MEDIC ONE/EMERGENCY MEDICAL SERVICES STRATEGIC PLAN & LEVY REAUTHORIZATION

Regional Services Subcommittee meeting 5/14/2024

Summary

The EMS Division and partners briefed the group on Regional Medical Quality Improvement activities, Data Management and Analysis undertakings, and Overhead/Indirect costs.

Attendees

Chair: Angela Birney, City of Redmond
Will Aho, Eastside Fire & Rescue
Cynthia Bradshaw, King County EMS Division
Matt Burrow, Bellevue Fire
Helen Chatalas, King County EMS Division
Andrea Coulson, King County Medic One
Tim Day, Valley Regional Fire Authority
Larry Doll, Seattle Fire
Becky Ellis, King County EMS Division
Jason Gay, Burien Fire
Don Gentry, Mountain View Fire
Jason Hammond, King County EMS Division
Cory James, NORCOM
Doug McDonald, Eastside Fire & Rescue

Tania Mondaca, King County Council
Amy Moorhead, Redmond Fire
Kelly O'Brien, King County EMS Division
Andres Orams, Shoreline Fire
Michele Plorde, King County EMS Division
Tom Rea, King County EMS Division
Lynne Robinson, City of Bellevue
Mark Sawdon, King County Medic One
Adrian Sheppard, Redmond Fire
Aaron Tyerman, Puget Sound Fire
Jim Whitney, Redmond Fire
Todd Wollum, Shoreline Fire
Ryan Woodey, Kirkland Fire
Rose Young, King County EMS Division

Issues discussed:

1. Regional Medical Quality Improvement & Data Management Systems

The EMS Division has broken its Regional Services and Strategic Initiatives into "Lines of Business" and will brief the Subcommittee on these Lines of Business during the first three meetings. The EMS Division briefed participants on the Regional Medical Quality Improvement activities and Data Management Systems.

Regional Medical Quality Improvement (QI) activities highlighted:

- Regional Medical Direction
 - Clinical Guidelines/Standards
 - Regional Surveillance
 - Conditions of Focus
- Emergency Medical Dispatch QI
- Clinical QI
 - QI Reports
 - QI Dashboards
 - Cardiac Case Review

Data Management Systems

- ESO
- AEIOU Strategic Initiative
- Patient data links with Hospitals
- Snowflake
- eCBD/CAD
- King County Public Access Defibrillator (PAD) Registry
 - Public Access Defibrillator-related discussion included PAD data (how often PADs are used; law enforcement vs public usage; in-home vs 'off the wall' usage) and the idea of using drones to deliver AEDs.

Indirect and Infrastructure

- It was asked whether the King County EMS Division's percentage of indirect costs could increase due to anticipated budget concerns at King County.

Issues discussed:

Integrating artificial Intelligence (AI) usage in dispatch (Corti); looking at AI through an equity lens as we embrace technology; "simplifying/refining" dispatch systems; efforts to retain dispatch personnel should include mental wellness; and handling behavioral health needs of patients as well as EMS providers.

Next Meeting

<u>Thursday, June 20, 2024</u>: 1:00 – 3:00 pm Mercer Island Community Center

Topics include discussing regional programs and Strategic Initiative proposals for the 2026-2031 levy span.

5/14/2024 Regional Services Subcommittee meeting 2026-2031 Medic One/EMS levy planning

Reports from Other Subcommittees ALS

5/8/2024 – ALS SUBCOMMITTEE

Actual ALS costs to identify any issues with the allocation, reserve and contingency usage to determine future funding levels.

Key Takeaways:

- 1. ALS Allocation is sufficiently covering costs for ALS agencies although minor modifications are needed.
- 2. Funding reserves and contingencies at Status Quo plus inflation will help ensure programs can meet unanticipated needs in next levy span.

Next meeting - 6/10/24

Provision of ALS services to the Skykomish region and a review of a 2026-2031 Initial Proposed Financial Plan for ALS.

Reports from Other Subcommittees -BLS

5/2/24 – BLS SUBCOMMITTEE

BLS allocation distribution methodology, MIH 2026-2031 Proposal, and 2026-2031 "Programmatic Status Quo" funding level.

Key Takeaways:

- 1. Equity is an important consideration for distributing the BLS allocation.
- 2. There is regional support for funding MIH in the next levy span.

Next meeting – 6/6/24

Further discussion of allocation distribution formula and programs that specifically support BLS.

Regional Services: Lines of Business

Regional Services Lines of Business

- A. Training and Education
- B. Community-Centered Programs
- C. Regional Medical Quality Improvement
- D. EMS Data Management
- E. Regional Leadership and Management
- F. Indirect and Infrastructure

Regional Services: Lines of Business

Regional Services Lines of Business

A. Training and Education

B. Community-Centered Programs

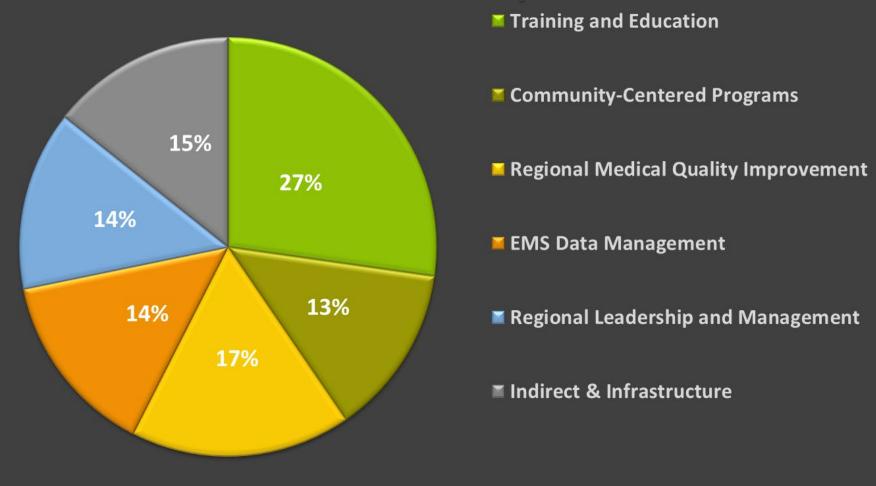
C. Regional Medical Quality Improvement

D. EMS Data Management

E. Regional Leadership and Management

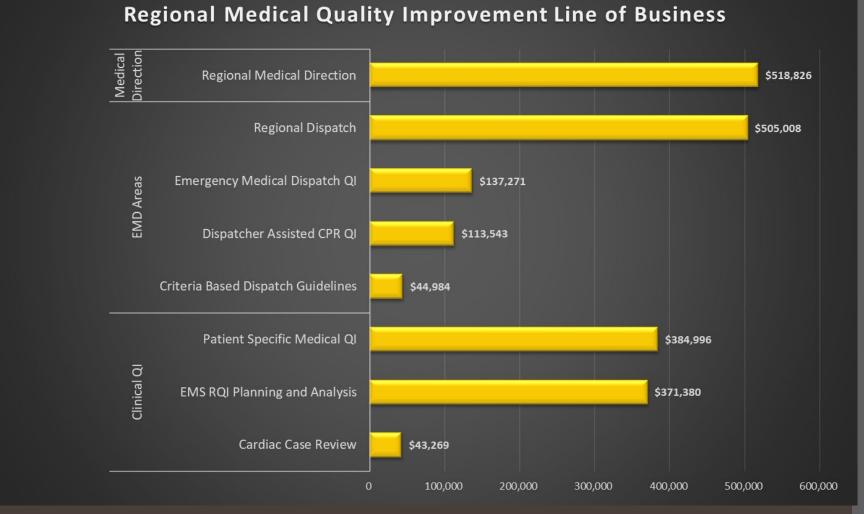
F. Indirect and Infrastructure

Regional Services Line of Business (based on 2022 actuals)



Regional Medical Quality Improvement

(Line of Business)



2022 Actuals \$2,119,277 (\$518,826 Medical Direction, \$800,806 EMD Areas, \$799,645 Clinical QI)

King County EMS Levy



Clinical Guidelines, Training & Education, Medical Oversight & Quality Improvement

A Physician Perspective

Physician Perspective

The goal of the King County EMS system is to provide the highest-quality regional prehospital emergency healthcare that supports and improves the public's health..... by effectively combining clinical and operational excellence.



