911 CALL-PROCESSING WORKSHOP

"UNDERSTANDING THE

WHO, WHAT, WHY, WHEN, AND HOW

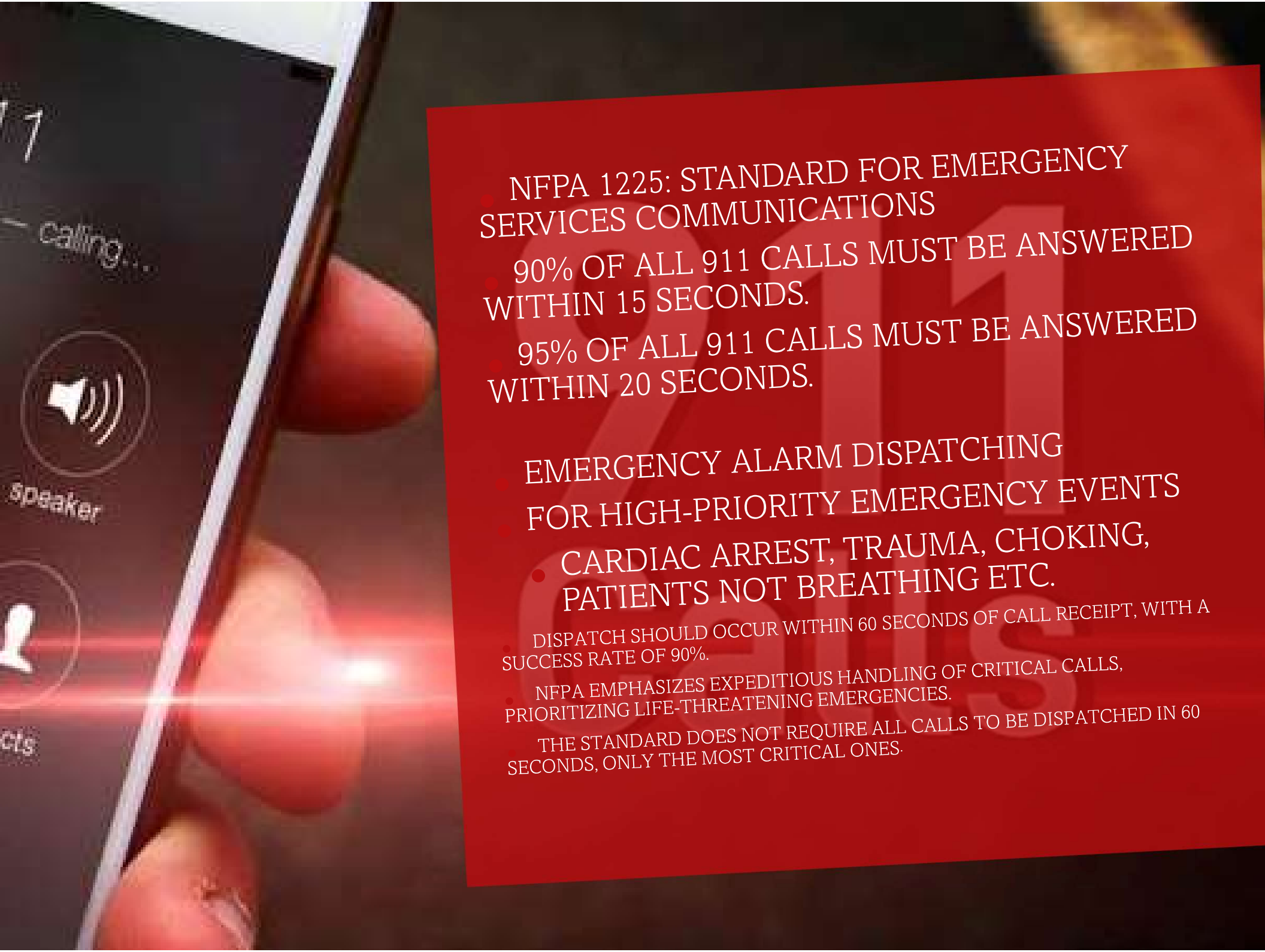
OF

911 CALL-PROCESSING"

WORKSHOP OBJECTIVES

- REVIEW CALL-PROCESSING STANDARDS (NFPA/CONFIRE)
- UNDERSTANDING THE CONFIRE CALL-PROCESSING HISTORY AND CURRENT PRACTICES
- EXPLORE PERFORMANCE METRICS AND BENCHMARKING
- DEMONSTRATION OF 911 CALL-PROCESSING
- OPTIONS FOR FUTURE EFFICIENCY
- FEEDBACK
- NEXT STEPS

NFPA STANDARD FOR 911 CALL PROCESSING



- NFPA 1225: STANDARD FOR EMERGENCY SERVICES COMMUNICATIONS
- 90% OF ALL 911 CALLS MUST BE ANSWERED WITHIN 15 SECONDS.
- 95% OF ALL 911 CALLS MUST BE ANSWERED WITHIN 20 SECONDS.
- EMERGENCY ALARM DISPATCHING
- FOR HIGH-PRIORITY EMERGENCY EVENTS
- CARDIAC ARREST, TRAUMA, CHOKING, PATIENTS NOT BREATHING ETC.

DISPATCH SHOULD OCCUR WITHIN 60 SECONDS OF CALL RECEIPT, WITH A SUCCESS RATE OF 90%.

NFPA EMPHASIZES EXPEDITIOUS HANDLING OF CRITICAL CALLS, PRIORITIZING LIFE-THREATENING EMERGENCIES.

THE STANDARD DOES NOT REQUIRE ALL CALLS TO BE DISPATCHED IN 60 SECONDS, ONLY THE MOST CRITICAL ONES.

NATIONAL DISPATCH PROCESSING TIME STANDARDS & GUIDANCE

