

EMS Stat & Operations



Dashboards



Baltimore City Fire
Department

911 to 988 Diversion

Date

1/1/2022

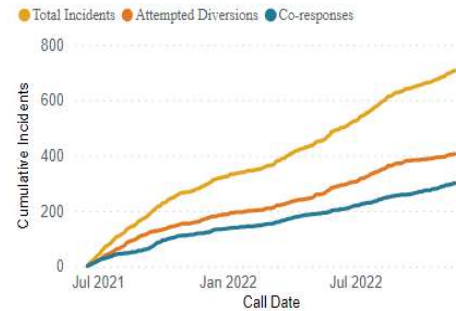
5/31/2022



Reset all filters to default display

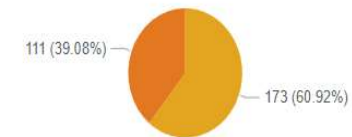
Total Incidents	707	Diversions Resolved by BCRI over Hotline	44
Days Since Pilot Started	698	Attempted Diversions to the 988 Helpline	406
Hours Saved Total	396	Callers Declined to Speak with BCRI	40
Hours Saved by BPD Units	141	988 Helpline Mobile Crisis Team Responses	71
Hours Saved by BCFD	255		

Cumulative Incidents Over Time



Diversions Resolved by BCRI Only and Diversions Returned to 911

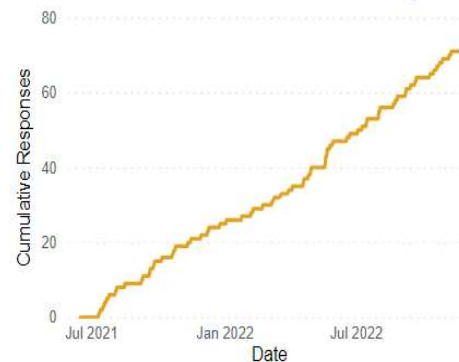
● Diversions resolved by BCRI only ● Diversions returned to 911



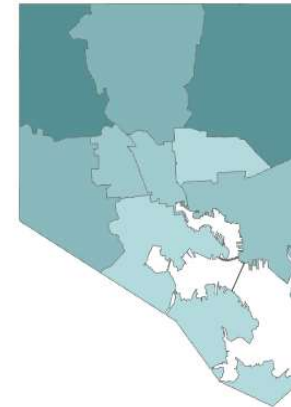
30-Day Rolling Percentage of Diversion Resolved by BCRI Only Without Police or Fire Response



Cumulative BCRI Mobile Crisis Team Responses



Total Diversions by Police District



Use these tabs to navigate between pages in this report

Designed by the [Mayor's Office of Performance & Innovation](#)

Community Metrics

Operational Metrics 1

Operational Metrics 2

911 to 988 Diversion

Clinical Metrics 1

Clinical Metrics 2

Information & Help

Advanced Features



Baltimore City Fire
Department

EMS Clinical Metrics 1



Reset all filters to default display

FILTERS

Date

1/1/2022

5/31/2022

Battalion/Division

All

Shift

All

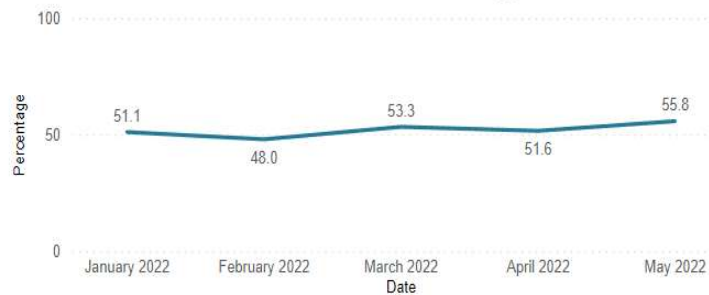
EMD CARD

All

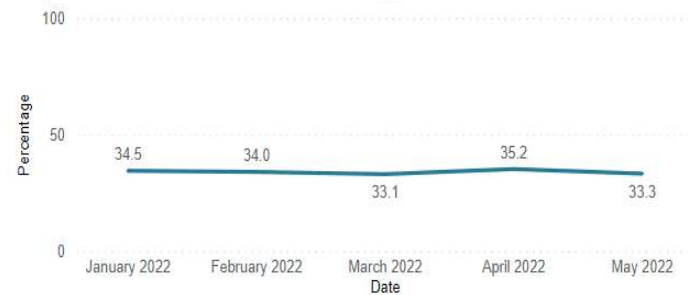
Unit

All

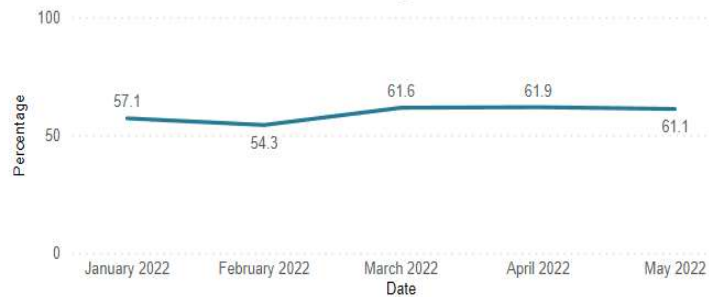
12 Lead <= 10 min of Patient Time For Chest Pain ?



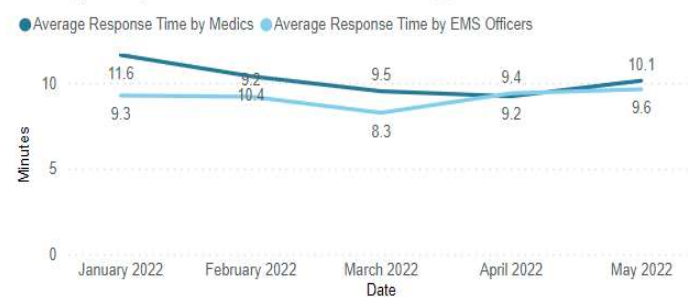
Aspirin Administered for Chest Pain ?



ETC02 Documented for Cardiac Arrest ?



Average Response Time to Cardiac Arrest ?



Use these tabs to navigate between pages in this report

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Community Metrics

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Advanced Features

Community Metrics



Baltimore City Fire
Department

EMS Community Metrics

Total Incidents

137K

Total Responses

249K

Responses to Overdoses

3741

FILTERS

Date

1/1/2022

12/31/2022

Battalion/Division

All

Shift

All

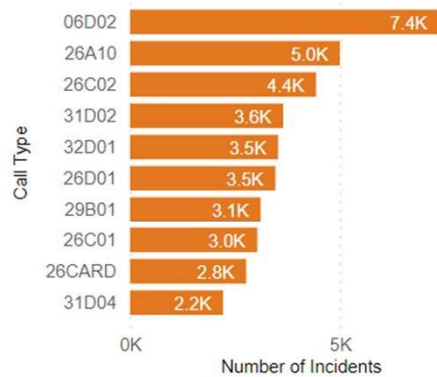
EMD Card

All

Unit

All

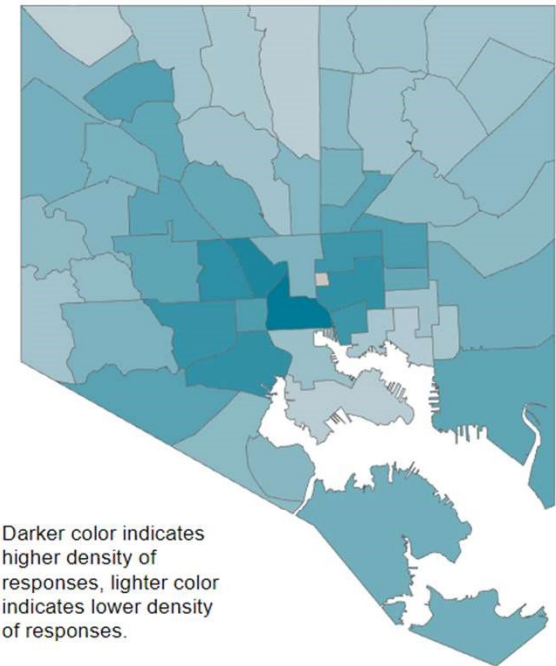
Top 10 Call Types i



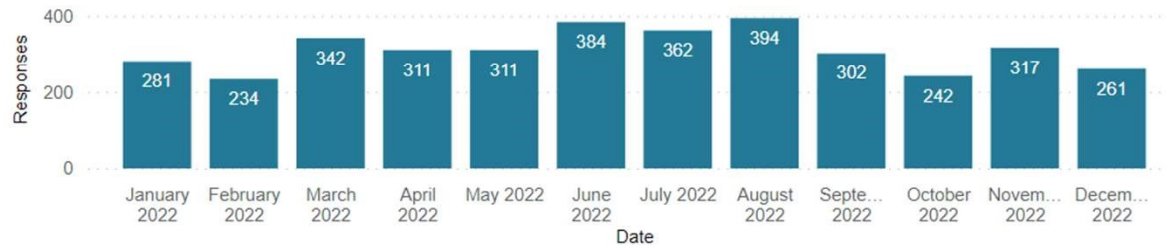
Map Values - Responses to Community

Community	Responses	Per Capita Response
Downtown/Seton Hill	9916	1,050
Upton/Druid Heights	8127	912
Sandtown-Winchester/Harlem Park	8707	827
Oldtown/Middle East	7988	799
Washington Village/Pigtown	4143	799
Southwest Baltimore	10236	777
Harbor East/Little Italy	3751	747
Greenmount East	5174	744
Clifton-Berea	5111	675
Poppleton/The Terraces/Hollins Market	3120	660