Physician Perspective

The goal of the King County EMS system is to provide the highest-quality regional prehospital emergency healthcare that supports and improves the public's health..... by effectively combining clinical and operational excellence.

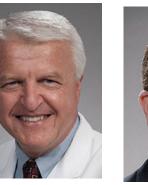
The system's success is based on its design, partnerships, medically-based strategies, and commitment to constantly improve.



King County Physician Involvement







Andy McCoy



Michael Sayre



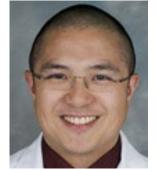
Adrian Whorton Sam Sharar





Andy Celestia









Bryan McNeilly Andrew Latimer Rich Utarnachitt David Murphy

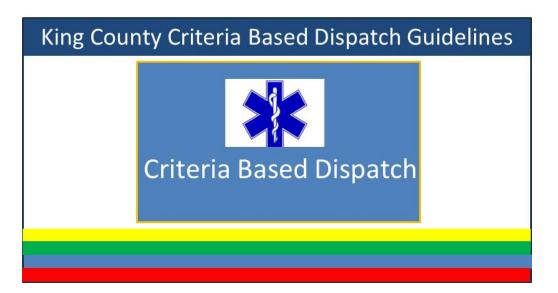


Physician Responsibility

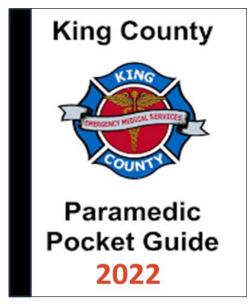
Clinical Guidelines & Standards
Training & Education
Quality Improvement
Advocacy



King County Dispatch, EMT & Medic Guidelines

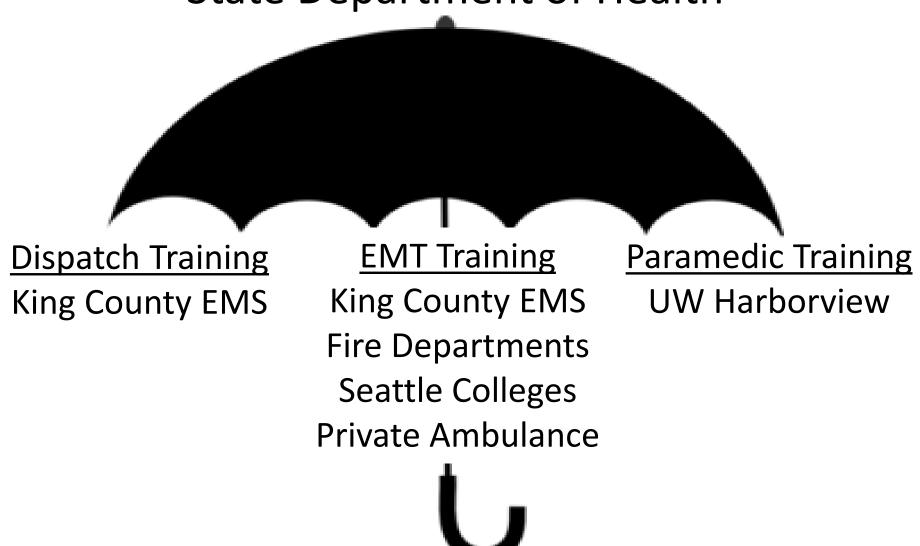








Dispatch, EMT, & Paramedic Training State Department of Health



Program of Quality Improvement

Standing activities
Project-based evaluation
Program-based direction



Regional Surveillance: KCEMS Dashboards

Real-time metrics to help assess the emergency response and regional health.

Ongoing KCEMS Dashboards

BLS, ALS, & Total Volumes
Suspected drug overdose
Gunshot injuries
Assisted & skilled living
Environmental emergencies
Mental health responses

Suspected drug OD
Cardiac arrest
Advanced airway
Stroke
ST-elevation MI
Wall Times

Information for Fire Departments and EMS stakeholders, Hospitals, Public Health, and DoH.

Project-based Evaluation



Quality of Dispatcher CPR Dispatcher CPR for Pediatric Arrest







BLS Naloxone







BLS Airway for Cardiac Arrest



ABD & Ketamine

Standing Condition-Focused Evaluation









Project-based Evaluation

Coming Attractions:



EMS and Left Ventricular Assist Device



EMS & Crisis Centers

Field therapy with buprenorphine

Program-based Quality Improvement

Pediatrics Trauma

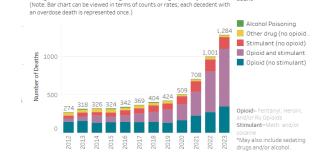
Substance Use Disorder Drug & Alcohol Poisoning Deaths, King County

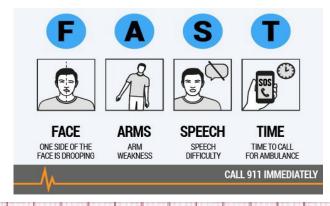
Stroke Cardiac Arrest













Program-based Direction

Physician case review

Paramedic case review across all Fire Departments

- ESO review and feedback
- In-person / classroom case discussion









Advocacy

Represent and support EMS to external organizations and persons.





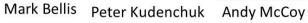










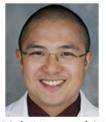


Michael Sayre Adrian Whorton













Andy Celestia

Bryan McNeilly Andrew Latimer Rich Utarnachitt David Murphy



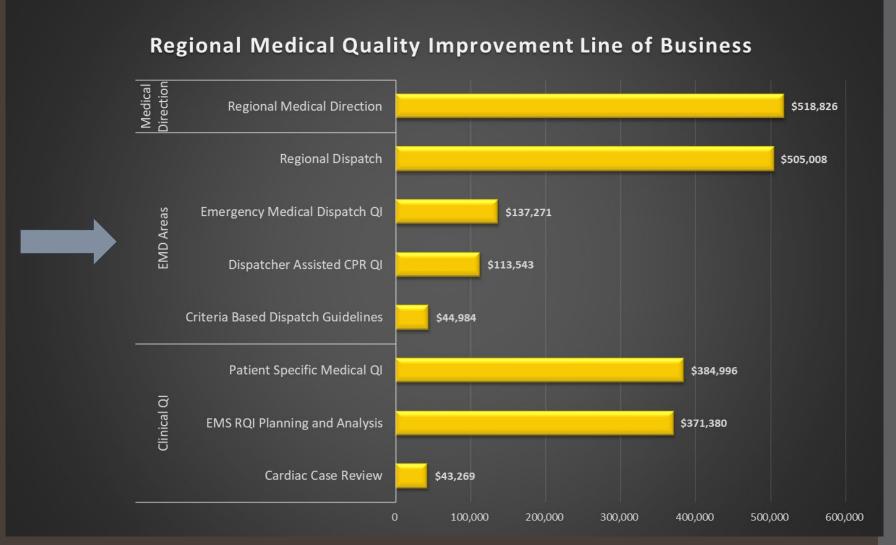
Physician Responsibility

Clinical Guidelines & Standards
Training & Education
Quality Improvement
Advocacy