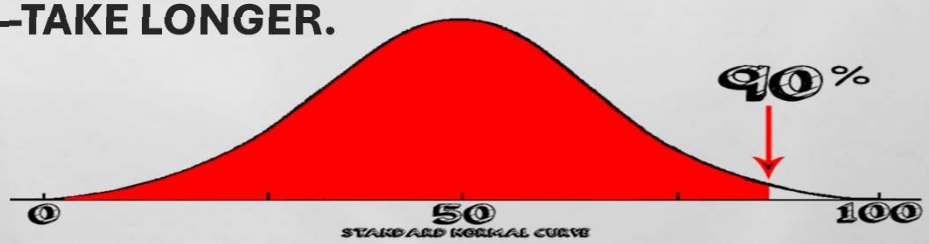
- National Emergency Number Association (NENA)
  - Call pickup ≤15 seconds on **90% of calls**
  - No fixed call-processing time standard
- National Fire Protection Association (NFPA 1710)
  - Call pickup ≤15 seconds on **90% of calls**
  - Call processing:
    - **64 seconds** (general)
    - **90 seconds** when EMD, translation, or special conditions apply
- International Academies of Emergency Dispatch (IAED)
  - Emphasizes **quality and protocol compliance**
  - Does **not prescribe a time-based standard**

90TH PERCENTILE EXPLAINED

- IF WE LINE UP ALL 911 CALLS FROM FASTEST TO SLOWEST, 9 OUT OF EVERY 10 CALLS ARE ANSWERED AND PROCESSED WITHIN THIS AMOUNT OF TIME. ONLY THE SLOWEST 1 OUT OF 10 TAKE LONGER."

- FOR 90% OF CALLERS, HELP IS DISPATCHED WITHIN X SECONDS. THE REMAINING 10% ARE THE UNUSUALLY COMPLEX OR DIFFICULT CALLS.

- THINK OF IT LIKE TRAFFIC ACCIDENT RESPONSE: IF WE SAY THE 90TH PERCENTILE IS 60 SECONDS, THAT MEANS ALMOST EVERYONE GETS THROUGH IN A MINUTE OR LESS, BUT A FEW CALLS—LIKE PILE-UPS OR LANGUAGE BARRIERS—TAKE LONGER.