Responses to Community

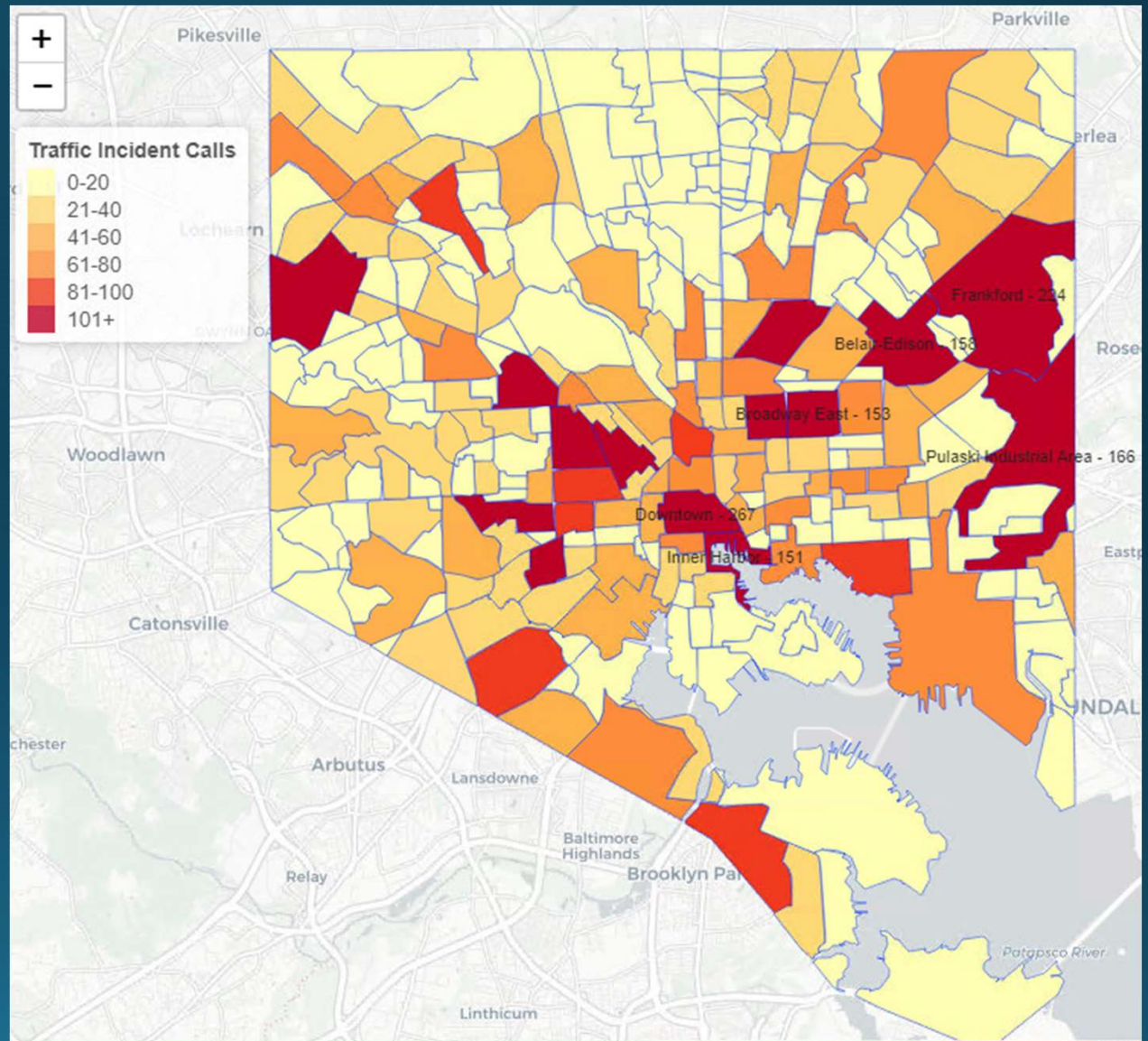


Responses to Overdose ?



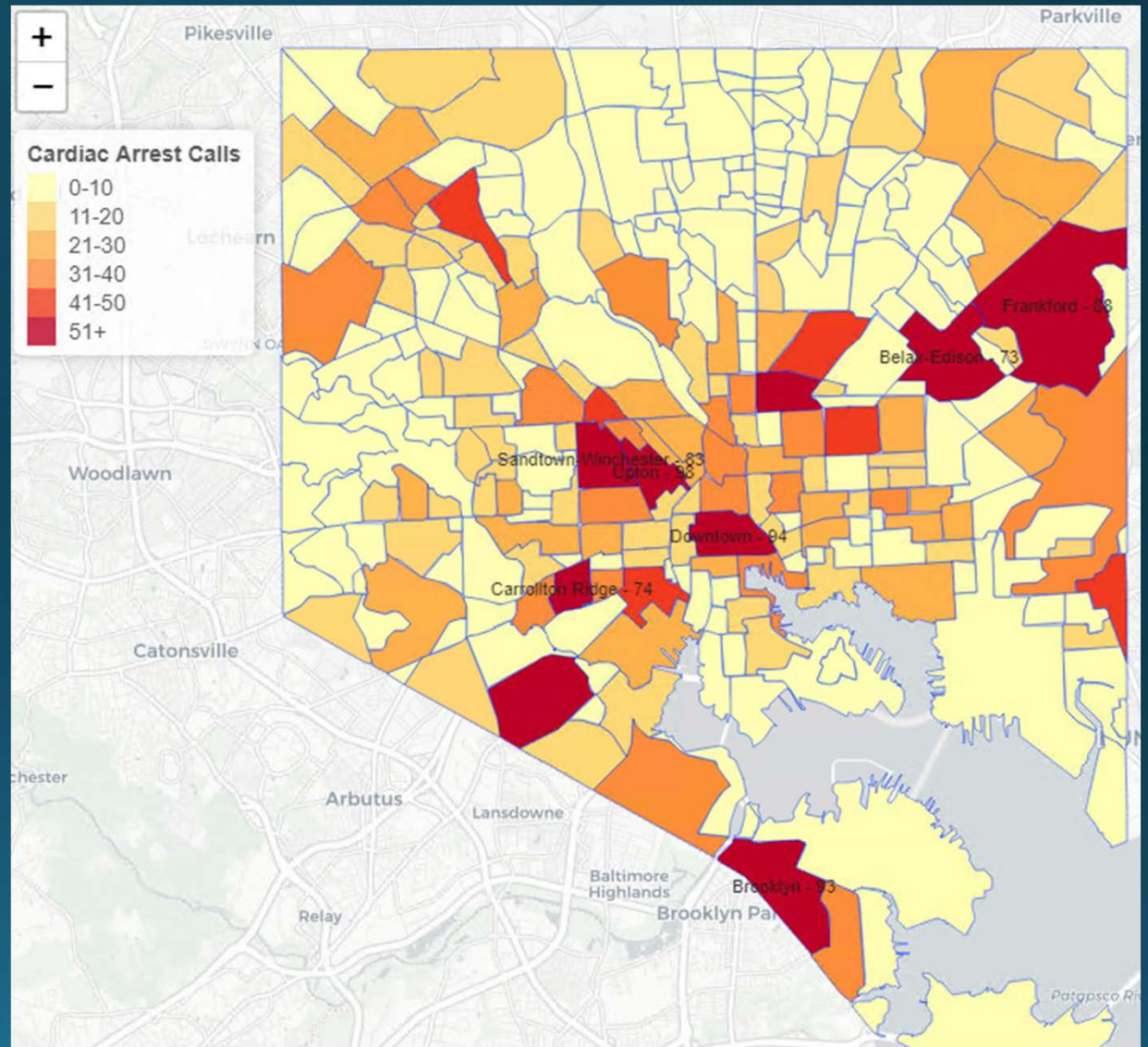
CY 2022 Traffic Incidents

Neighborhood	Incidents
Downtown	267
Frankford	224
Pulaski Industrial Area	166
Belair-Edison	158
Broadway East	153
Inner Harbor	151
Oliver	127
Howard Park	123
Upton	117
Sandtown-Winchester	115



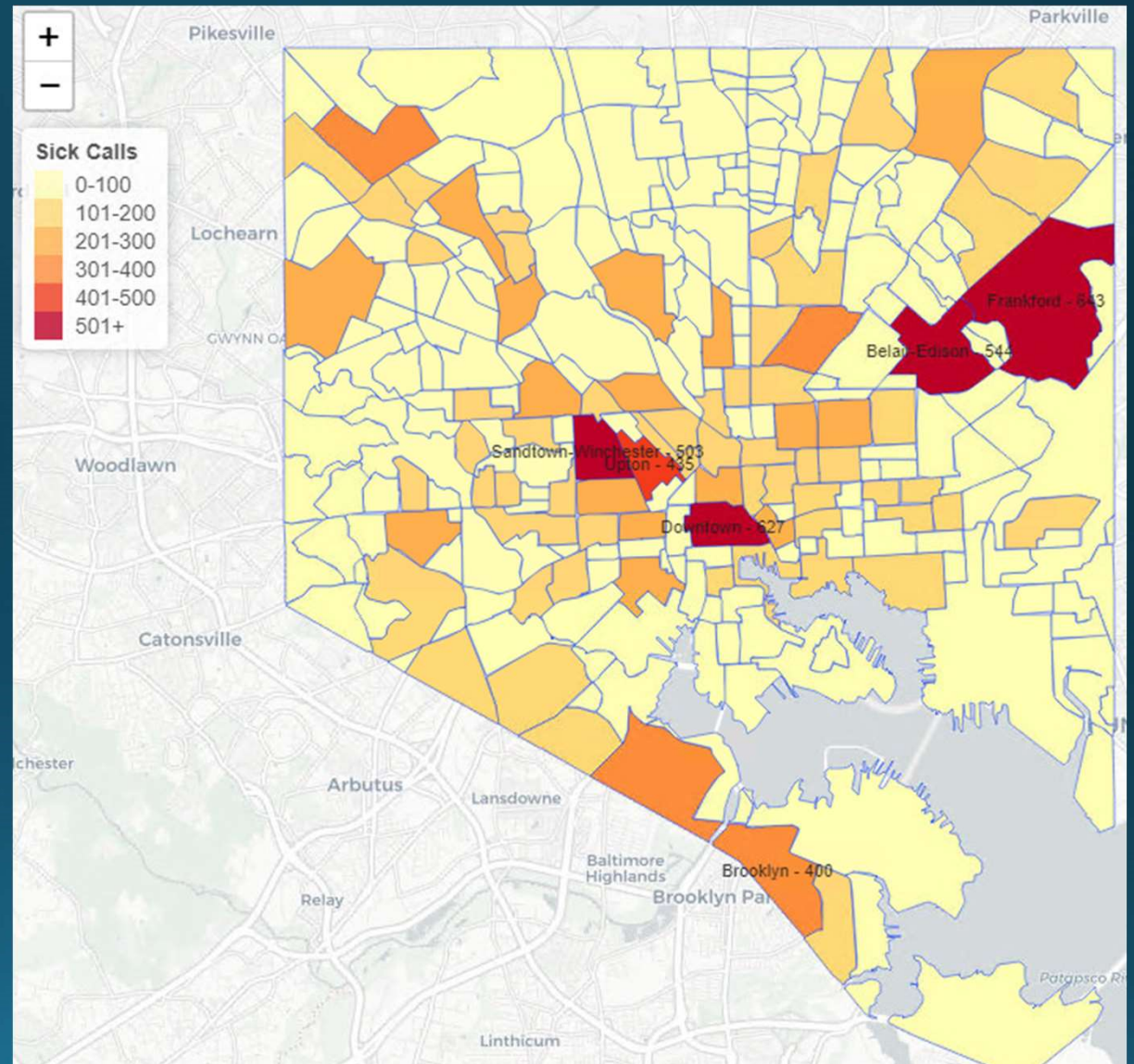
CY 2022 Cardiac Arrest

Neighborhood	Incidents
Upton	98
Downtown	94
Brooklyn	93
Frankford	88
Sandtown-Winchester	83
Carrollton Ridge	74
Belair-Edison	73
Morrell Park	72
East Baltimore Midway	59
Central Park Heights	50