Regional Medical Quality Improvement

(Line of Business)



2022 Actuals \$2,119,277 (\$518,826 Medical Direction, \$800,806 EMD Areas, \$799,645 Clinical QI)

Regional Medical Quality Improvement: <u>EMD Areas</u>



Regional Dispatch

NORCOM 9-1-1, ValleyCom 9-1-1, and Port of Seattle



Criteria Based Dispatch Guidelines

- Implemented 1990
- Based on:
 - Specific medical criteria
 - Level of care + Urgency of care = level of response
- Guidelines, not protocols

Regional Medical Quality Improvement: EMD Areas

Dispatch-Assisted CPR QI

- Review, analyze, feedback
- General resuscitation sciences



Resuscitation

Volume 188, July 2023, 109816



Association between bystander physical limitations, delays in chest compression during telecommunicator-assisted cardiopulmonary resuscitation, and



Resuscitation

Volume 156, November 2020, Pages 230-236

Clinical paper

Seizure-like presentation in OHCA creates barriers to dispatch recognition of cardiac larrest

Madison Schwarzkoph ^a \nearrow \boxtimes , Lihua Yin ^b, Lindsey Hergert ^b, Christopher Drucker ^b, Catherine R. Counts a, Mickey Eisenberg a b

Amanda L. Missel a A S., Christopher J. Drucker b, Kosuke Kume b, Jenny Shin b, Lindsey Hergert b, Robert W. Neumar cd, Peter J. Kudenchuk be, Thomas Rea bf

Journal of the American Heart Association

Volume 13. Issue 2. 16 January 2024 https://doi.org/10.1161/JAHA.123.031740



ORIGINAL RESEARCH

Pediatric Out-of-Hospital Cardiac Arrest: The outcome after out-of-hospital cardiac arrest Role of the Telecommunicator in Recognition of Cardiac Arrest and Delivery of Bystander Cardiopulmonary Resuscitation

> Miranda M. Lewis, MD 📵 ; Killian Pache, BA 📵 ; Sally Guan, BA 📵 ; Jenny Shin, MPH 📵 ; Megin Parayil, MPH; Catherine R. Counts, PhD, MHA (b); Chris Drucker, PhD; Michael R. Sayre, MD (b); Peter J. Kudenchuk, MD (i); Mickey Eisenberg, MD, PhD; Thomas D. Rea, MD, MPH (i)

Regional Medical Quality Improvement: EMD Areas



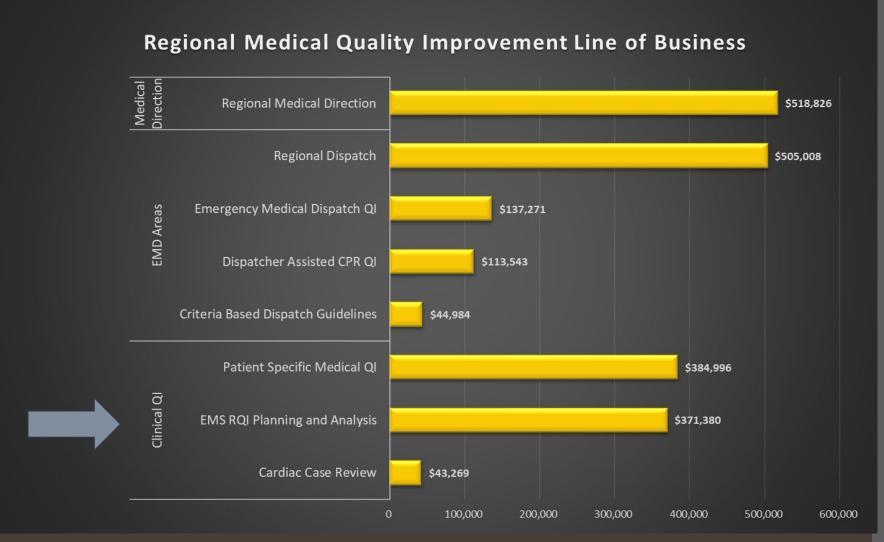
EMD QI

- IDC-specific reviews
- Multi-level approach
 - Call taker
 - Communication Center
 - Regional
- Current topic Cancelled ALS calls

- EMD QI + Dispatch-Assisted CPR QI = <2% of all medical calls
 - What if we can evaluate 100% of calls?

Regional Medical Quality Improvement

(Line of Business)



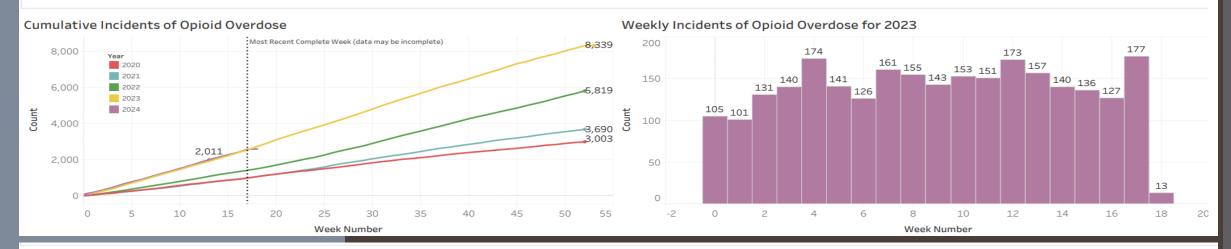
2022 Actuals \$2,119,277 (\$518,826 Medical Direction, \$800,806 EMD Areas, \$799,645 Clinical QI)

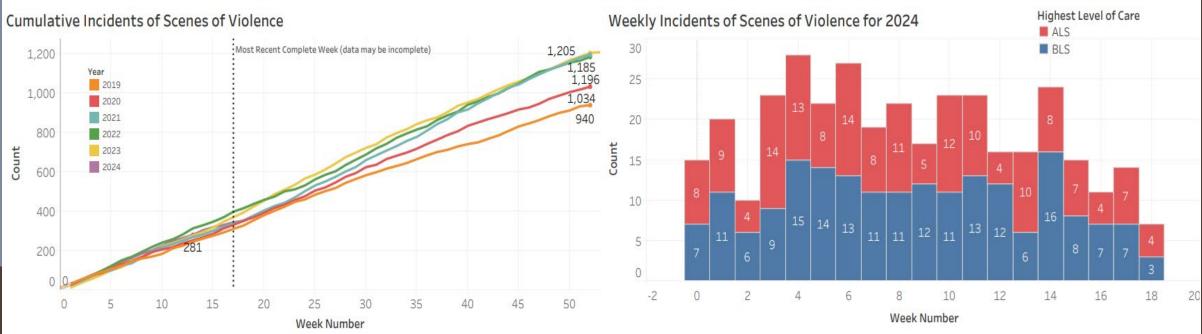
EMS-Suspected Injury/Trauma Incidents



Opioid Overdose

Definition: Suspected overdose determined based on a sum of different factors that were documented in the electronic helath record. More details can be found: https://kingcounty.gov/depts/health/overdose-prevention/data.aspx





Medical QI Report

- -Kicked back up March 24'
- -Sent quarterly

2024 King County EMS Quality Improvement Report

Seattle and King County

Pediatric Resuscitation: The Role of 9-1-1 Telecommunicator

March 12, 2024

Background: In King County, the telecommunicator at the emergency communication center serves as an important part of the chain of survival by helping to identify the cardiac arrest patient and coaching CPR, a lifesaving activity termed "T-CPR". This evidence comes from evaluation of the care of adult cardiac arrest patients. As a consequence, the rate of bystander CPR in King County approaches 75%, a level that is substantially greater than most communities or systems. However, little is known about how the telecommunicator is involved and impacts the relatively rare event of pediatric cardiac arrest.







