The Commonwealth of Massachusetts
STATE 911 DEPARTMENT
NORTH SHORE REGIONAL 911 CENTER

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Key Performance Indicators
Adopted by the NSR911 Police, Fire, Administrative, and Executive Boards
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When looking at performance measures for 911 centers, we first ask the question, "What are we measuring?" and then we need to define, "what is 'success'?" By identifying Key Performance Indicators, or KPIs, we can determine what is being measured. We can then look at the standards or industry norms, where applicable, to identify measurements of success. In some cases, there is no applicable standard or industry norm. With all KPIs, we have identified our agency objectives which seek to meet or exceed relevant benchmarks, where appropriate.

This document identifies KPIs throughout different areas of this center: Administrative, Regional Operations, Wireless Operations, and Quality Assurance. Each area focuses on specific metrics that are critical for that division's success. Administrative KPIs look at the agency as a whole. Whereas, the KPIs for Regional and Wireless Operations look at each operation individually. Finally, the Quality Assurance KPIs are the same across both disciplines, but they need to be measured separately.

Administrative KPIs

METRIC	Labor Turnover Rate
DESCRIPTION	Total number of employees who terminate employment with the NSR911 (voluntary or involuntary) in a given period, divided by authorized strength (total number of employees in the department) during that same period, expressed as a percentage.
STANDARD	Not Applicable
INDUSTRY AVERAGE	The national average annual turnover rate for 911 centers is 17 percent (APCO Project RETAINS, 2005, p. xi).
NSR911 OBJECTIVE	To be less than 17% annually.

METRIC	Retention Rate
DESCRIPTION	Total number of employees from the previous year who retain employment with the NSR911 in the following year, divided by authorized strength (total number of employees in the department) during the latter year expressed as a percentage.
STANDARD	Not Applicable
INDUSTRY AVERAGE	The national average retention rate for all centers is 83 percent (APCO Project RETAINS, 2005, p. 24).
NSR911 OBJECTIVE	To be greater than 83% annually.

METRIC	**Absenteeism Rate**
DESCRIPTION	Total number of hours of absences[1] in a given period, divided by the total number of hours during that same period, expressed as a percentage.
STANDARD	Not Applicable
INDUSTRY AVERAGE	3.2% for Public Sector, State Government Employees (Bureau of Labor Statistics, 2021)
NSR911 OBJECTIVE	To be less than 3.2% annually.

METRIC	**Grievance Rate**
DESCRIPTION	Total number of grievances in a given period, divided by the authorized strength (total number of employees in the department), expressed as a percentage.
STANDARD	Not Applicable
INDUSTRY AVERAGE	Not Applicable
NSR911 OBJECTIVE	To not have any grievances during the year, effectively a 0% rate.

Regional Operations KPIs

METRIC	**Ring-to-Pickup Time**
DESCRIPTION	The amount of time it takes to answer a 911 call. The time begins when a 911 call enters our system, and the time ends when a telecommunicator answers the call.
STANDARD	**NENA-STA-020.1-2020 & NFPA 1221 (2019 Edition) §7.4.1** states that ninety percent (90%) of all 911 calls arriving at the Public Safety Answering Point (PSAP) shall be answered within fifteen (15) and ninety-five (95%) of all 911 calls should be answered within twenty (20) seconds.
INDUSTRY AVERAGE	Not Applicable
NSR911 OBJECTIVE	To answer all 911 calls within ten (10) seconds or less.

METRIC	**Pickup-to-Dispatch Time**
DESCRIPTION	This is a measurement of the amount of time it takes to dispatch a call starting from when the telecommunicator answered the call.
STANDARD	**NFPA 1221, 2019 Edition, §7.4** Operating Procedures, states that 90 percent of emergency alarm processing shall be completed within 60 seconds for the following high-priority level events: Trauma (i.e., penetrating chest injury, GSW, etc.), Neurologic emergencies (i.e., stroke, seizure), Cardiac-related events, Unconscious/unresponsive patients, Allergic reactions, Patient not breathing, Choking, Fire involving or potentially extending to a structure(s), Explosion, or Other calls as determined by the Authority Having Jurisdiction (AHJ). The following types of calls or mitigating circumstances shall be exempted from this pickup-to-dispatch time: Joint responses with law enforcement (involving weapons), Hazardous materials incidents, Technical rescue,

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[1] Absences are defined as instances when persons who usually work 35 or more hours per week (full time) worked less than 35 hours during the reference week for one of the following reasons: own illness, injury, or medical problems; and maternity or paternity leave. Excluded are situations in which work was missed due to vacation or personal days, childcare problems, holiday, civic or military leave, labor dispute, and other reasons. The absence rate is the ratio of workers with absences to total full-time wage and salary employment.

	Language translation, TTY/TDD calls, Incomplete location calls, SMS message to 9-1-1, Calls received from outside the normal area of responsibility and/or service area, Calls requiring use of a PSAP registry or similar tool to determine the appropriate PSAP and/or transfer location, or Calls received during a significant disaster that severely and significantly depletes available resources, impacts local infrastructure, and could result in changes to normal dispatcher procedures (disaster mode).
INDUSTRY AVERAGE	There is no industry average. Many studies show that NFPA's Pickup to Dispatch Standard is not achievable 90% of the time. Additionally, according to an audit by the City of Atlanta, they indicated that "The NFPA standard may not be a realistic goal for the center to achieve… Industry literature suggests that the processing time is closer to 92 seconds" (City of Atlanta, 2013, p. 28). Additional reference material is available in the following studies: City of Phoenix (City Auditor Department, 2021), City of Bozeman (City of Bozeman, 2019), Burleson, Texas (Mission Critical Partners, 2020), and Bozeman, Montana (City of Bozeman, 2019). NSR911 acknowledges that there is not a lot of guidance within this topic but is compelled to report data on this metric.
NSR911 OBJECTIVE	To process 90% of the following high-priority level events* within 60 seconds: Trauma (i.e., penetrating chest injury, GSW, etc.), Neurologic emergencies (i.e., stroke, seizure), Cardiac-related events, Unconscious/unresponsive patients, Allergic reactions, Patient not breathing, Choking, Fire involving or potentially extending to a structure(s), or Explosions.