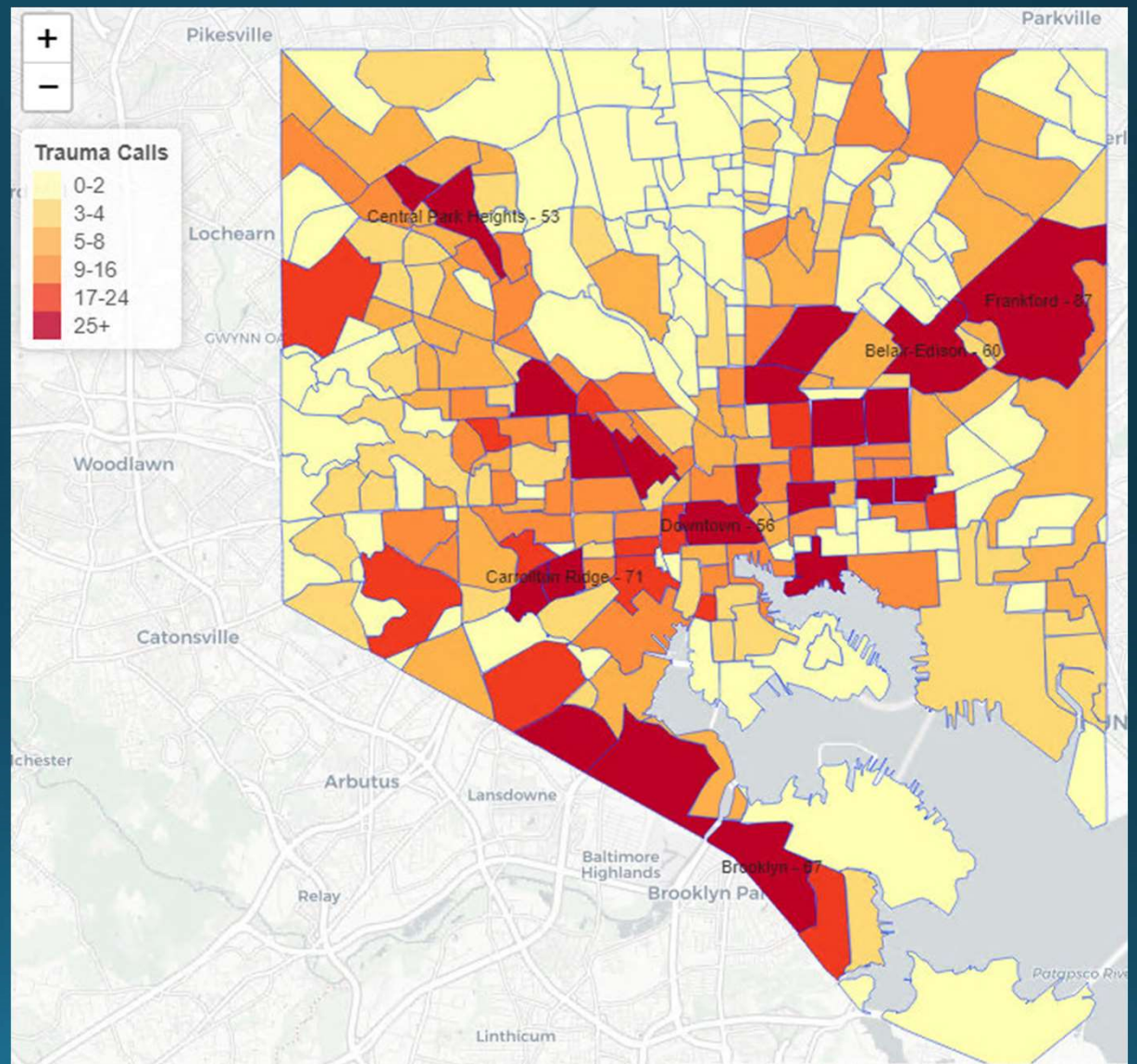
CY 2022 Sick Cases

Neighborhood	Incidents
Frankford	643
Downtown	627
Belair-Edison	544
Sandtown-Winchester	503
Upton	435
Brooklyn	400
Coldstream Homestead	
Montebello	331
Glen	323
Cherry Hill	301
Central Park Heights	282



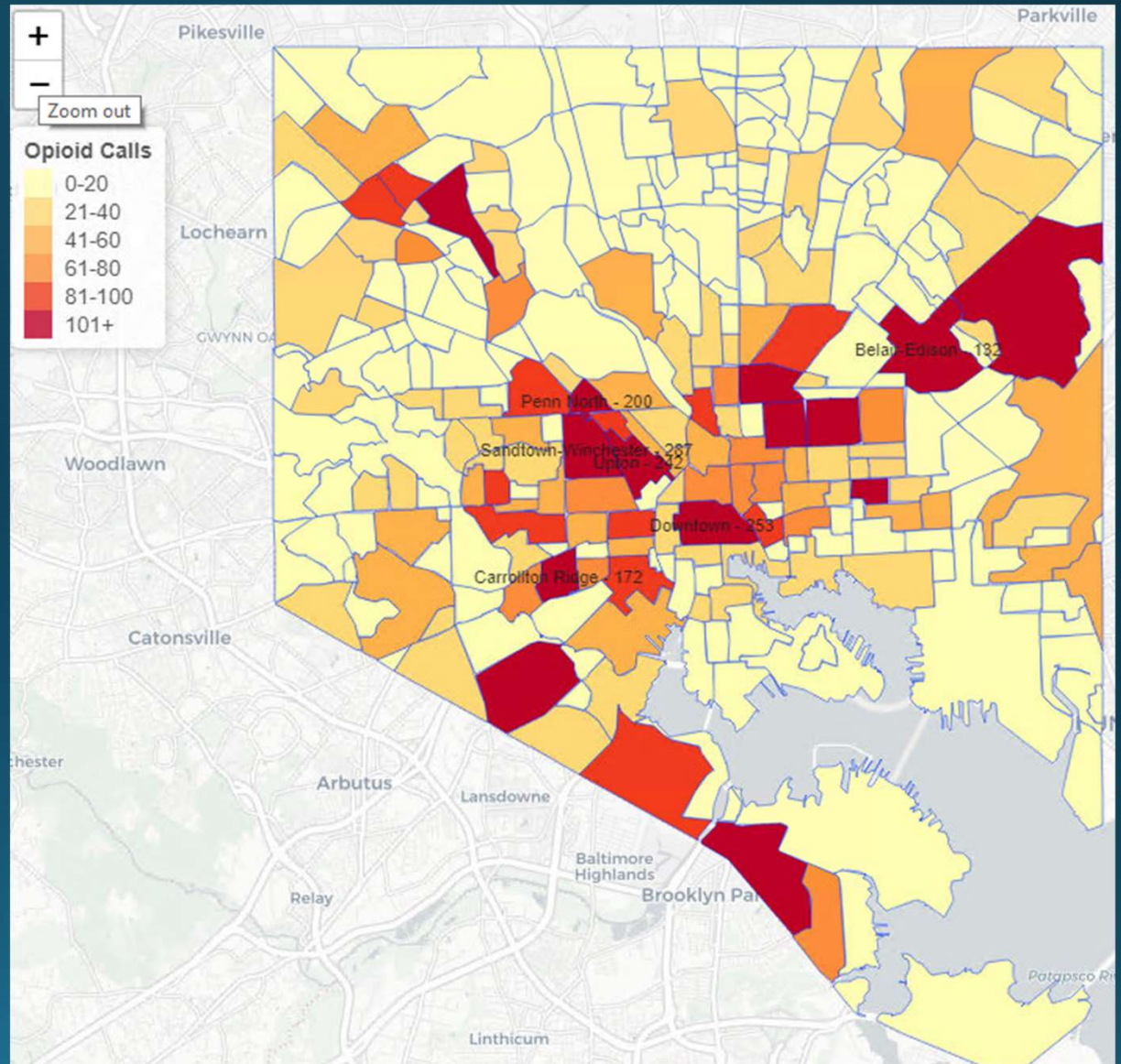
CY 2022 Trauma

Neighborhood	Incidents
Frankford	87
Carrollton Ridge	71
Brooklyn	67
Belair-Edison	60
Downtown	56
Central Park Heights	53
Upton	39
Broadway East	38
McElderry Park	36
Berea	34



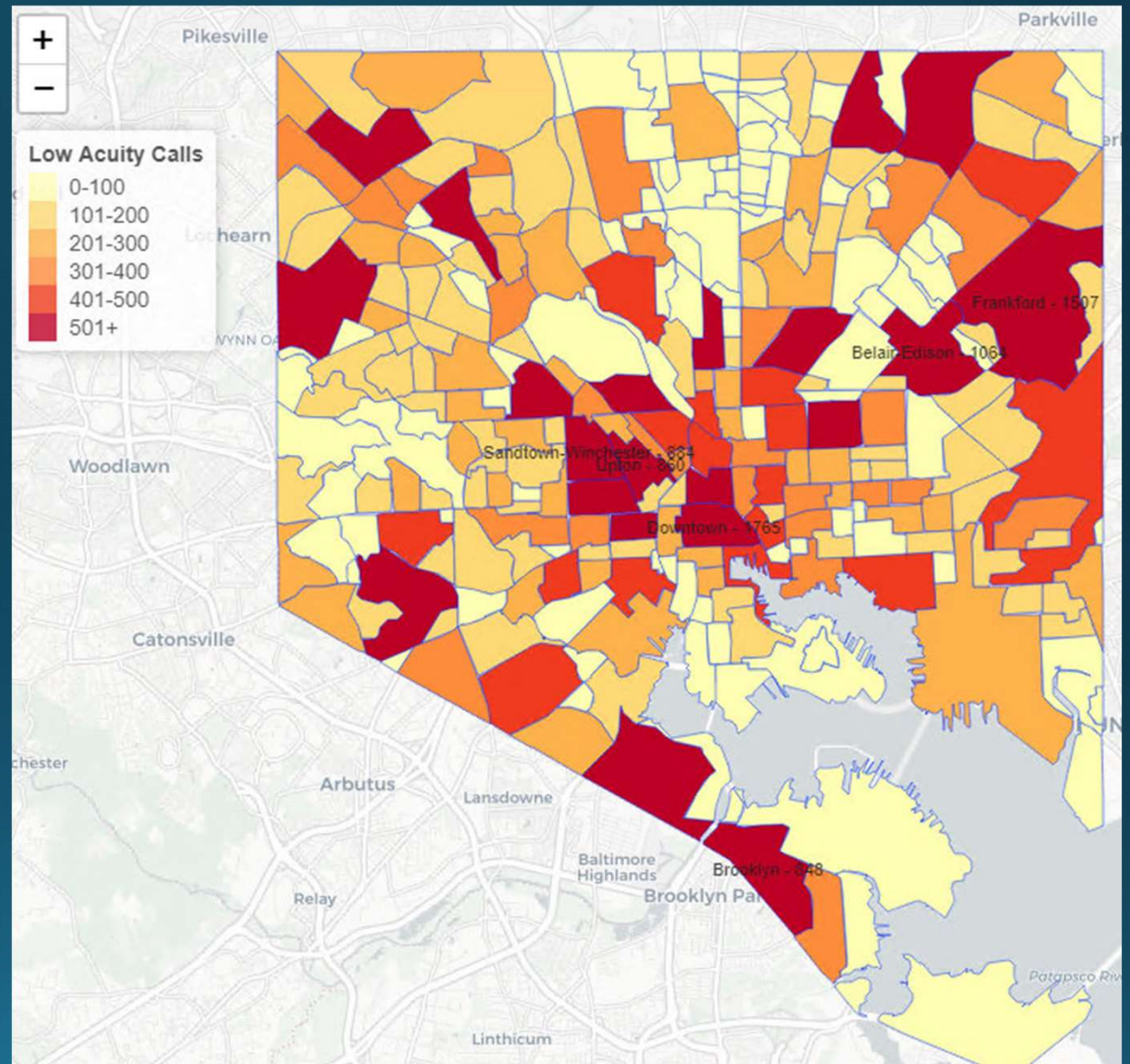
CY 2022 Opioid

Neighborhood	Incidents
Sandtown-Winchester	287
Downtown	253
Upton	242
Penn North	200
Carrollton Ridge	172
Belair-Edison	132
Central Park Heights	131
Frankford	128
East Baltimore Midway	127
Brooklyn	124