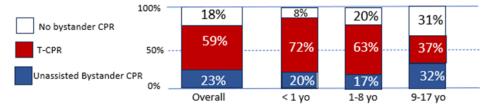




The current project reviewed nearly 200 9-1-1 calls for pediatric cardiac arrest that occurred prior to EMS arrival during a 7-year time period in Seattle and King County to understand how the telecommunicator interfaces with the layperson callers and impacts T-CPR. The specific goals of evaluation were to determine how often and how quickly telecommunicators help identify pediatric cardiac arrest and coach CPR.

Key Findings: Overall bystander CPR was performed in 82% of all pediatric cases, the majority due to active telecommunicator involvement (Figure 1). The telecommunicator was essential in identifying cardiac arrest and coaching CPR in 59% of all cases. The bystander provided unassisted CPR in about 23%. There was evidence that arrest recognition and bystander CPR was more challenging among older pediatric patients as bystander CPR occurred in 69% of 9-17 year olds compared to 80% among 1-8 year olds and 92% among those <1 year received bystander CPR.

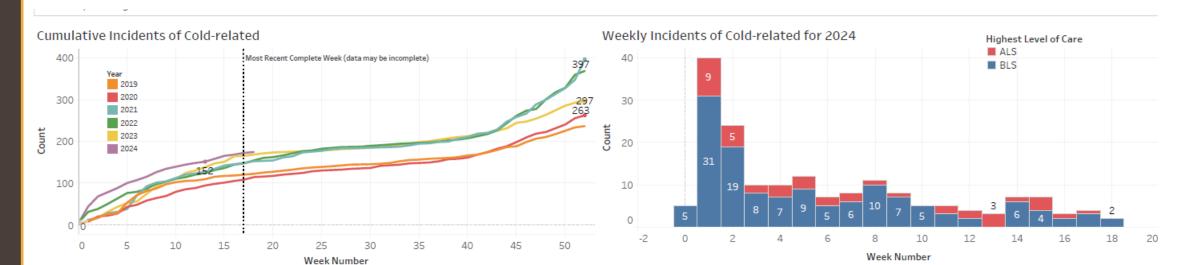
Figure. Bystander CPR among Pediatric Arrest: Overall and according to Age Group



Among cases requiring telecommunicator assistance, the median interval from call receipt to cardiac arrest recognition was 59 seconds and the median time from call receipt to the start of CPR was 115 seconds – performance comparable to T-CPR best practices among adult OHCA. The coached compression rate was 93 per minute, a compression rate that rivals CPR by well-trained laypersons.

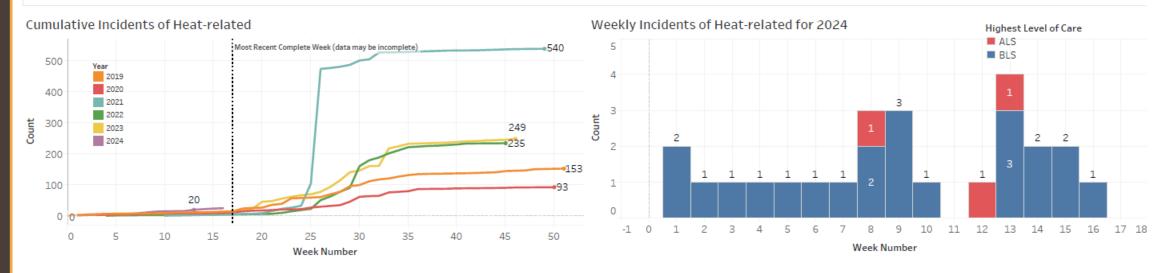
Summary: The telecommunicator is integral to increase timely arrest recognition and bystander CPR in cardiac arrest, providing a key strategy to improve survival following pediatric cardiac arrest.

Medical Director Comment: Although a common take-home, the project's findings underscore (again) the team effort involved in successful cardiac arrest resuscitation. We have long appreciated the important role of T-CPR in adult arrest, and this evaluation highlights similar impactful participation by the telecommunicator in pediatric arrest. The telecommunicator efforts help sustain patient physiology which in turn provides for more effective EMS treatment.



Heat-related

Definition: Primary/secondary impressions include "heatstroke and sunstroke", "heat exhaustion", "heat exhau