90TH PERCENTILE CONTINUED

- **WE FOCUS ON THE 90TH PERCENTILE BECAUSE AVERAGES CAN HIDE PROBLEMS. THIS MEASURE TELLS US WHETHER DELAYS ARE HAPPENING FOR A MEANINGFUL NUMBER OF CALLERS, NOT JUST ON RARE OUTLIERS.**

- **THE 90TH PERCENTILE SHOWS HOW FAST WE ARE FOR NEARLY EVERYONE—NOT JUST ON A GOOD DAY.**

AVERAGE VS. 90TH PERCENTILE

WHAT THE MATH ACTUALLY MEASURES

- AVERAGE (MEAN)
  - CAN BE SKEWED BY A HIGH NUMBER OF VERY FAST OR VERY SLOW PROCESSING TIMES.
  - IN A PERFECT BELL CURVE, 50% OF THE CALLS WILL BE LONGER THAN THE STATED STANDARD, POTENTIALLY BURYING SLOWER TIMES IN THE DATA.
  - REPRESENTS A MATHEMATICAL CALCULATION, NOT NECESSARILY THE BROADER CALLER EXPERIENCE.
- 90TH PERCENTILE
  - IDENTIFIES THE TIME AT OR BELOW WHICH **90% OF CALLS ARE PROCESSED**
  - NO MORE THAN**10% OF CALLS CAN BE LONGER** THAN THE STATED STANDARD
  - EXPLICITLY INCLUDES SLOWER, HIGH-IMPACT CALLS

<u>KEY MATHEMATICAL DISTINCTION</u>

AN **AVERAGE** DESCRIBES A MATHEMATICAL BALANCE POINT.
A **PERCENTILE** DESCRIBES WHAT CALLERS ARE EXPERIENCING.

EXAMPLE: ECHO LEVEL CALLS

Determinant Code	25th percentile	50th percentile	75th Percentile	90th Percentile	Avg
Echo	0:00:48	0:01:04	0:01:29	0:02:04	0:01:15

What the Average Hides

- The average of **0:01:15** represents a *balance point* in the data, not a service guarantee
- By definition, **nearly 50%of the calls in this set are longer than the reported average** (compare to 50th percentile)
- The average can look compliant, but here up to 50% of the people would have waited longer than the "average" number we publish . . . *That's not a math problem; that's a public trust problem.*

What the 90th Percentile standard Guarantees (when met)

- **No more than 10%** of calls can exceed the stated standard.
- Performance reflects nearly **all callers**, not just the fastest ones

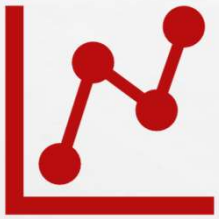
Bottom Line

Averages describe how the data behaves.
Percentiles describe how the community is served.

PROS AND CONS OF EACH MEASURE

Measure	Strengths	Limitations
Average	• Simple to calculate • Easy to explain	• Skewed by very fast or slow calls • Hides slow responses • ~50% of calls can exceed the stated value
90th Percentile	• Reflects real caller experience • Identifies excessive delays • Aligns with NFPA & CPSE standards	• More demanding standard • Requires robust data tracking

POLICY IMPLICATIONS



If we use averages:

We favor ease of reporting, not service consistency.

We normalize outliers

We unintentionally accept service inequity

If we use percentiles:

We measure reliability

We protect against disparity of services

We align with NFPA, CPSE, and ambulance contracts

CONFIRE'S PREVIOUS ACTION ON DISPATCH PROCESSING TIME STANDARDS

- 2020: Adopted **911 call pickup ≤10 seconds on 90% of calls**
- 2020: Adopted **call processing ≤90 seconds on 90% of High-Priority calls**
- 2022: Standards refined using **NFPA 1221 guidance**
  - Applied only to **time-sensitive incidents**
- 2024: Adopted new call processing standards using NFPA, NENA, and IEAD guidelines and developing call-type specific time goals.