CY 2022 Low Acuity

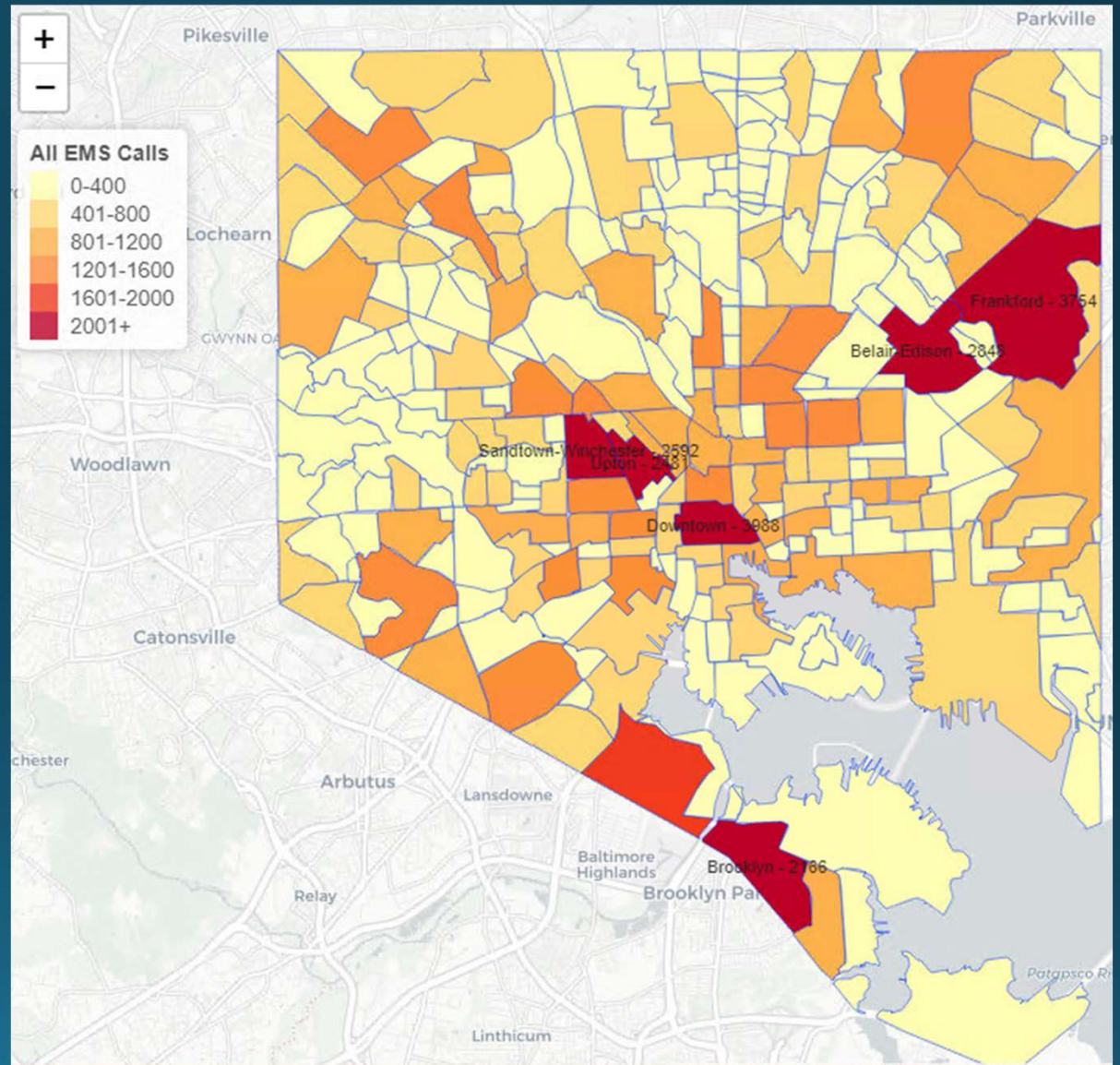
Neighborhood	Incidents
Downtown	1765
Frankford	1507
Belair-Edison	1064
Sandtown-Winchester	884
Upton	860
Brooklyn	848
Glen	721
Cherry Hill	639
Coldstream Homestead	607
Montebello	607
Central Park Heights	600



CY 2022

All EMS Incidents

Neighborhood	Incidents
Downtown	3988
Frankford	3754
Belair-Edison	2848
Sandtown-Winchester	2592
Upton	2481
Brooklyn	2166
Cherry Hill	1713
Central Park Heights	1580
Broadway East	1546
Coldstream Homestead	
Montebello	1516



Operational Metrics

Most frequent ALS calls for service CY 2022 - TOP 5

o6Do2 (Difficulty speaking
between breaths)

7514 Incidents

(2021 = 7986)

31Do2 (Overdose
Unconscious)

3960 Incidents

(2021 = 4353)

31Do4 (Overdose
Changing Color)

2381 Incidents

(2021 = 1427)

1oDo2 (Chest Pain with
Difficulty Speaking
between Breaths)

2221 Incidents

(2021 = 1182)

o6Do1 (Breathing
problems, not alert)

1985 Incidents

(2021 = 2021)

Most frequent BLS calls for service CY 2022 - TOP 5

26A10 (Unwell / Ill)

5193 Incidents

(2021 = 2742)

26C02 (Sick ABD Breath)

4551 Incidents

(2021 = 2515)

29B01 (Vehicle Accident)

4250 Incidents

(2021 = 2584)

32D01 (Unknown
Problem)

3800 Incidents

(2021 = 2931)

26D01 (Sick Not Alert)

3582 Incidents

(2021 = 2040)

Call Volume

Calendar Year 2022

Incidents (Unique CAD Call IDs)		Responses - EMS Units						
DISCIPLINE	Count of CALL_NO	DISCIPLINE	Ambo	Battalion Chief	EMS Officer	Medic	Total	
EMS	160886	EMS	39993	516	10852	111954	163315	
SUPPRESSION	43920	SUPPRESSION	309	54	291	3330	3984	
Total	204806	Total	40302	570	11143	115284	167299	
All Unit Responses to Incidents		Responses - Suppression Units						
DISCIPLINE	Count of CALL_NO	DISCIPLINE	Battalion Chief	Engine	Rescue	Squad	Tower	Truck
EMS	277275	EMS	574	71989	2329	4561	1985	29761
SUPPRESSION	68755	SUPPRESSION	4635	36051	1467	2906	1317	16755
Total	346030	Total	5209	108040	3796	7467	3302	46516



Baltimore City Fire
Department

EMS Operational Metrics 1



Reset all filters to default display

Total Transports	Total Responses	Average Response Time to Time Sensitive Calls (mins)
79K	249K	9.62

FILTERS

Date

1/1/2022

12/31/2022

Battalion/Division

All

Shift

All

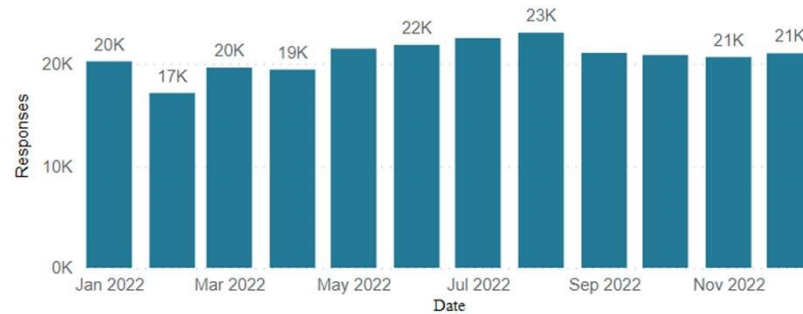
EMD Card

All

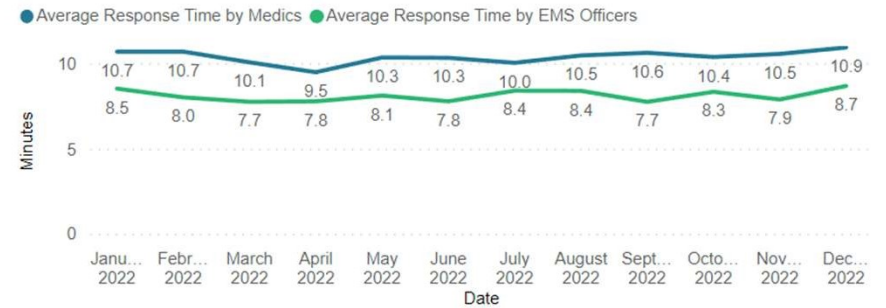
Unit

All

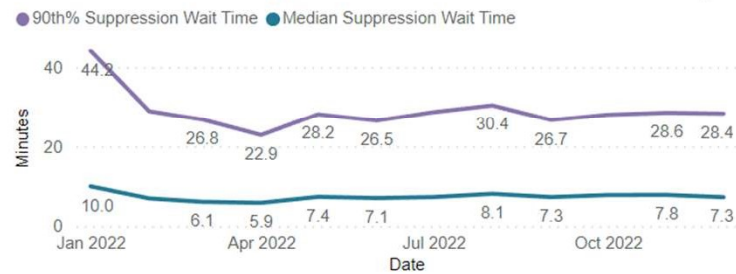
Total Responses ?



