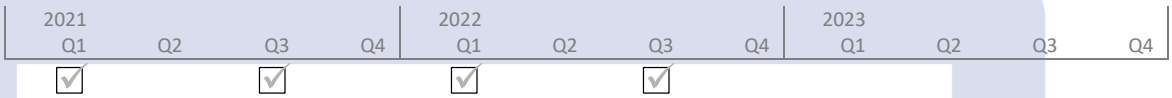
| 2021 | | | | 2022 | | | | 2023 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| | | | | | | | | | 3 ☑ | | |

# Data Use

## Goal: Train users on data use

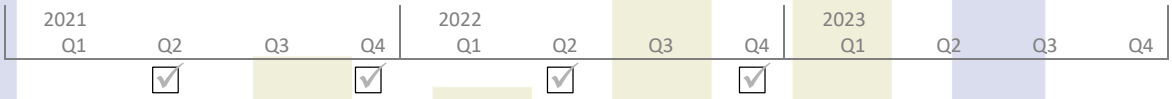
Objective: Train users of the prehospital data system on the use of the report writer to monitor performance

Measure: A new or updated guidance document or training video is published



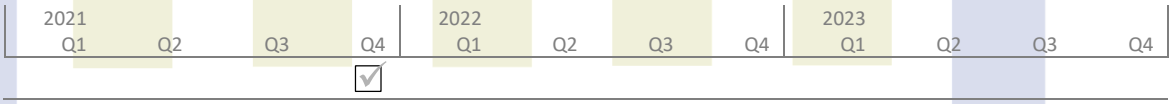

Objective: Train users of the trauma data system on the use of the report writer to monitor performance

Measure: A new or updated guidance document or training video is published

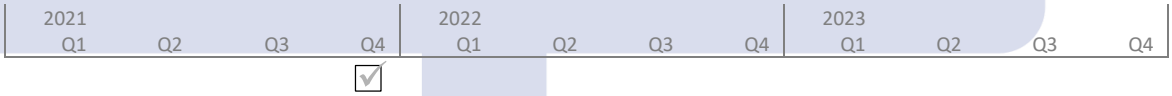



Objective: Train hospital staff to use the hospital portal to retrieve prehospital patient care reports

Measure: A new or updated guidance document is published



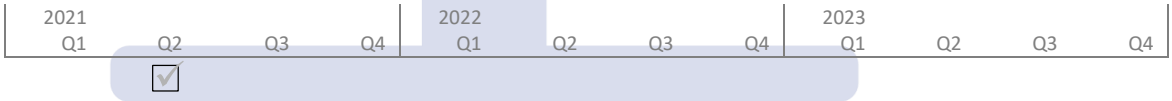

Measure: A new or updated training video is published



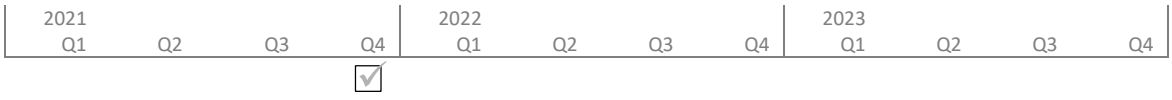

## Goal: Provide feedback to submitters

Objective: Perform comprehensive data quality assessments that include action items for data quality improvement

Measure: Prehospital data quality re-assessment has been provided to all reporting EMS agencies and vendors

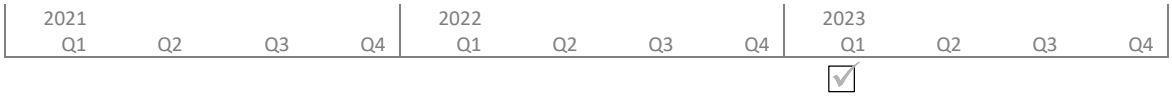



Measure: Trauma registry data quality assessment has been provided to all reporting hospitals and vendors



Objective: Provide data quality feedback to data system users

Measure: A quarterly data quality report dashboard template has been developed

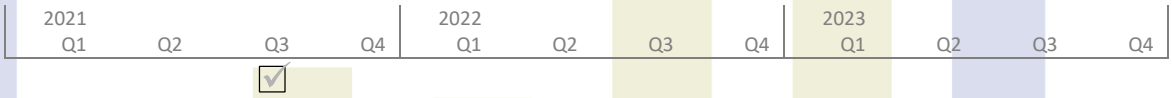



Measure: An iterative improvement cycle for data quality reports has been developed

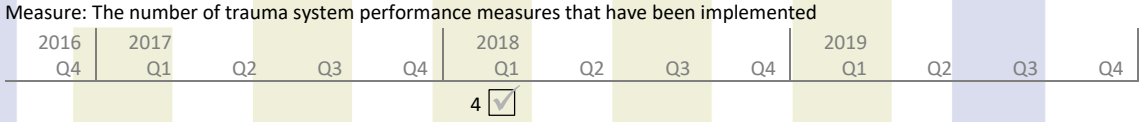

## Goal: Develop performance improvement

Objective: Adopt state-level operational, clinical, or public health surveillance performance measures for EMS and trauma

Measure: EMS performance measures have been revised

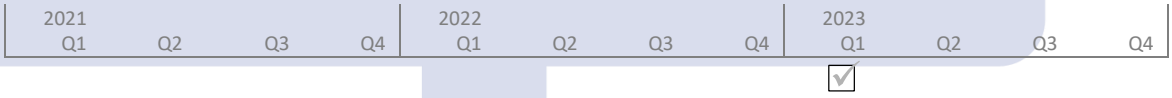



Measure: The number of trauma system performance measures that have been implemented




Objective: Develop and disseminate a basic performance improvement framework and toolkit for use by EMS agencies