109

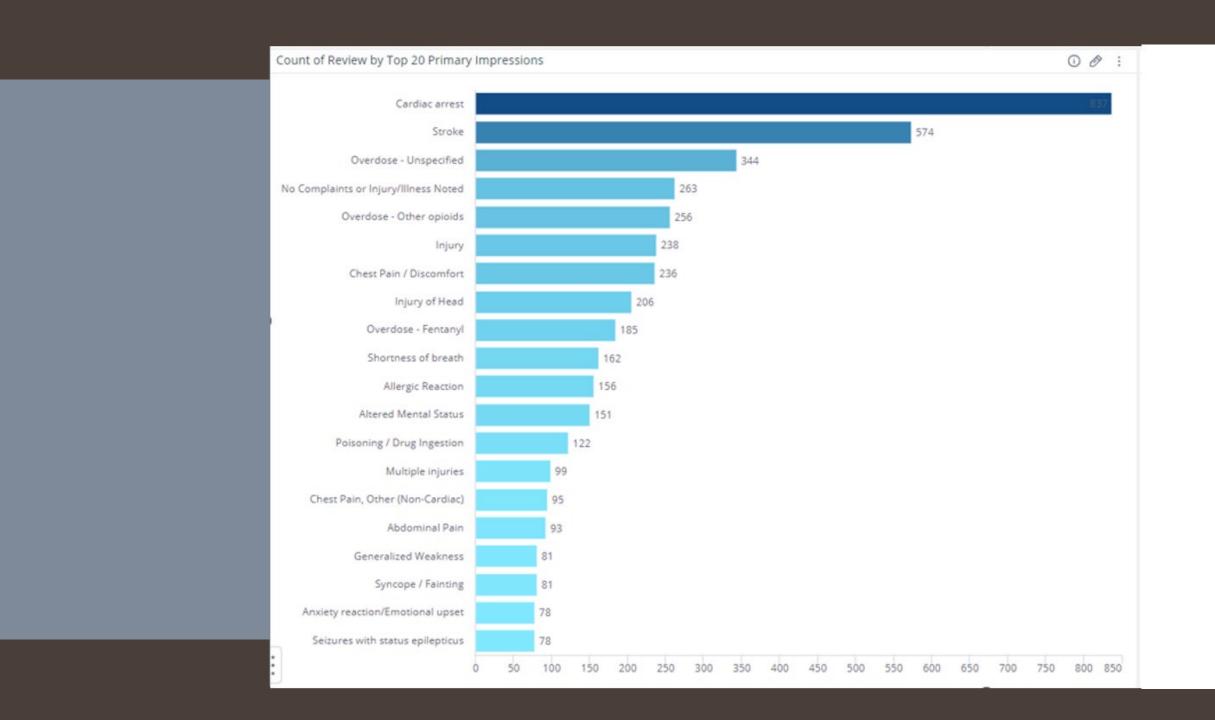
39

148

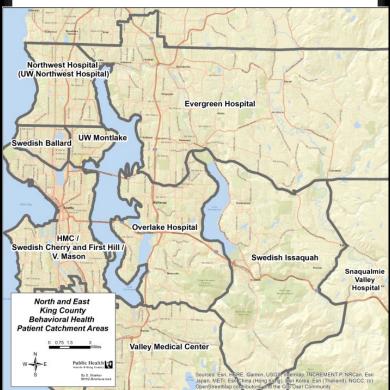
114

112

98.2%









Microsoft Teams

CCR video short

2024-05-10 19:46 UTC

Recorded by

Henson, Hannah

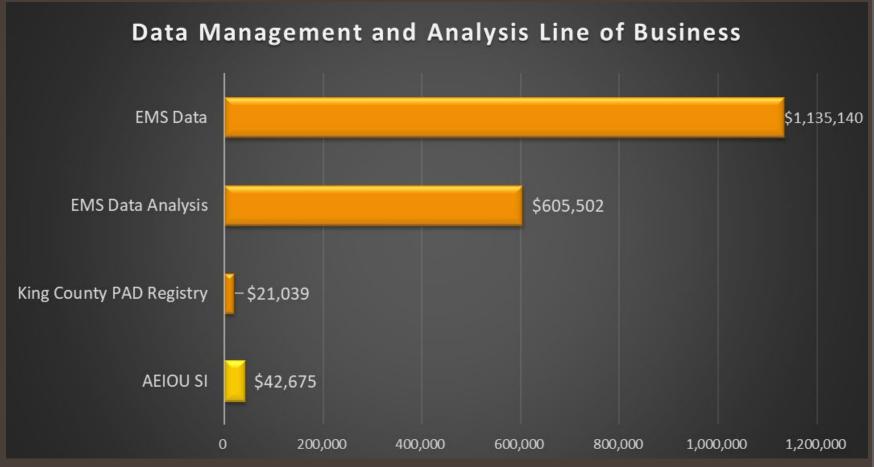
Organized by

Henson, Hannah

Any Questions?

EMS Data Management and Analysis

(Line of Business)



2022 Actuals \$1,804,355



Help standardize documentation guidelines in collaboration with medical director



Work with KCIT to clean up our data repository and manage data dictionary

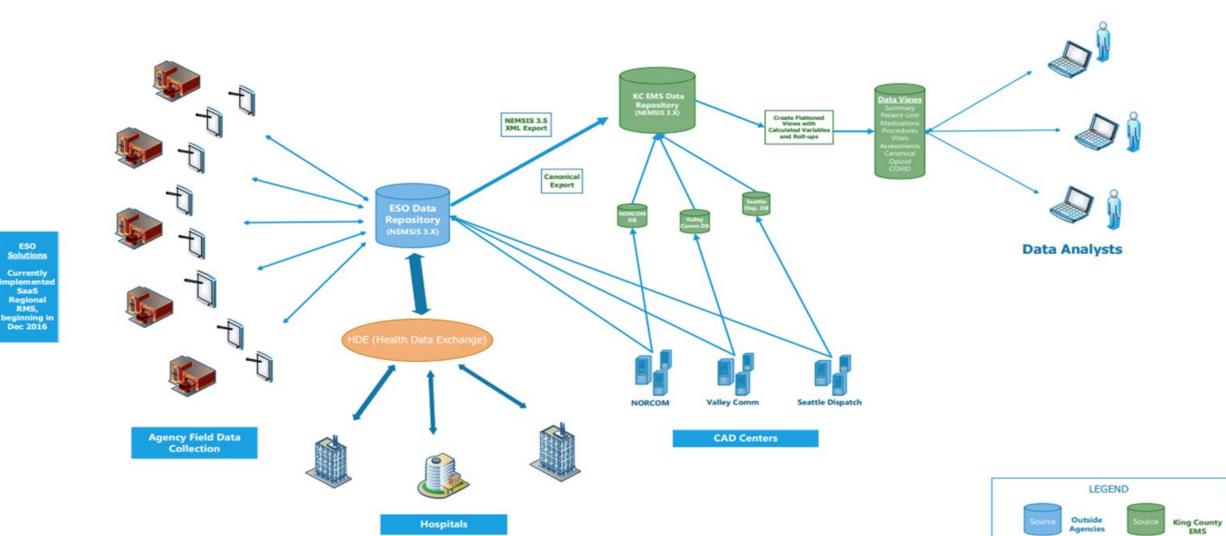


ESO Umbrella account holder for King County and Seattle



Works with ESO and agencies on various elements with the WEMSIS/NEMSIS repository