Average Response Time (Minutes) to Time Sensitive Calls by EMS ? i



Median and 90th% Suppression Wait Time (Minutes) ? i





Baltimore City Fire
Department

EMS Operational Metrics 2



Reset all filters to default display

Total Transports

79K

Total Responses

249K

Average Response Time
to Time Sensitive Calls
(mins)

9.62

FILTERS

Hospital

All

Date

1/1/2022

12/31/2022

Battalion/Division

All

Shift

All

EMD Card

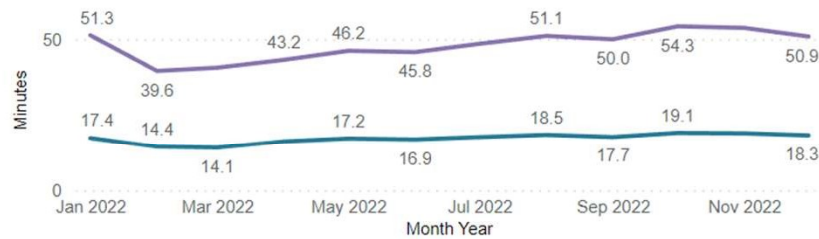
All

Unit

All

Median and 90th% Offload Time (Minutes) 30-Day Rolling Average

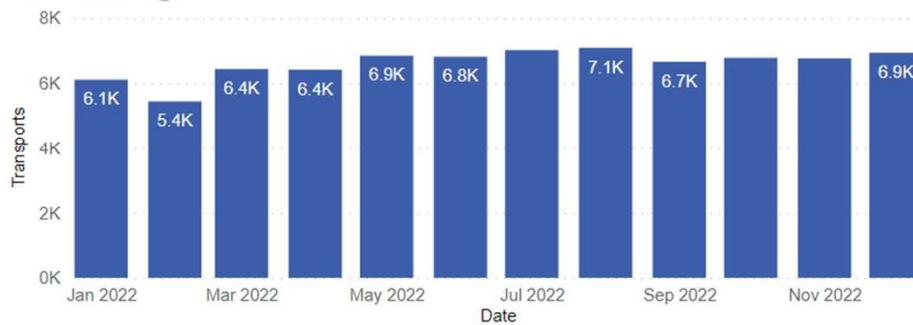
90th% Offload Time Rolling 30-Day Average Median Offload Time Rolling 30-Day Average



Alternative Destination by Location Name



Transports



Median and 90th Percentile Drop Time (Minutes)

90th% Drop Time Median Drop Time



EMS Call Volume CY 2022

Average calls for service: Daily, weekly and monthly

- Daily – 441 Incidents (2021 = 465)
- Weekly – 3036 Incidents (2021 = 3,202)
- Monthly – 13,407 Incidents (2021 = 14,142)

Peak call volume: Time of day, day of the week, time of the month

- Time of Day – 12:00-17:59
- Day of Week – Monday
- Time of Month – End of month
- Month of Year - August

EMS Call Volume

CY 2022 Average calls for service: Daily, weekly and monthly

- Daily – 441 Incidents
- Weekly – 3,036 Incidents
- Monthly – 13,407 Incidents
- Year – 160,886 Incidents

CY 2021 Average calls for service: Daily, weekly and monthly

- Daily – 465 Incidents
- Weekly – 3,202 Incidents
- Monthly – 14,142 Incidents
- Year – 169,700 Incidents

CY 2020 Average calls for service: Daily, weekly and monthly

- Daily – 438 Incidents
- Weekly – 3,027 Incidents
- Monthly – 13,368 Incidents
- Year – 160,411 Incidents

EMS Call Volume CY 2022

Incidents by HOD and DOW

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
MONDAY	833	724	641	542	512	559	657	832	1135	1295	1330	1486	1440	1421	1434	1470	1533	1376	1382	1311	1243	1210	1042	910
TUESDAY	785	667	610	533	524	524	609	902	1121	1320	1444	1464	1406	1443	1473	1412	1472	1378	1377	1329	1224	1146	989	881
WEDNESDAY	731	656	609	463	462	492	589	789	1063	1269	1363	1400	1470	1462	1445	1449	1484	1378	1364	1309	1310	1142	974	840
THURSDAY	794	680	585	487	460	502	657	846	1064	1231	1381	1390	1490	1458	1382	1464	1425	1382	1401	1320	1326	1173	961	855
FRIDAY	796	702	647	548	490	521	580	806	1043	1252	1355	1419	1439	1509	1442	1442	1408	1441	1398	1369	1293	1255	1097	984
SATURDAY	973	922	796	681	584	544	592	759	880	1039	1170	1278	1278	1236	1280	1387	1398	1363	1381	1407	1349	1303	1181	1098
SUNDAY	959	929	836	692	562	550	559	695	849	980	1100	1246	1264	1267	1186	1336	1286	1326	1241	1291	1238	1168	996	1016

**EMS Unit
Response Time
on EMS Calls for
Service
CY 2022**

Transport Unit Median – 8:45
90th Percentile = 17:37

Medic Median – 8:39
90th Percentile = 17:39

Ambo Median – 9:00
90th Percentile = 17:34

Fire Suppression Response Time to EMS Calls for Service CY 2022

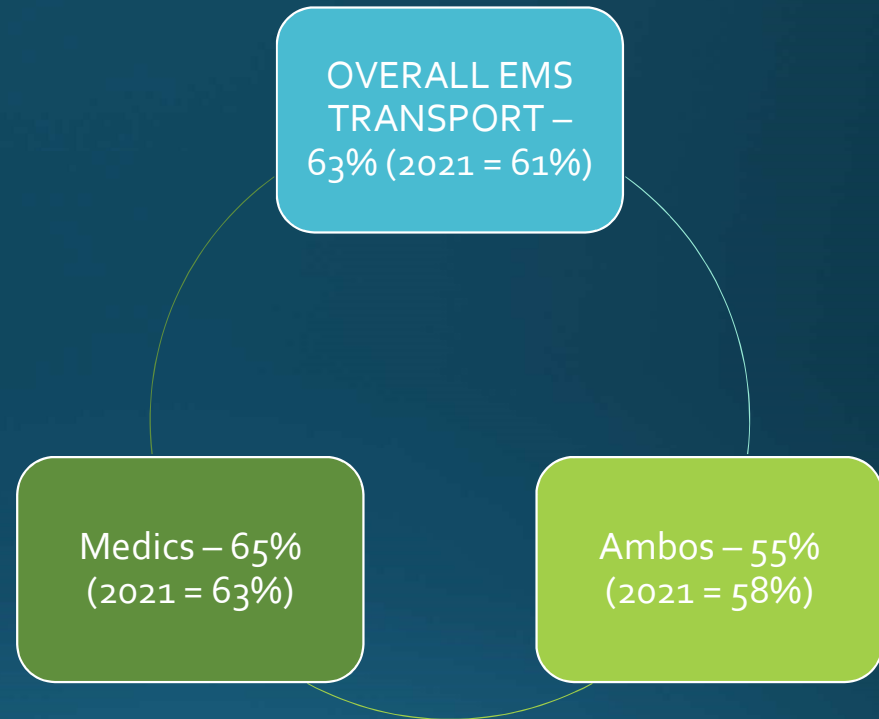
Median Suppression Response Time to EMS Calls:
5 Minutes and 50 Seconds (90th Percentile = 9:29)

- *Definition: the difference in time between the first arriving suppression unit's time of dispatch and time of arrival on the scene*

Median Wait Time for EMS Arrival - 7 Minutes and
49 Seconds (90th Percentile = 29:31)

- *Definition: the difference in time between the first arriving suppression unit's time of arrival and the time of arrival of the first EMS transport unit*

EMS Fleet Utilization (UHU) CY 2022

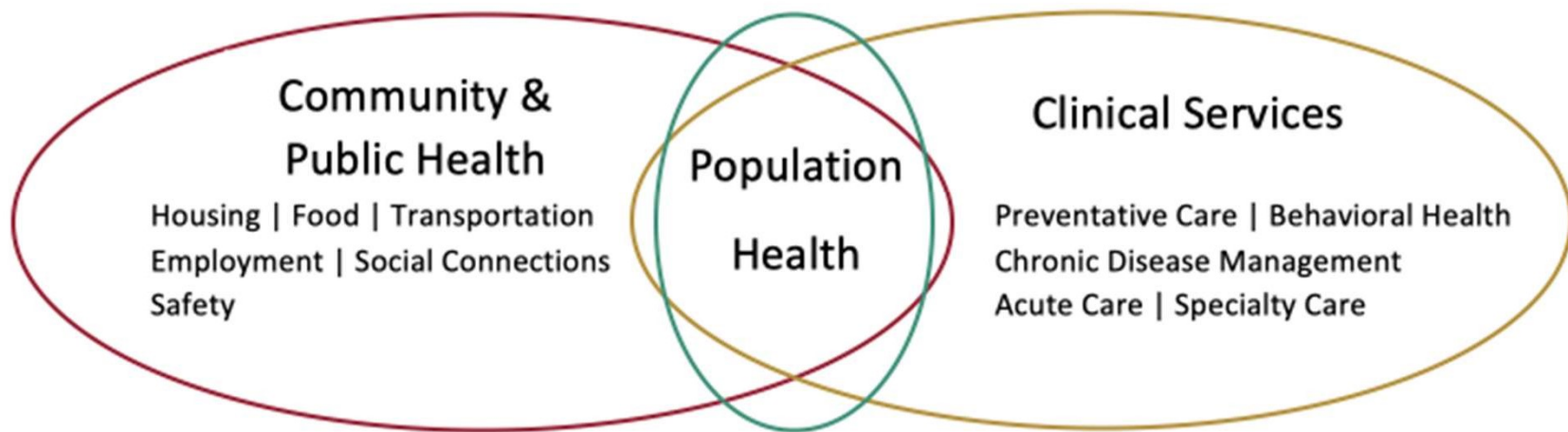


- ***Definition: the % of time in which a unit is assigned on an incident, represented as the median across all units***



Baltimore City Fire Department

Clinical Metrics and Population Health



**POSITIVE IMPACT
ON SDOH**



**REDUCED EMS
CALL VOLUME**



**BETTER PATIENT
OUTCOMES**



**IMPROVED
RESPONSE TIMES**

Mitigation Strategies and Population Health

- ED offload pathways (UMMC, Lifebridge, JHH-B, JHH-M, St Agnes)
- Tele911: Awaiting BOE approval
- Nurse triage
- Dispatch reform

Dispatch Reform



	Incident EMD Card	Total Incident EMD Card	Unstable High Heart Rate	Unstable High Heart Rate %	Stable High Heart Rate	Stable High Heart Rate %	Unstable Low Heart Rate	Unstable Low Heart Rate %	S
86	06D02	23897	4537	19	19360	81	1493	6.2	
591	26C02	13333	1675	12.6	11658	87.4	864	6.5	
586	26A10	12462	1018	8.2	11444	91.8	761	6.1	
594	26D01	9833	1301	13.2	8532	86.8	932	9.5	
590	26C01	9460	1152	12.2	8308	87.8	974	10.3	
881	31D02	8480	1291	15.2	7189	84.8	1050	12.4	
175	10D02	7388	964	13	6424	87	535	7.2	
577	26A01	7363	534	7.3	6829	92.7	424	5.8	
0	01A01	5955	464	7.8	5491	92.2	500	8.4	
82	06D01	5757	1260	21.9	4497	78.1	576	10	
173	10C03	5666	467	8.2	5199	91.8	455	8	
177	10D04	5583	661	11.8	4922	88.2	387	6.9	
882	31D03	5141	591	11.5	4550	88.5	596	11.6	
74	06C01	4949	597	12.1	4352	87.9	350	7.1	
163	9.00E+01	4360	1367	31.4	2993	68.6	2070	47.5	

- Analysis of three years of data
- Classifying determinants with low risk of complication / decompensation
- Establish safe threshold for call holding