To process 90% of all priority 1- 911 calls* for police, fire, and EMS within 90 seconds and 95% within 120 seconds.

*NOTE: NFPA 1221 (2019 Edition) states the following types of calls or mitigating circumstances shall be exempted from this pickup-to-dispatch time: Joint responses with law enforcement (involving weapons), Hazardous materials incidents, Technical rescue, Language translation, TTY/TDD calls, Incomplete location calls, SMS message to 9-1-1, Calls received from outside the normal area of responsibility and/or service area, Calls requiring use of a PSAP registry or similar tool to determine the appropriate PSAP and/or transfer location, or Calls received during a significant disaster that severely and significantly depletes available resources, impacts local infrastructure, and could result in changes to normal dispatcher procedures (disaster mode). *Due to limitations with CAD reporting, we are unable to exclude these exceptions. NSR911 will report data on all Priority 1 calls.* |

Wireless Operations KPIs

METRIC	Ring-to-Pickup Time
DESCRIPTION	The amount of time it takes to answer a 911 call. The time begins when a 911 call enters our system and the time ends when a telecommunicator answers the call.
STANDARD	**NENA 56-005.1** states that ninety percent (90%) of all 911 calls arriving at the Public Safety Answering Point (PSAP) shall be answered within ten (10) seconds during the busy hour (the hour each day with the greatest call volume, as defined in the NENA Master Glossary). Ninety-five (95%) of all 911 calls should be answered within twenty (20) seconds.
INDUSTRY AVERAGE	Not Applicable
NSR911 OBJECTIVE	To answer all 911 calls within ten (10) seconds or less.

METRIC	Average Number of Calls Per agent Per Hour
DESCRIPTION	This measurement utilizes the Call Statistics per Hour – Average Count divided by 15 calls per each hourly employee.
STANDARD	Not applicable
INDUSTRY AVERAGE	Varies. APCO Project Retains has a worksheet that allows each agency to calculate the number of calls a telecommunicator can process per hour. Using this worksheet, the agency has identified that telecommunicators at our center should handle an average of 15 calls per hour. Using this number
NSR911 OBJECTIVE	Each wireless telecommunicator should handle 15 calls or less per hour of each shift.

METRIC	Average Call Handling Time*
DESCRIPTION	The total amount of time from pickup to disconnect. This includes gathering necessary information, transferring to the appropriate PSAP, and ensuring communication with understanding.
STANDARD	Not Applicable
INDUSTRY AVERAGE	Not Applicable
NSR911 OBJECTIVE	To spend less than 2 minutes 25 seconds per call on average.

Quality Assurance KPIs (Regional and Wireless)

METRIC	Percent of Calls Reviewed
DESCRIPTION	The number of calls (regional or wireless) reviewed in a given period divided by the number of calls received in that same period, expressed as a percentage.
STANDARD	**APCO/NENA ANS 1.107.1.2015** states that PSAPs shall review at least 2% of all calls for service. Where the 2% factor would not apply or be overly burdensome due to low or excessively high call volumes, agencies must decide on realistic levels of case review.
INDUSTRY AVERAGE	APCO Emergency Medical Dispatch (EMD) guidelines suggest a minimum of 7% of EMD calls be reviewed by the agency (APCO Institute, 2015, pp. 8-1).
NSR911 OBJECTIVE	To review at least 3% of all regional room voice and radio calls. To review at least 7% of all Emergency Medical Dispatch (EMD) calls. To review at least 2% of all calls received in the wireless operation center.

METRIC	Average Score of Calls Reviewed
DESCRIPTION	A measurement of actual points received on a call review divided by the total number of possible points. Possible points are objectively defined by the agency on applicable call review forms (e.g., Dispatching, Call Taking, Emergency Medical Dispatch, etc.).
STANDARD	**APCO/NENA ANS 1.107.1.2015** recommends that the acceptable overall score is 90%.
INDUSTRY AVERAGE	Varies by state and discipline.
NSR911 OBJECTIVE	The average score of calls reviewed should be equal to or greater than 90%.

METRIC	Number of Complaints Per Year as a Percent of Total Calls
DESCRIPTION	A measurement of the total number of complaints in a given period, divided by the total number of calls (CAD calls for Regional Operations or Wireless Calls for Wireless Operations) in that same period, expressed as a percentage.
STANDARD	Not Applicable
INDUSTRY AVERAGE	Unknown
NSR911 OBJECTIVE	The percent of complaints should be less than 0.05% of the total calls.

Metrics that we are unable to track, but would like to

- Pickup to transfer Time*
- Transfer to Disconnect Time*
- Number of Concurrent Calls
- How often & when do calls go into queue

The current Next Generation 911 (NG911) Management Information System used is not able to report on the "Pickup to transfer Time" or the "Transfer to Disconnect Time." The State 911 Department has contracted with a third-party vendor to capture and report on these metrics. This report is actively being developed. In the meantime, the NSR911 can report on "Average Call Handling Time." This metric is an amalgamation of the "Pickup to transfer Time" and "Transfer to Disconnect Time" metrics. Once the reporting capability is available, "Pickup to transfer Time" and "Transfer to Disconnect Time" will replace "Average Call Handling Time."

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