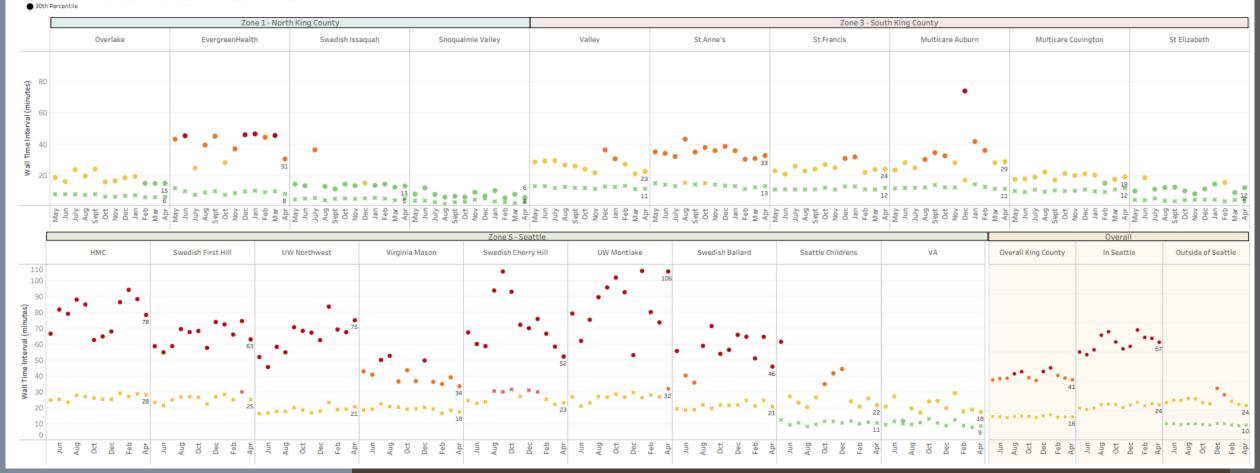
ESO Data Management



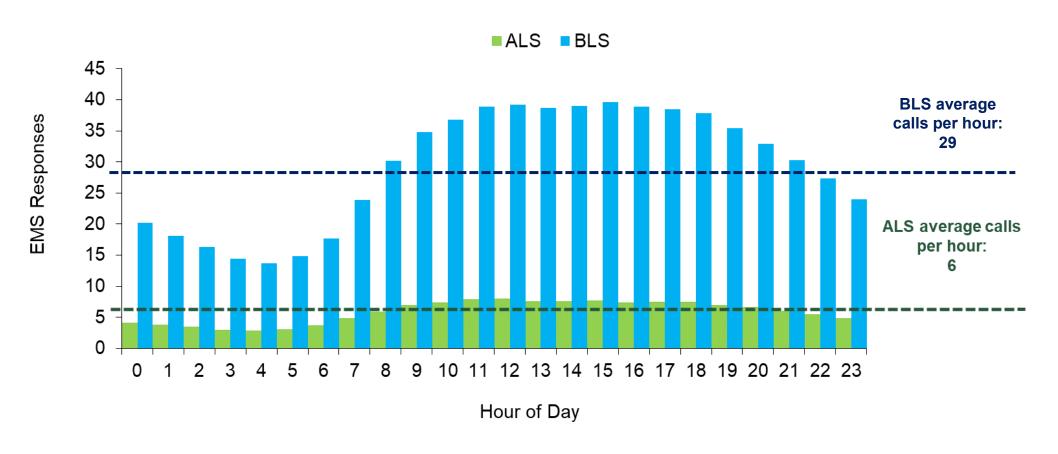
ESO Solutions

King County Wall Times: Median and 90th Percentile

Public Health
Seattle & King County

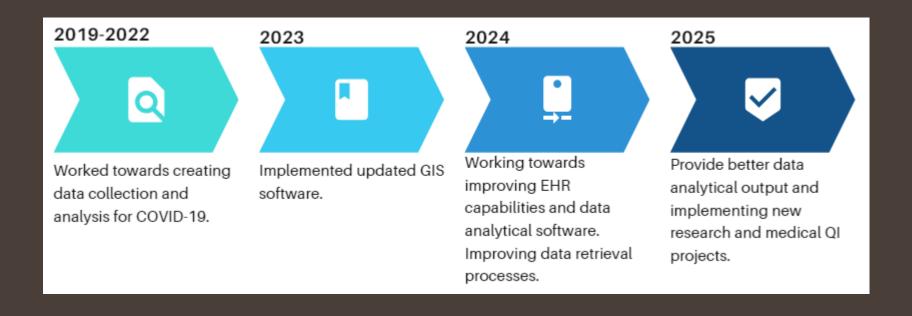


Number of EMS Responses by Hour of Day



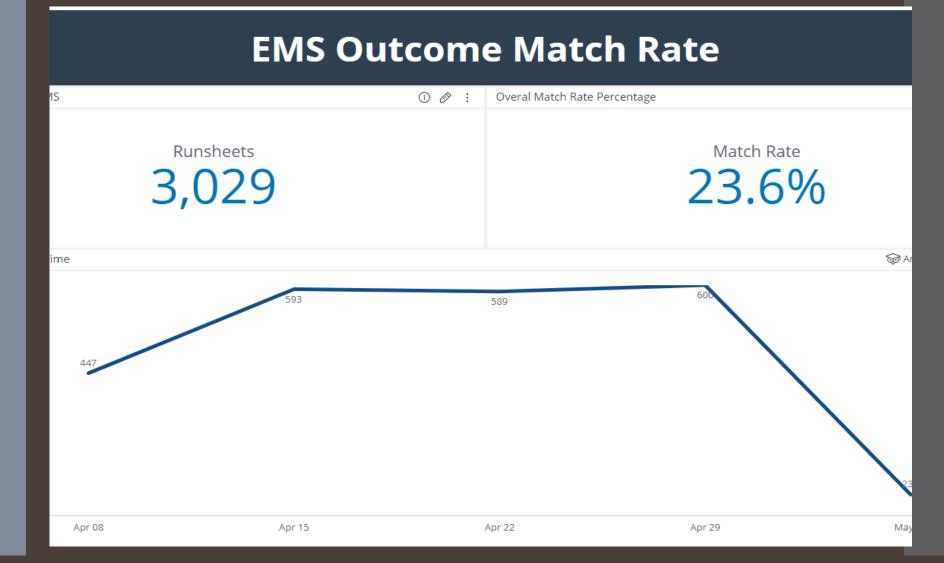
AEIOU Strategic Initiative (SI)

Overview: The AEIOU QI SI's goal is to Accelerate, Evaluate and Innovate Opportunities for Unprecedent Quality Improvement. This means working to modernize our technology, automate data retrieval, improve training techniques and improve data collection with our Electronic Health Record (EHR) system. We also worked towards upgrading our geographical software for accurate evaluation of resources.

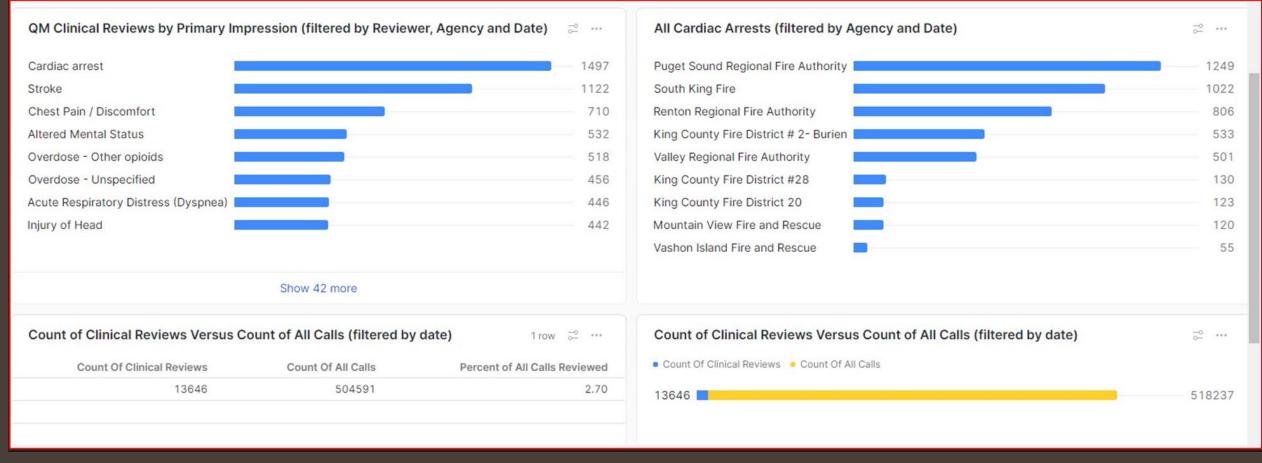


Improving EMS Hospital Outcomes with eMPI linking

- -Turned on eMPI 5/8/24
- -Hospital Kick-off with ESO
- -No changes to providers work flow, will still need to scan



Screenshot of Snowflake Reader



- -Evaluating to see if we should purchase an umbrella account (\$37,250.00/yr)
- -QM Insights has limited views, sharing access and can't see user edits to dashboards
- -Set up a database for each agency that's interested and customize dashboards with options for per user

NEW! ESO iOS App

- -Working with ESO to be involved in Early Adopter Program
- -Looking to pilot in Quarter 3 for possible use in patient care





Unlock the future of EHR right at your fingertips.

From adding vital signs hands-free to quickly scanning identification and medications, the new ESO Electronic Health Record (EHR) native iOS app is designed to bring the ultimate ease and efficiency to your daily work – so you can stay focused on the job at hand.

Smart scanning technology.

Quickly scan and populate patient demographics and medication details with advanced OCR (Optical Character Recognition) technology using your device's camera.

Effortless multitasking.

Open two EHR windows simultaneously for more efficient data entry and navigation within the same patient record.

Hands-free workflows with Siri.

Use Siri for voice commands to manage incident times, vital signs, and flowchart entries. Plus, streamline and reduce manual data input with speech-to-text entry.

Comfortable viewing with dark mode.

Switch to dark mode for a strain-free viewing experience in low-light environments – perfect for night shifts or dimly lit rooms.