Planning

**Dispatch reform
Nurse Triage Line
Alternative Transport
Medically Informed
Dispatch
Tele911**

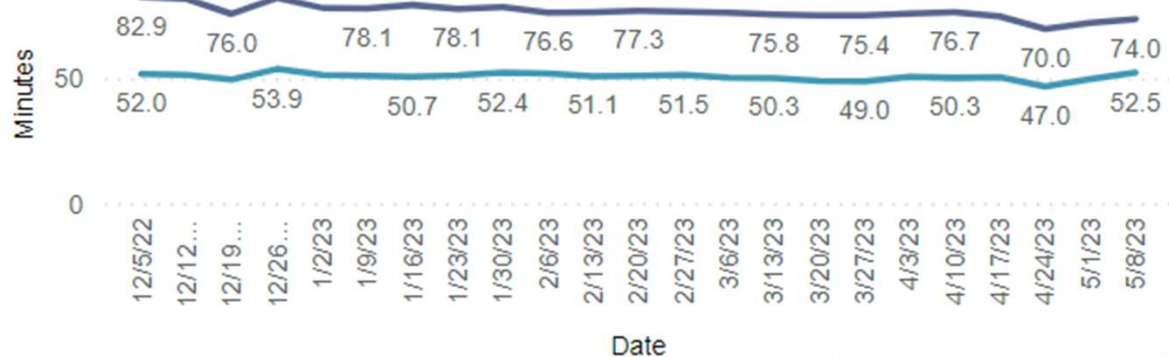
Implemented/ongoing

**Alternative destination
911 Behavioral Health
MIH- CP
Population Health**

Offload Delay Updates

Median and 90th Percentile Drop Time (↑ ↓ ↕ ? ⓘ ⌵ ...)

● 90th% Drop Time ● Median Drop Time



Scheduled Visits



- Operations Center scheduled
- High Utilizers
- Field referrals- Special reports or Elite referral system- later
- Vulnerable adults- Follow up- DSS
- Initial-Follow Up- Discharge visits
- Vaccinations- 1022

Roving Units



- **Self dispatch**-Not limited by call determinants as a support unit
- **Overdoses**- immediate contact with P.E.P.- Mobile Crisis unit- 988-Leave behind- Buprenorphine
- **Behavioral emergencies**- Mobile Crisis Unit- 988
- **Substance abuse**
- **Clinician Referral** - Patients who EMS clinicians feel would benefit from a Social Determinates of Health screening
- **High utilizer addresses**- First watch alerts- CAD surveillance

Roving Units



- **Alternative destination- Stabilization Center-** patients that would benefit from treatment at these sites
- **Areas of high incidents-** Heat Map
- **Patient assist-** SDOH screening (all patients)
- **Elderly population- Falls- Sick Case- Etc.**
- **Assaults-** Victim Support- Family and Community Support
- **Trauma Informed Care Resources-** not only to patients

CP1- Population Health Awareness

On Scene in the community training while the mobile unit is roving and after incidents.

Resources shouldn't be limited to only the patient, but should also include family, friends, bystanders, and the community. = Population Health

- Leave behind kits- increase
- Hands only CPR
- Informational resource handouts
- Bystander or family education
- Focus on heat map
- Increase efforts at beginning of the month
- Stop the Bleed training
- Not limited to age groups



High Utilizer

- 5 or more Incidents in a 90 Day Period
- January- March 2023 1504 Incidents
- Involving 203 high utilizers
-
- 60 Called 10 or more times
- We will have the ability to contact via phone and in-person

High Utilizer Data

3 Month High Utilizer Summary- High Utilizer = 5 or more Incidents in 3 Months		January 1-March 31	
Total EMS Incidents-January-March 2023		37755	
Total Responses for High Utilizers-		1504	
Percentage- High Utilizer Totals- EMS Total Incidents- January-March		0.04%	
Total Number of High Utilizers-		203	
Incident Breakdown		Per High Utilizer	Totals
5-10 Incidents		176	1057
11-20 Incidents		21	277
21-29 Incidents		4	100
30 or More Incidents		2	70
		203	1504

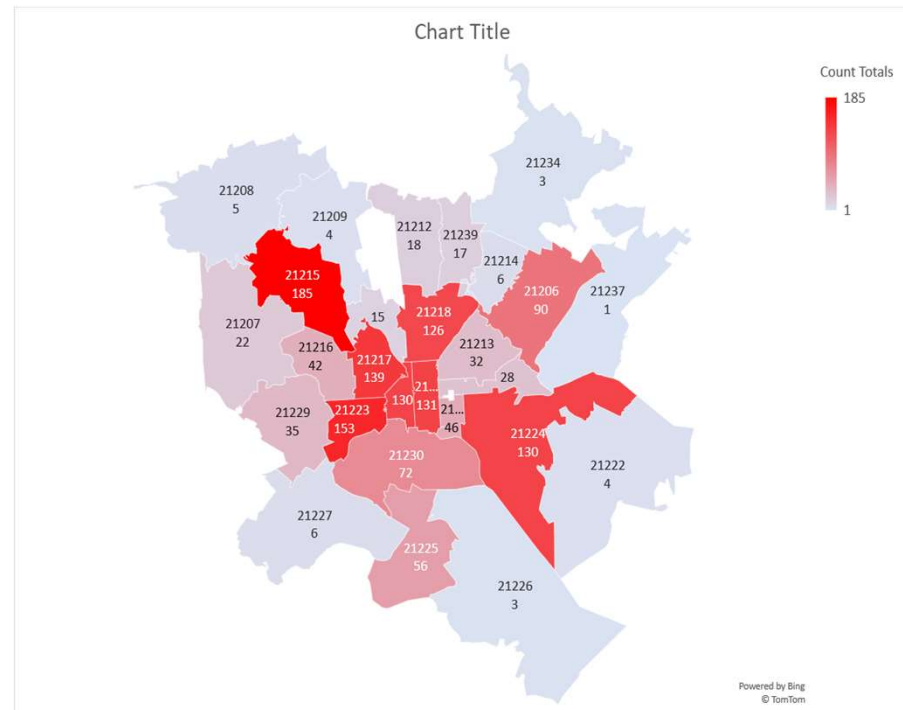
High Utilizer- Primary Impression

Primary Impression	Count Total
Pain (General)	216
ETOH Abuse w/ Intoxication	118
General Malaise/Sick	108
Chest Pain/Discomfort	104
Behavioral/Psychiatric Disorder	100
ETOH Use (Alcohol)	75
Abdominal Pain/Problems	65
No Apparent Illness/Injury [Unknown]	58
Suspected Opioid Overdose	47
Poisoning / Overdose / Drug Abuse	46
Respiratory Distress	41
Asthma	41
Back Pain (Non-Traumatic)	38
COPD (Emphysema/Chronic Bronchitis)	32
Seizure - Resolved	30
Traumatic Injury	30
Weakness	29
Diabetic Hypoglycemia	26
Nausea and vomiting	26
Not Applicable	25
Flu-like Illness	23
Altered Level of Consciousness/Mental Status	22
Illness, unspecified	21
Diabetic Hyperglycemia	20
Seizure	19
Hypertension	17
Headache	14
Dizziness / Vertigo	11

Primary Impression	Count Total
Withdrawal ETOH	8
(blank)	7
GI Problem	7
CHF (Congestive Heart Failure)	6
Diarrhea	6
Epistaxis (Non-Traumatic)	5
Syncope / Fainting	5
Other Cardiovascular Problem	5
Other Endocrine/Metabolic Problem	5
Unconscious, Unknown Reason	4
Hypothermia	4
Allergic Reaction	3
Sepsis	3
End Stage Renal Disease	3
Other Genital Problem [Hxt GU]	3
Stroke/CVA	3
Cardiac Rhythm Disturbance	3
Other CNS Problem	3
Chest Pain - STEMI (Suspected)	3
Other Urinary Problem	2
Abuse / Neglect	2
Respiratory arrest	2
OB/Gyn - Vaginal Hemorrhage	1
Patient Assist Only/Reduced Mobility	1
Bowel Obstruction	1
Sexual Assault/Rape	1
G.I. Bleed	1
Hypovolemia/Shock	1
Abdominal Aortic Aneurysm	1
Migraine	1
Fever	1
Seizure - Status	1

High Utilizer Incidents- Zip Code= Heat Maps

Zip Code of Incident Location	Count Totals
21215	185
21223	153
21217	139
21202	131
21224	130
21201	130
21218	126
21206	90
21230	72
21225	56
21231	46
21216	42
21229	35
21213	32
21205	28
21207	22
21212	18
21239	17
21211	15
21227	6
21214	6
21208	5
21251	5
21209	4
21222	4
21234	3
21226	3
21237	1



Future- Mobile Unit- Operations/Support Center



- Needle exchange program
- Telemedicine- pilot then expand to all units
- Buprenorphine
- Outside entities on unit- peer support- mobile crisis team-BPD-BCHD-BCRI
- Billing- Community Paramedic Services- ET₃