<u>RESULTS</u>

- Pickup time goal has been **consistently met or exceeded**
- Call processing goal has been **challenging to achieve**

CONFIRE ADOPTED STANDARDS - EMS

911 Call Pickup Time		
Call Type	Percentage of Calls Answered in 10 seconds or less.	90th Percentile Goal
All 911 Calls	92%	0:00:10

EMS Call Processing		
Determinant Code	Current 90th Percentile Call Pickup to 1st unit Assigned (2025)	90th Percentile Goal
Echo	0:02:05	0:01:30
Delta	0:02:56	0:02:30
Charlie	0:03:31	0:02:30
Bravo**	0:03:45	0:03:00
Alpha*	0:04:11	0:03:00
Omega*	0:03:10	0:03:00
EMS No Determinant Code	0:02:27	0:02:00

*Not included in emergency calls for overall time calculations
**Partially included in emergency call time calculations

CONFIRE ADOPTED STANDARDS - FIRE

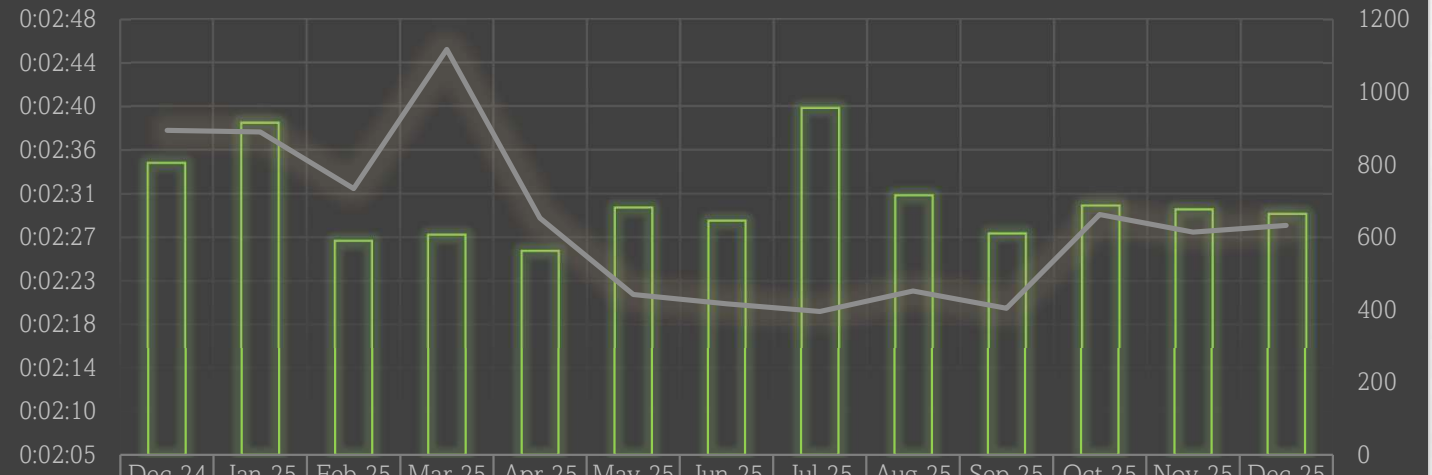
Fire/Rescue Call Processing		
Fire/Rescue Call Type	Current 90th Percentile Call Pickup to 1st unit Assigned	90th Percentile Goal
Structure Fires (Priority 10 calls)	0:03:04	0:02:30
Non-Structure Fires (Priority 2 calls)	0:03:05	0:02:30
Alarms/Investigations (Priority 3 calls)*	0:03:16	0:03:00