EMS Data Management and Analysis: EMS Data Areas

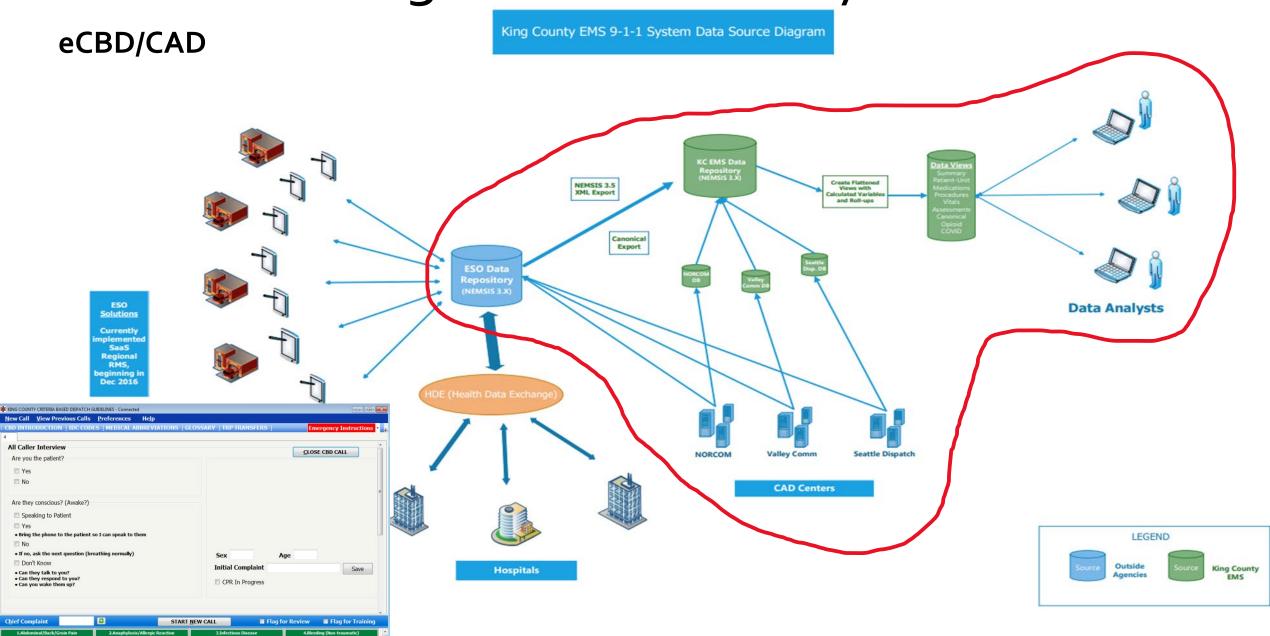


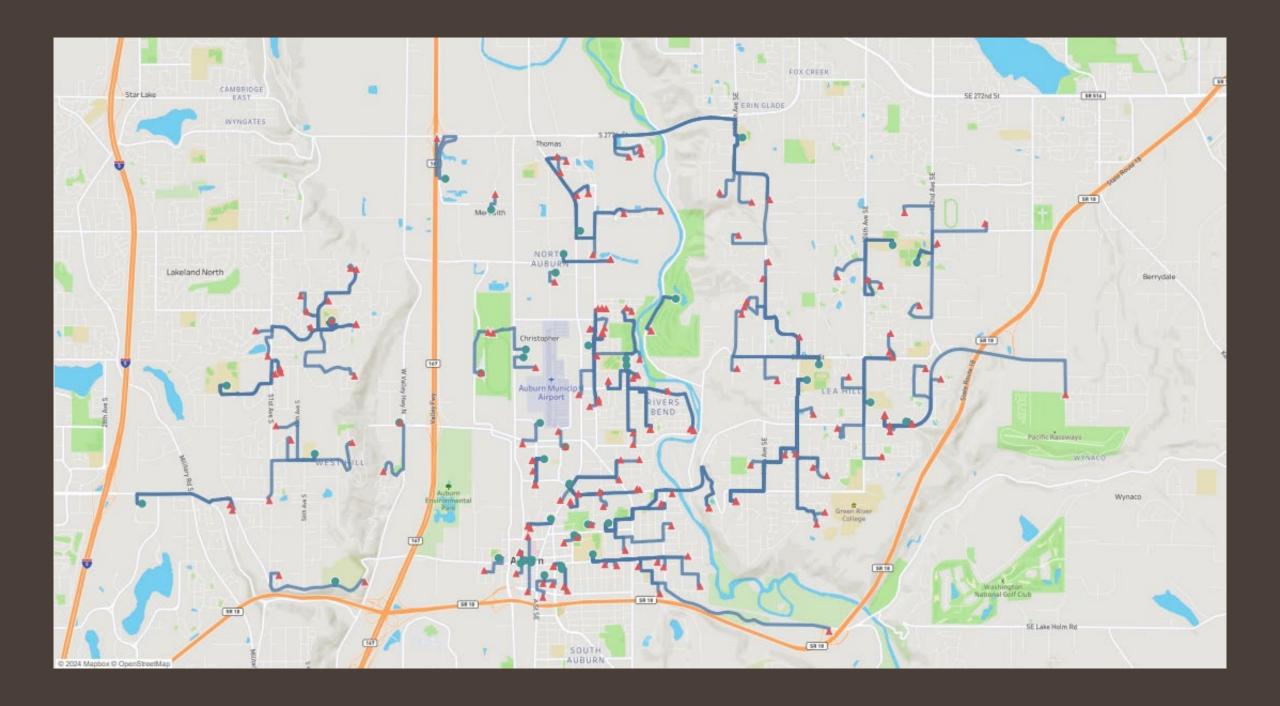
Diagram created by Dan Henwood, May 2024

EMS Data Management and Analysis: EMS Data Areas

King County PAD Registry

- RCW 70.54.310 (enacted 1998)
- Community Responder CPR-AED Program developed
 - Goals:
 - Increased availability of PADs in the community,
 - Increase training in CPR and AED usage,
 - Improve OHCA outcomes.
 - Subsection (d) states ...

"shall notify the local emergency medical services organization about the existence and the location of the defibrillator..."





Any Questions?