Behavioral Health Diversion



Baltimore City Fire
Department

911 to 988 Diversion

Total Incidents

162



Days Since Pilot Started

698

Hours Saved Total

483



Hours Saved by BPD Units

172



Hours Saved by BCDF

311



Diversions Resolved by
BCRI over Hotline

7

Attempted Diversions to the
988 Helpline

95

Callers Declined to Speak
with BCRI

16

988 Helpline Mobile
Crisis Team Responses

13



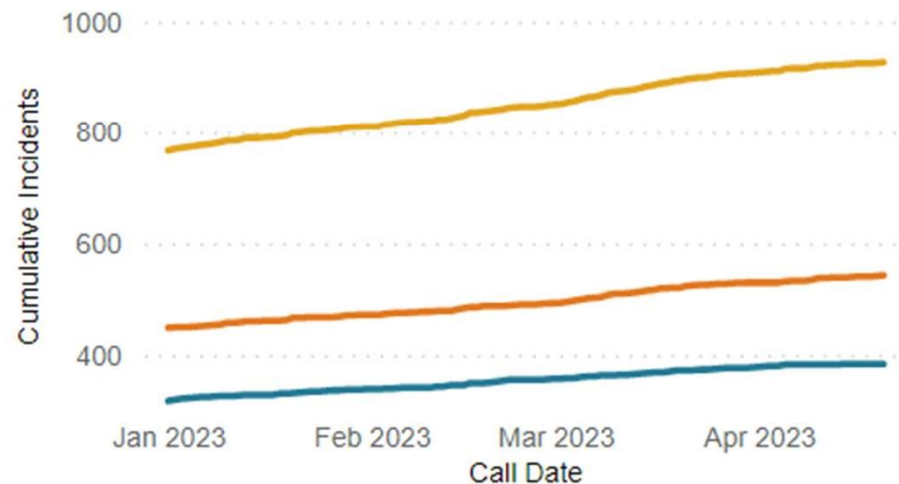
Date

1/1/2023

5/12/2023

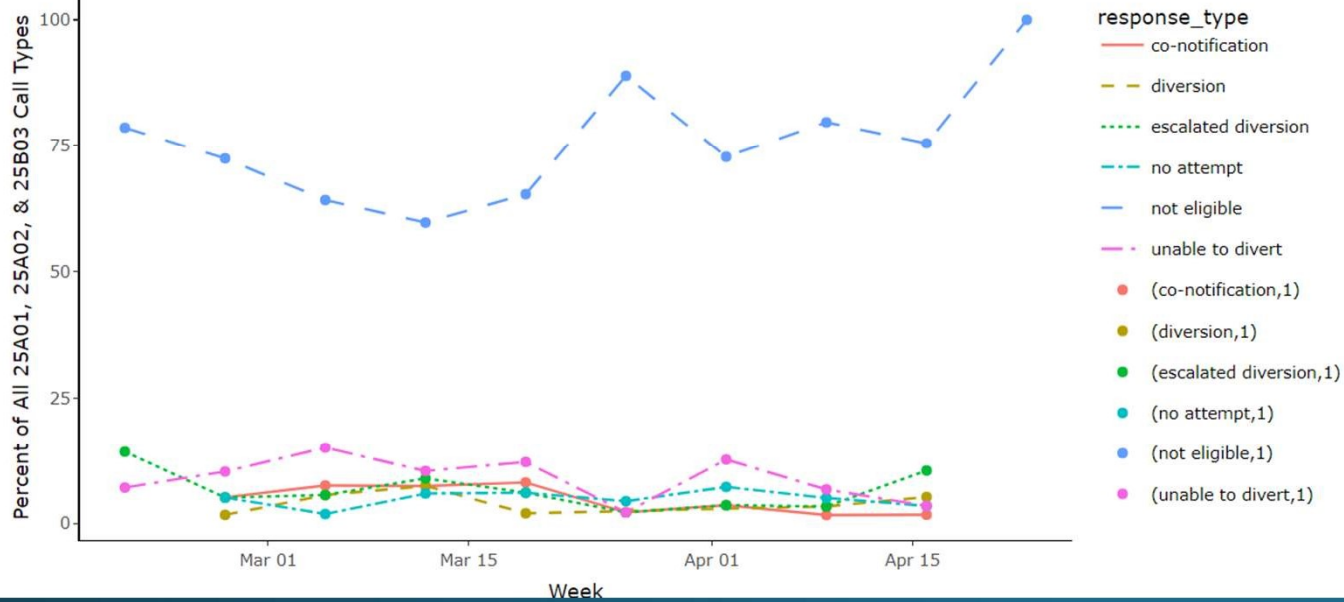
Cumulative Incidents Over Time

● Total Incidents ● Attempted Diversions ● Co-responses



Behavioral Health Diversion

Response Types to 25A01/25A02/25B03 911 Calls by Week
As a percentage of all 25A01/25A02 & 25B03 (after 3/17/22) responses during week

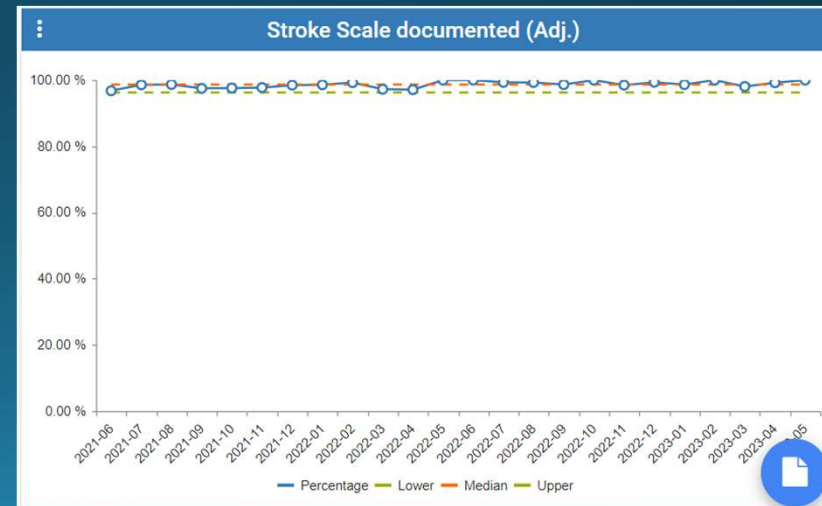
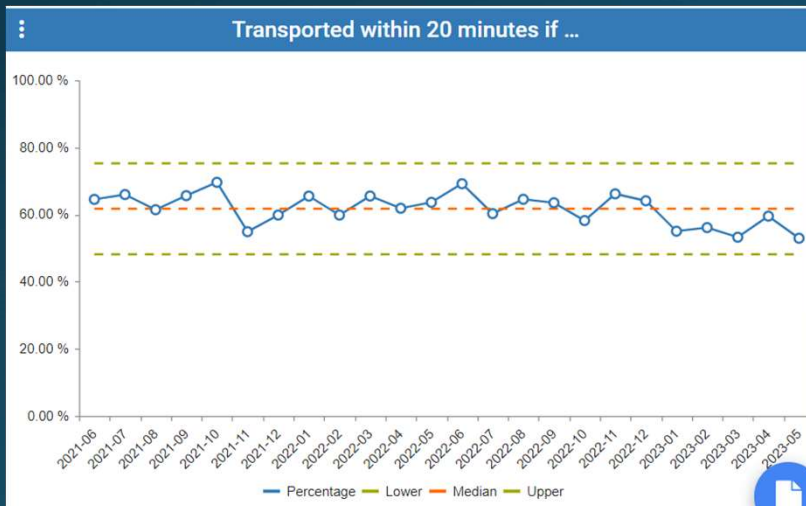
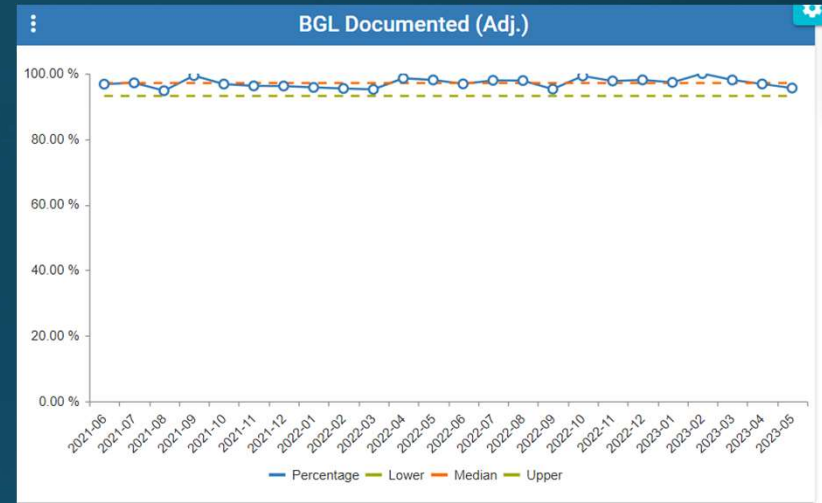
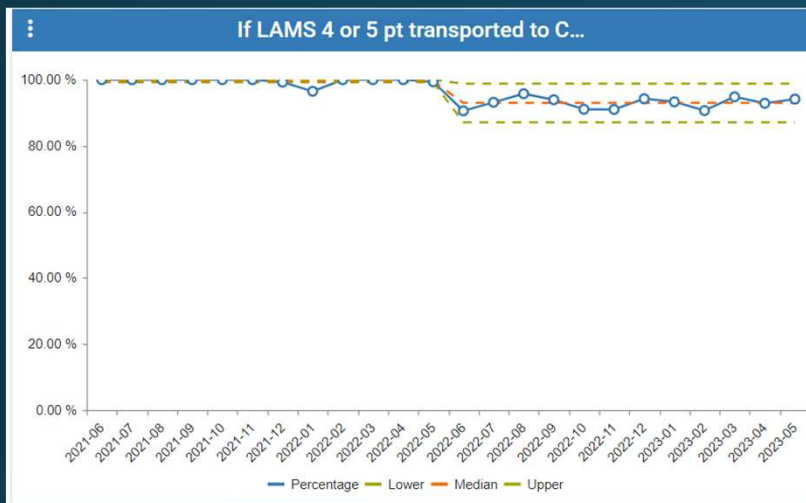


All Incidents, This Review Period

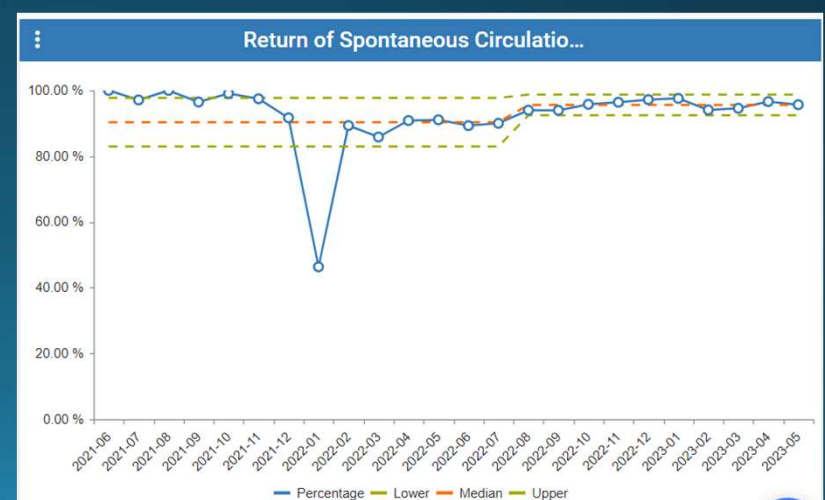
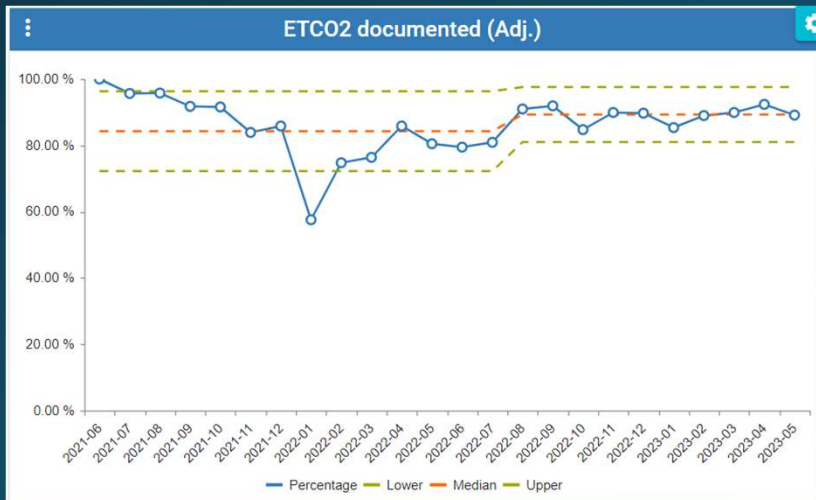
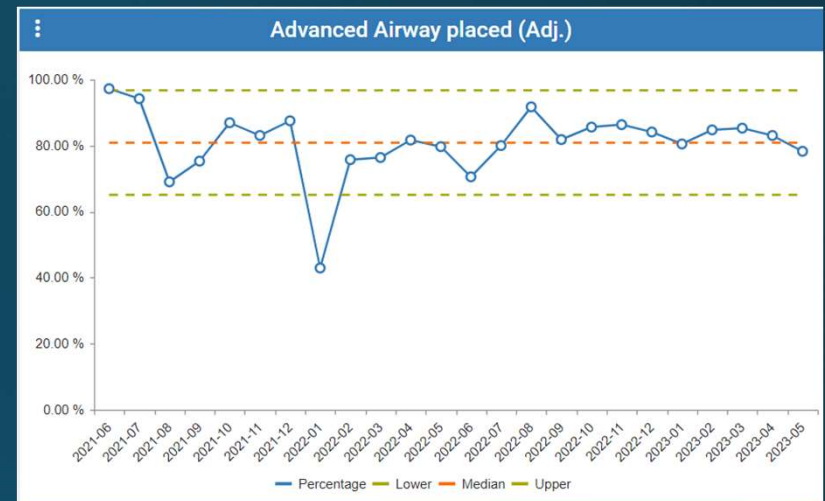
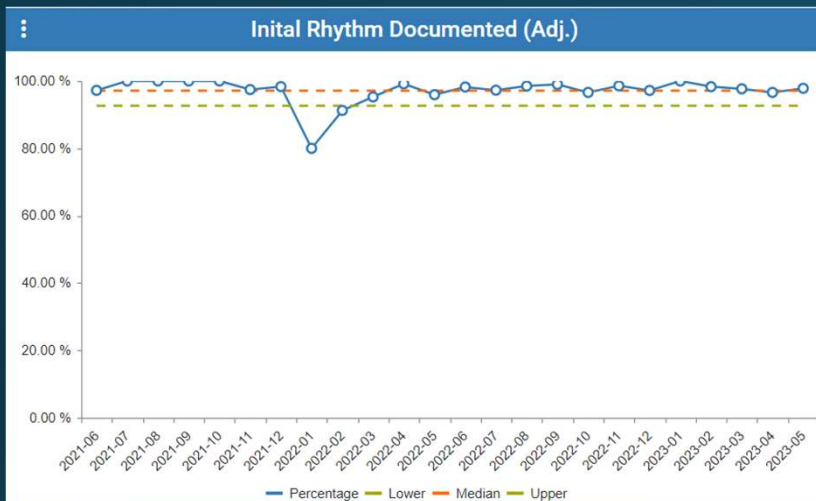
Incident Type	Count
Eligible Call Type	116
Eligible by Narrative	10
BCRI Involved in Incident	17
Diversion	6
Co-Notification	3
Escalated Diversion	8
Unable to Divert	9