*Not included in emergency calls for overall time calculations

2025 PERFORMANCE

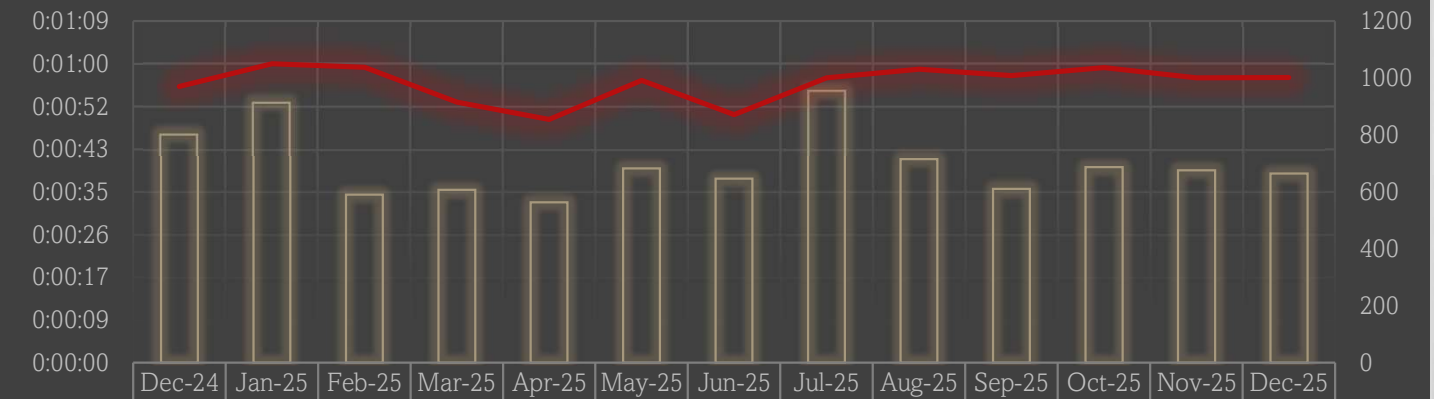
Determinant Code	25th percentile	50th percentile	75th Percentile	90th Percentile	Avg
Echo	0:00:48	0:01:04	0:01:29	0:02:04	0:01:15
Delta	0:00:56	0:01:25	0:02:07	0:02:54	0:01:39
Charlie	0:01:11	0:01:53	0:02:40	0:03:30	0:02:03
Bravo	0:01:51	0:02:19	0:02:56	0:03:43	0:02:28
Alpha	0:01:53	0:02:35	0:03:23	0:04:21	0:02:42
Omega	0:02:09	0:02:52	0:03:50	0:05:00	0:03:06
EMS No Determinant Code	0:01:06	0:01:34	0:02:16	0:03:14	0:02:11
Structure Fire	0:01:28	0:01:54	0:02:32	0:03:16	0:02:06
Non-Structure fire	0:01:20	0:01:47	0:02:26	0:03:15	0:02:00

Pickup to Queue Fire/Rescue Calls (90th Percentile, based on emergency fire calls only)



	Dec-24	Jan-25	Feb-25	Mar-25	Apr-25	May-25	Jun-25	Jul-25	Aug-25	Sep-25	Oct-25	Nov-25	Dec-25
Number of Calls Processed	804	914	590	607	563	682	646	955	715	610	687	676	664
Pickup to Queue Time	0:02:37	0:02:37	0:02:32	0:02:46	0:02:29	0:02:21	0:02:20	0:02:20	0:02:22	0:02:20	0:02:29	0:02:27	0:02:28

Queue to First Unit Assigned Fire/Rescue (90th Percentile, based on emergency fire calls only)



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Queue to 1st Assigned Time	0:00:56	0:01:00	0:01:00	0:00:53	0:00:49	0:00:57	0:00:50	0:00:58	0:00:59	0:00:58	0:01:00	0:00:58	0:00:58

- The 90th percentile time for a **human dispatch** only (queue to 1st assigned) is **0:01:12.**
- The 90th percentile time for **Auto Dispatch** from (queue to 1st assigned) **is 0:00:09**. About 62% of all emergency calls are already auto dispatched.
- Currently, the combined time (human and auto) for queue to 1st assigned is 0:00:36. This is because so many calls are already auto dispatched.
- If we went to ALL auto-dispatch, the overall reduction could be up to 27 seconds (Current 0:00:36 minus potential of 0:00:09)