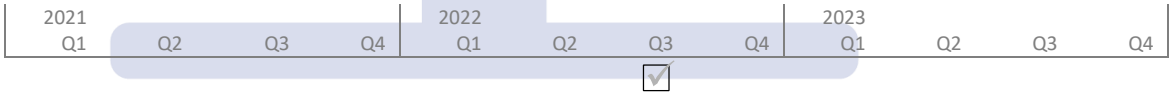
Measure: Publication of a performance improvement framework and toolkit on the EMS website




## Goal: Support data use

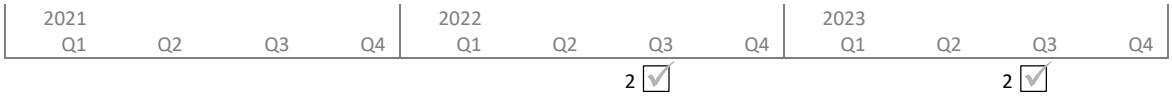
Objective: Implement a system for tracking state responses to internal and external data use requests, including requester, purpose of request, timeliness of response, approval status, hours worked, and data released

Measure: A web-based data request form has been implemented.




Objective: Promote the availability of EMS data for research and analysis

Measure: The number of meetings each year at which EMS data staff have presented about the availability of EMS and trauma registry data



## Objective: Create public dashboards of summarized EMS and trauma registry data

Measure: Public EMS data dashboard has been created and is accessible to the public

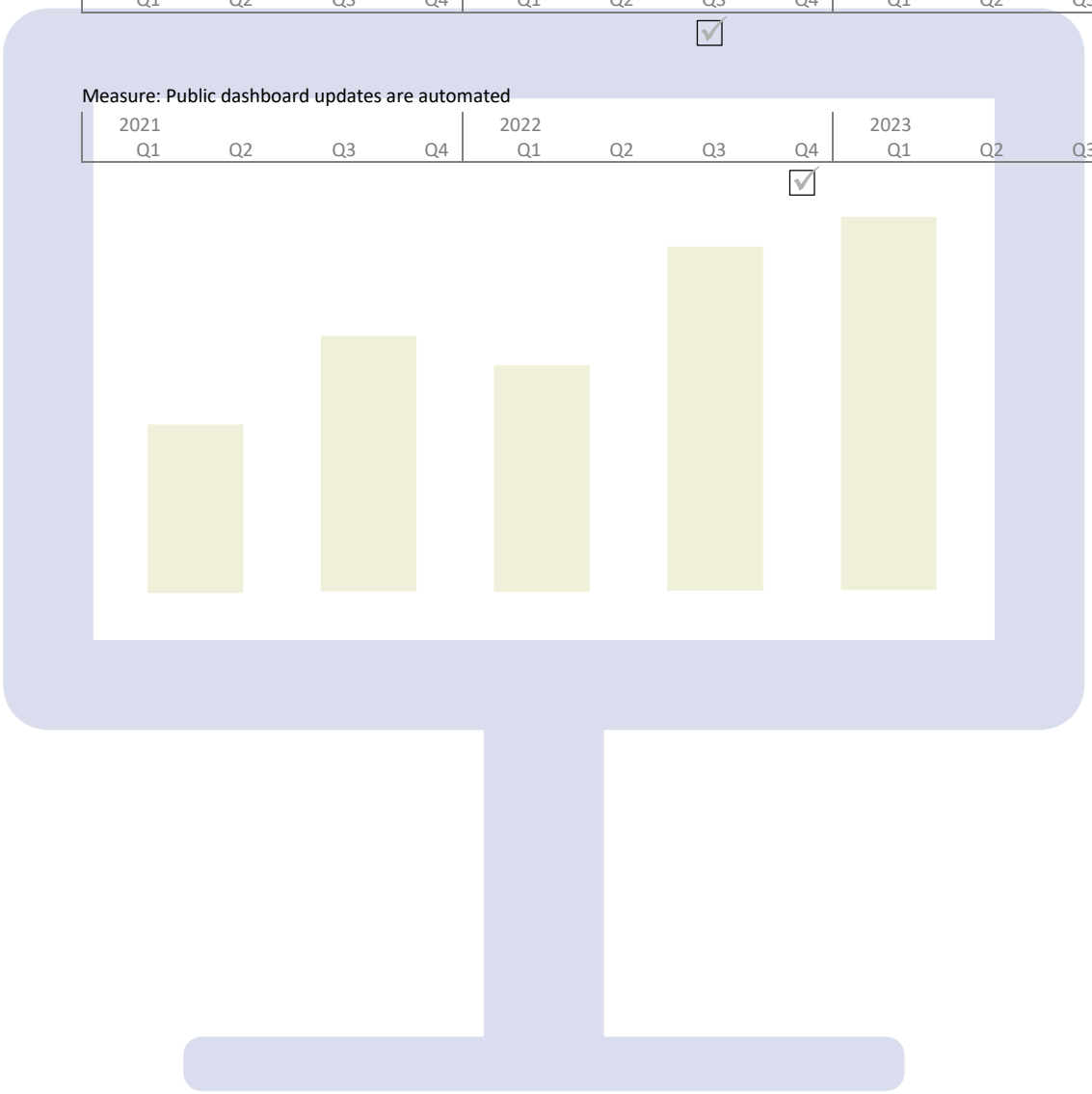
| 2021 | | | | 2022 | | | | 2023 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| | | | ☑ | | | | | | | | |

Measure: Public trauma registry data dashboard has been created and is accessible to the public

| 2021 | | | | 2022 | | | | 2023 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| | | | | | | ☑ | | | | | |

Measure: Public dashboard updates are automated

| 2021 | | | | 2022 | | | | 2023 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| | | | | | | | ☑ | | | | |



Oregon EMS Data Strategic Plan
2021–2023

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