Clinical Metrics

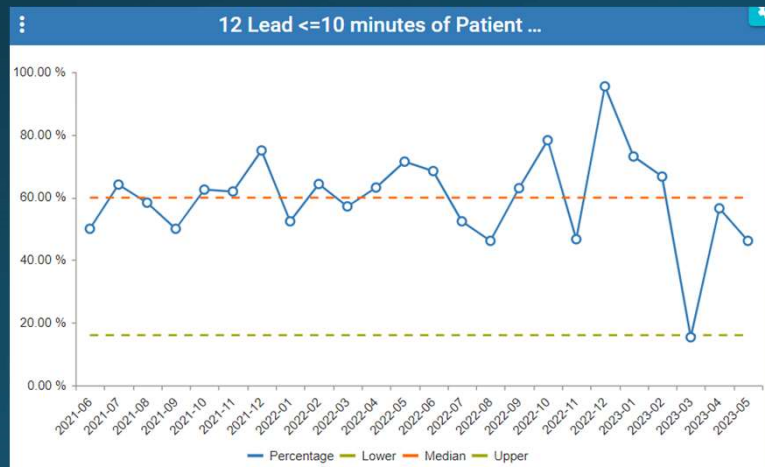
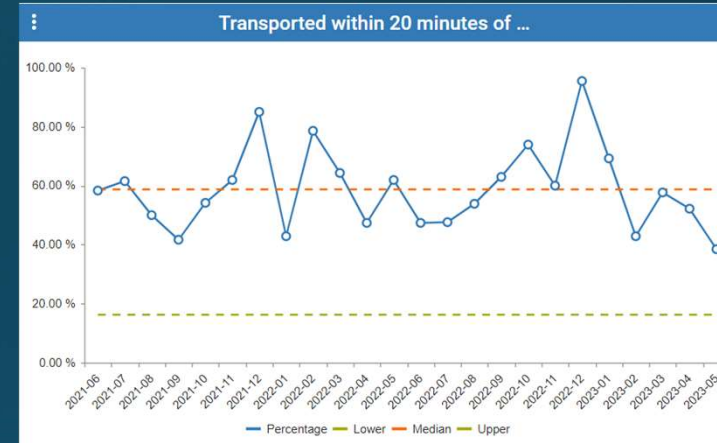
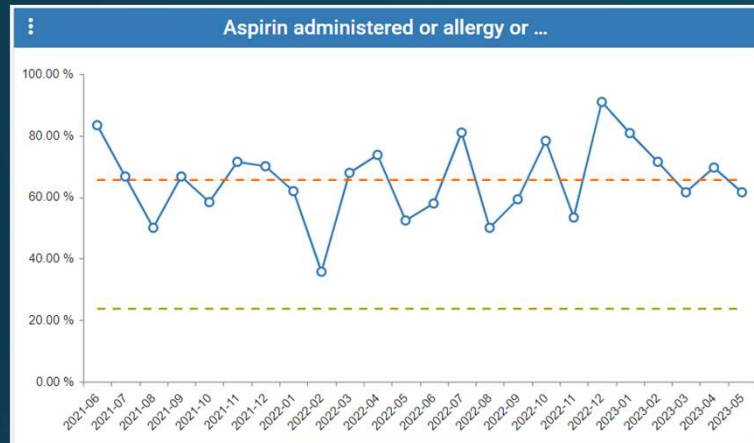
Clinical Metrics: Stroke



Clinical Metrics: Cardiac Arrest



Clinical Metrics: STEMI

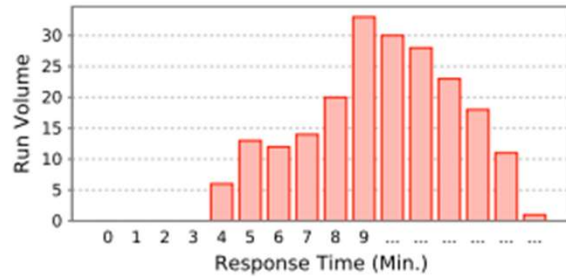


- Room for significant improvement
 - Rapid identification
 - Rapid transport

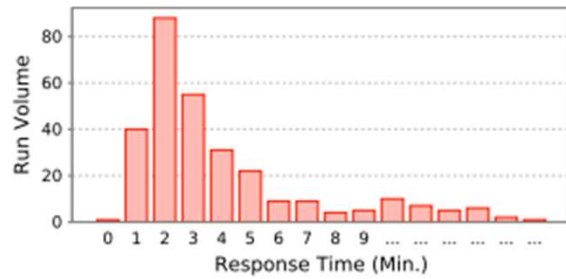
CARES Metrics: Cardiac Arrest

BCFD Data

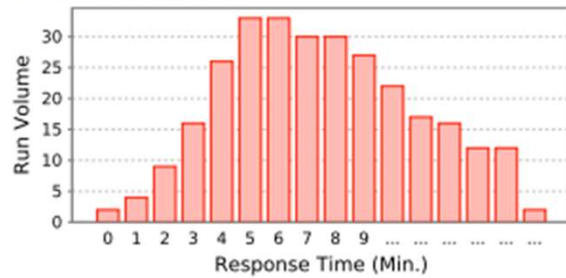
EMS Times: 911 to Arrival



EMS Times: 911 to Dispatch



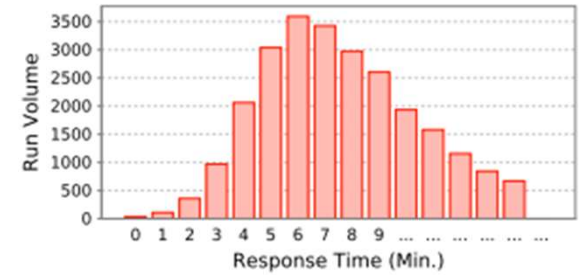
EMS Times: Dispatch to Arrival



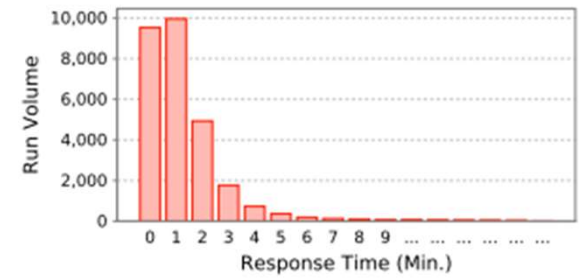
01/1/23-03/31/23

National Data

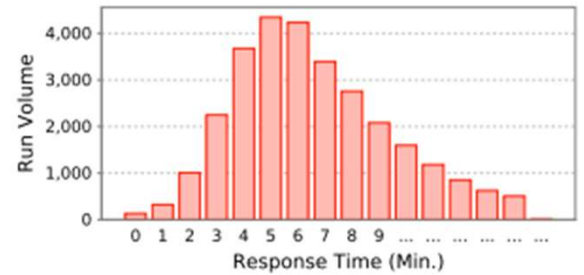
EMS Times: 911 to Arrival



EMS Times: 911 to Dispatch



EMS Times: Dispatch to Arrival



Utstein Survival Report

Baltimore City Fire Department

Date of Arrest: From 01/01/2023 Through 03/31/2023

Prince George's
01/23-03/23

Howard
01/23-03/23

Non-Traumatic Etiology Survival Rates

Overall:	6.4% (312)
Bystander Wit'd:	11.7%(77)
Unwitnessed:	2.9% (205)
Utstein ¹ :	41.7% (12)
Utstein Bystander ² :	80.0% (5)

Bystander Intervention Rates ³

CPR:	20.9% (234)
Public AED Use:	5.9% (51)

Non-Traumatic Etiology Survival Rates

Overall:	4.6% (284)
Bystander Wit'd:	7.1%(98)
Unwitnessed:	1.9% (160)
Utstein ¹ :	15.4% (26)
Utstein Bystander ² :	21.4% (14)

Bystander Intervention Rates ³

CPR:	44.7% (219)
Public AED Use:	13.0% (23)

Non-Traumatic Etiology Survival Rates

Overall:	7.0% (57)
Bystander Wit'd:	6.7%(15)
Unwitnessed:	5.4% (37)
Utstein ¹ :	0.0% (6)
Utstein Bystander ² :	0.0% (3)

Bystander Intervention Rates ³

CPR:	40.0% (50)
Public AED Use:	37.5% (8)

Continued opportunity to push bystander CPR
Survival rates overall remain constant

Questions?