	Echo	Delta	Charlie	Bravo	Alpha	Omega	No Determinant Code	Structure Fire	Non-Structure Fire	Alarm/Investigations
Total Calls	2175	25865	23369	7744	120	0	27054	1174	3757	0
Human Dispatched	351	4712	4238	1794	117	0	18463	1170	3755	0
% Human Dispatched	16.1%	18.2%	18.1%	23.2%	97.5%	0.0%	68.2%	99.7%	99.9%	0.0%

Problem	Total calls Human Dispatched	% of Total
SICK - Sick Person	5121	20%
UNKM - Unk Medical (Subj Down)	4973	19%
TU - TC with Unknown Injuries	4907	19%
FALL - Fall Victim	1564	6%
TUF - Frwy TC Unk Injuries	1441	6%
TRAUMA - Traumatic Injury	1377	5%
OD - Overdose	715	3%
SZ - Seizures	705	3%
HL - Hemorrhage/Laceration	549	2%
TP - Auto / Ped	530	2%
TI - TC with Injuries	458	2%
ABD - Abdominal Pain	431	2%
CP - Chest Pain	342	1%
HEART - Heart problems	334	1%
SOB - Shortness of Breath	300	1%
UNC - Unconscious Person	274	1%
HCE - Heat/Cold Exposure	190	1%
DIA - Diabetic Problem	175	1%
DIN - Device Impact Notif	158	1%
TE - TC with Extrication	154	1%

A LOOK BACK IN TIME

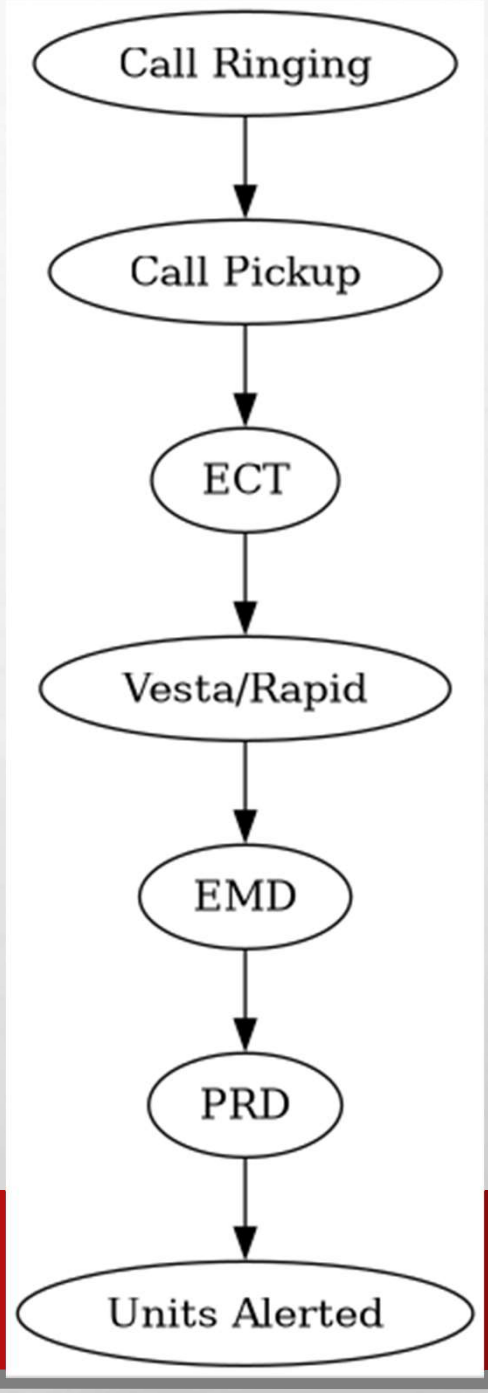
	2019	2020	2021	2022	2023	2024	2025
All Calls Processed	243803	246184	250978	252802	250968	257097	254090
EMS							
Emergency Calls Counted	166103	165605	172367	176526	172500	173476	171063
Emergency Call Processing Time	0:01:59	0:02:57	0:03:00	0:02:45	0:02:56	0:03:05	0:03:10
% Emergency Calls	68%	67%	69%	70%	69%	67%	67%
Fire	2019	2020	2021	2022	2023	2024	2025
Emergency Calls Counted	8131	9078	8620	8621	8722	8283	8309
Emergency Call Processing Time	0:02:31	0:02:40	0:02:46	0:02:59	0:03:14	0:03:05	0:03:05