Regional Services: Lines of Business

Regional Services Lines of Business

A. Training and Education

B. Community-Centered Programs

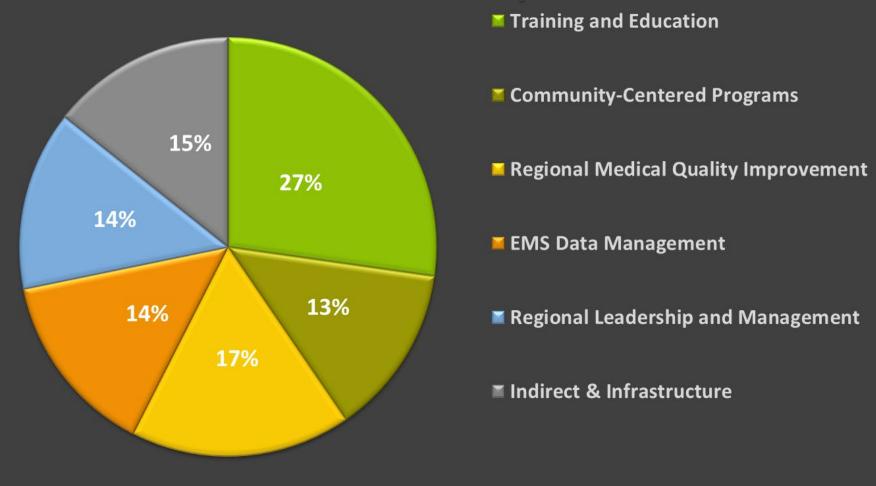
C. Regional Medical Quality Improvement

D. EMS Data Management

E. Regional Leadership and Management

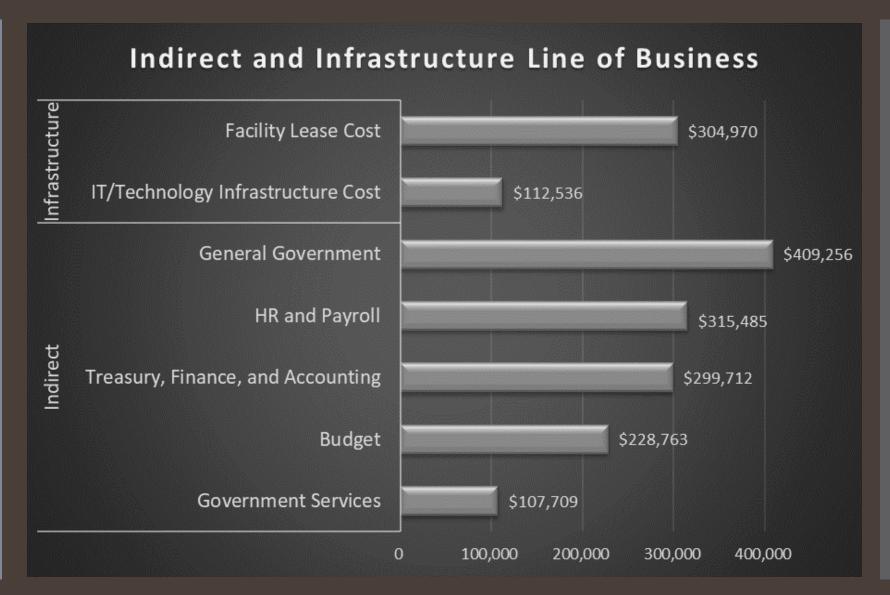
F. Indirect and Infrastructure

Regional Services Line of Business (based on 2022 actuals)



Indirect & Infrastructure

(Line of Business)



2022 Actuals \$1,778,431 (Infrastructure \$417,506, Indirect \$1,360,925)

Any Questions?

2026-2031 Status Quo Budget

PRELIMINARY STATUS QUO

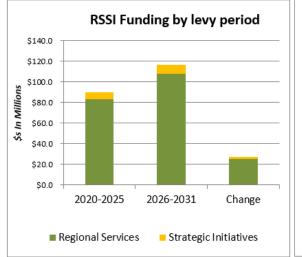
What-if we continue existing programs and only add forecasted inflation

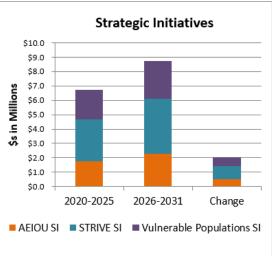
RSSI DASHBOARD

RSSI -- 2020-2025 Inflated to 2026-2031 Preliminary Status Quo

| (In Millions) | | | | | | | | | | | |
|--------------------------------|--------|---------|--------|----------|--|--|--|--|--|--|--|
| | 2020- | 2026- | | % | | | | | | | |
| RSSI Funding Categories | 2025 | 2031 | Change | Increase | | | | | | | |
| Regional Services | \$83.0 | \$108.0 | \$25.0 | 30% | | | | | | | |
| Strategic Initiatives | \$6.7 | \$8.7 | \$2.0 | 30% | | | | | | | |
| TOTAL RSSI | \$89.7 | \$116.7 | \$27.0 | 30% | | | | | | | |
| | 2020 | 2026 | | | | | | | | | |

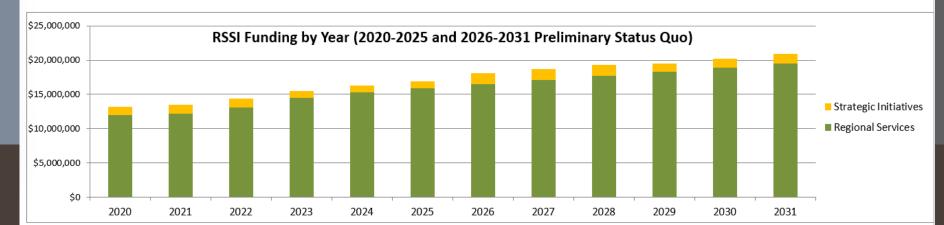
| | 2020- | 2026- | | % |
|---------------------------|-------|-------|--------|----------|
| Strategic Initiatives | 2025 | 2031 | Change | Increase |
| AEIOU SI | \$1.8 | \$2.3 | \$0.5 | 30% |
| STRIVE SI | \$2.9 | \$3.8 | \$0.9 | 30% |
| Vulnerable Populations SI | \$2.0 | \$2.7 | \$0.6 | 30% |
| TOTAL RSSI | \$6.7 | \$8.7 | \$2.0 | 30% |





| | 2.68% | 2.01% | 7.29% | 10.54% | 5.51% | 4.10% | 3.68% | 3.49% | 3.46% | 3.41% | 3.43% | 3.44% | | | |
|-------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|------------|
| RSSI Funding Categories | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2020-2025 | 2020-2025 | Difference |
| Regional Services | 11,976,022 | 12,216,740 | 13,107,340 | 14,488,854 | 15,287,189 | 15,913,964 | 16,499,598 | 17,075,434 | 17,666,244 | 18,268,663 | 18,895,278 | 19,545,275 | 82,990,109 | 107,950,492 | 24,960,383 |
| Strategic Initiatives | 1,209,732 | 1,254,162 | 1,296,735 | 957,247 | 988,215 | 1,022,479 | 1,572,651 | 1,630,411 | 1,685,756 | 1,244,421 | 1,284,679 | 1,329,223 | 6,728,570 | 8,747,141 | 2,018,571 |
| TOTAL Current RSSI | 13,185,754 | 13,470,902 | 14,404,075 | 15,446,101 | 16,275,404 | 16,936,443 | 18,072,249 | 18,705,844 | 19,351,999 | 19,513,084 | 20,179,957 | 20,874,498 | 89,718,679 | 116,697,632 | 26,978,954 |

| Strategic Initiatives | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2020-2025 | 2020-2025 | Difference |
|---------------------------|-----------|-----------|-----------|---------|---------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
| AEIOU SI | 268,542 | 279,042 | 289,171 | 299,581 | 310,246 | 322,004 | 349,105 | 362,755 | 375,922 | 389,455 | 403,320 | 418,606 | 1,768,587 | 2,299,163 | 530,576 |
| STRIVE SI | 630,429 | 652,209 | 672,931 | 310,986 | 318,947 | 327,846 | 819,558 | 847,872 | 874,810 | 404,282 | 414,631 | 426,200 | 2,913,348 | 3,787,352 | 874,004 |
| Vulnerable Populations SI | 310,761 | 322,911 | 334,633 | 346,680 | 359,022 | 372,629 | 403,989 | 419,784 | 435,023 | 450,684 | 466,728 | 484,417 | 2,046,635 | 2,660,626 | 613,991 |
| TOTAL Current RSSI | 1,209,732 | 1,254,162 | 1,296,735 | 957,247 | 988,215 | 1,022,479 | 1,572,651 | 1,630,411 | 1,685,756 | 1,244,421 | 1,284,679 | 1,329,223 | 6,728,570 | 8,747,141 | 2,018,571 |



RSSI DASHBOARD