REALITIES, CHALLENGES, AND RESEARCH FINDINGS

- NENA (2020):
  No scientific basis for existing time thresholds
- NFPA Fire Protection Research Foundation (2022):
  Most PSAPs **cannot meet NFPA processing benchmarks**
- Few agencies formally adopt them due to feasibility
- CONFIRE experience mirrors national findings:
- 2025 High-Priority Calls CONFIRE:
  3:11 at the 90th percentile

CALL PROCESSING WORKFLOW

- CALL RINGING INTO COMM CENTER
- CALL PICKUP
- EMERGENCY CALL TAKING SCREEN
- VESTA/RAPID/MAP
- EMD/PROQA
- PRIMARY RADIO DISPATCHER
- UNITS ALERTED



DEFINITIONS

- QUICK LAUNCH- HIGH-ACUITY EMS CALL TYPES
  - CPR
  - SOB
  - CHEST PAIN
  - CVA/STROKE
  - UNCONSCIOUS
  - TRAFFIC ACCIDENTS
- PRD- PRIMARY RADIO DISPATCHER
  - VERIFIES ADDRESS ON MAP, REVIEWS CALL-TYPE, AND RECOMMENDATIONS, MANUAL DISPATCH
- AVD- AUTOMATED VOICE DISPATCH
- AUTO DISPATCH- SKIPS MANUAL PRD AND DISPATCH IS AUTOMATED
  - PERTINENT INFO IS REVIEWED AFTER THE CALL IS DISPATCHED

CALL-TAKING VIDEO DEMONSTRATIONS

EMERGENCY MEDICAL DISPATCH

BENEFITS OF PRIORITY DISPATCH ACE ACCREDITATION

- HIGHEST STANDARD OF CARE – CONFIRMS TOP-LEVEL EMERGENCY DISPATCH PRACTICES
- IMPROVED QUALITY & SAFETY – REDUCES ERRORS AND IMPROVES PATIENT OUTCOMES
- ENHANCED REPUTATION & TRUST – BUILDS CREDIBILITY WITH PUBLIC AND STAKEHOLDERS
- CULTURE OF EXCELLENCE – ENCOURAGES TEAMWORK AND CONTINUOUS IMPROVEMENT
- COMPETITIVE ADVANTAGE – HELPS SECURE CONTRACTS AND FUNDING
- PROFESSIONAL DEVELOPMENT – ONGOING TRAINING AND CERTIFICATION FOR STAFF
- CAN OPERATE AN ECNS PROGRAM

IAED
ACE | ACCREDITED CENTER OF EXCELLENCE

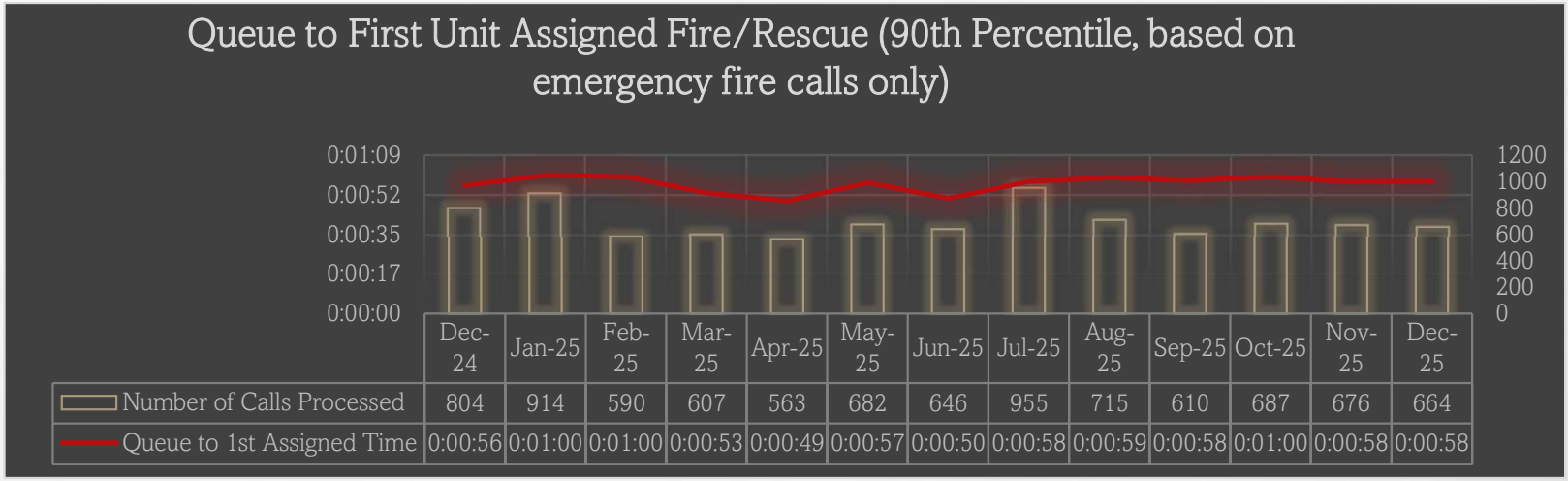
BENCHMARKING WITH OTHER AGENCIES

- WHEN COMPARING CONFIRE TO OTHER SIMILAR AGENCIES, NO AGENCY MEETS THE NFPA 1225 STANDARD
- WE HAVE FOUND THAT NO TWO AGENCIES REPORT CALL-PORCESSING IN THE SAME MANNER (HARD TO COMPARE APPLES TO APPLES)
- THE AGENCIES THAT DO NOT TRACK THEIR CALL-PORCESSING DATA, ARE USING FULL DETERMINANT ALONG WITH SOME LEVEL OF TIERED DISPATCH

MOVING FORWARD

- CONTINUE TO ALIGN CALL PROCESSING GOALS WITH:
  - CALL SEVERITY
  - PROCESSING COMPLEXITY
  - STAFFING, WORKLOAD, AND SURGE CONDITIONS.
  - EVIDENCE BASED, DATA DRIVEN OUTCOMES.
- MEASURE PERFORMANCE REGULARLY AND PROVIDE DISPATCHER FEEDBACK TO:
  - IMPROVE PROCESSES
  - IDENTIFY SYSTEMIC BARRIERS
  - ADJUST GOALS AS PERFORMANCE IMPROVES.

OPPORTUNITIES



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- AUTO-DISPATCH WITHOUT PRD- WILL CUT DOWN PROCESSING TIMES
  - CAN BE AGENCY SPECIFIC
  - TRIAL STUDY
- EMEREGCNY FIRE DISPATCH (EFD)- CAN PROVIDE CONSISTENCY IN TRIAGING FIRE AND EMERGENCY CALLS
- DEEM FCL & FSL AS NON-EMERGENCT FIRE CALLS, SIMILAR TO FIRE ALARMS AND NO LONGER INCLUDE THEM IN THE CALL-PROCESSING DATA

GROUP DISCUSSION TO PROVIDE ADDITIONAL RECOMMENDATIONS

ADMINISTRATIVE COMMITTEE TAKEAWAYS

- SUMMARY OF DIRECTION PROVIDED
- RECOMMENDATIONS
- NEXT STEPS
- BOARD OF DIRECTORS INFORMATION BRIEFING IN FEBRUARY

THANK YOU