



Reducing EMS Response Delays through Radio Pre-Alert Integration

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Abstract

Traditional modes of collegiate EMS dispatch feature medical alarms routed indirectly through campus police, University dispatch centers, or county or municipal Public Safety Answering Points. We sought to identify a method of integrating University communications to a single radio channel and implementing a direct pre-alert paging system to decrease response times and improve patient outcomes. With increased investment into the University Police Dispatch Center capabilities, the Stony Brook Volunteer Ambulance Corps (SBVAC) developed a radio channel referred to as “SBU FR Dispatch” on an 800 frequency and dual tone signaling was integrated into all department 800 radios. This allows University Police to issue a pre-alert over FR Dispatch as they begin their conference call with County Fire, Rescue and Emergency Services, who formally activate EMS in the county. Primary outcomes included measuring EMS notification to enroute time, and EMS notification to patient contact. Secondary outcome measures included the effect on radio communication, provider experience and interagency coordination. EMS response times to incidents were decreased, while interagency coordination and provider experience was improved. Further data is needed to evaluate the effectiveness of the pre-alert system and unification of campus emergency services due to a limited number of incidents.

Introduction

Collegiate-Based EMS agencies (CBEMS) serve a vital role within the larger emergency medical system by significantly reducing the call burden on local EMS agencies, providing compassionate care from peers, and addressing emergencies with faster response times to enhance community healthcare³. However, CBEMS groups are often reliant on multi-step dispatch pathways in which 911 alarms are routed through University police, campus dispatch centers, or municipal Public Safety Answering Points (PSAP) prior to the notification of EMS personnel. These indirect pathways lead to delayed responses, fragmented communication, and issues involving interagency coordination, potentially worsening patient outcomes. There is also little evidence to support the accuracy of the information received from the dispatch centers as updates cannot be given directly to EMS personnel². SBVAC is a NYS certified non-profit emergency ALS ambulance agency serving Stony Brook University (SBU) and the surrounding area, operating 24/7 with an annual call volume of approximately 1000 alarms. SBU, a collaborative public safety environment with a newly developed FD, began to invest in ways to enhance the delivery of emergency services by providing funds for an enhanced dispatch center and radio infrastructure with an opportunity to modernize EMS activation. SBVAC collaborated with UPD to construct a unified 800-MHz channel known as SBU FR Dispatch, which integrated digital tone signaling to provide campus EMS crews with an immediate pre-alert while county Fire, Rescue, and Emergency Services issues the formal activation. This study aimed to evaluate the impact of the integrated communication strategy on operational performance, specifically EMS response metrics, interagency communication, and patient outcomes.

Development/Implementation

- Three mobile and six portable 800 MHz radios were sent to Suffolk County FRES HQ to be reprogrammed with SBU FR Dispatch.
- With Integrated Wireless Technologies, flash codes for digital tone signaling from Motorola were implemented into all nine 800 MHz radios.
- Dispatch and EMS protocols were revised to include pre-alert management and interdisciplinary radio communication for the UPD to transmit a pre-alert to EMS upon confirmation of a 911 alarm while simultaneously initiating a conference call with the county for formal activation.
- Each radio had a scan feature initiated with MEDCOM EAST, which is the channel SBVAC communicates with the County FRES, and SBU FR Dispatch. Training sessions were conducted for dispatchers and EMS providers to standardize radio usage and patient care.
- Quality assurance measures such as call audits, response time monitoring through record database, and dispatch logs were used to measure compliance and system performance after the initial SBU FR Dispatch effective date of November 17, 2025.

Evaluation

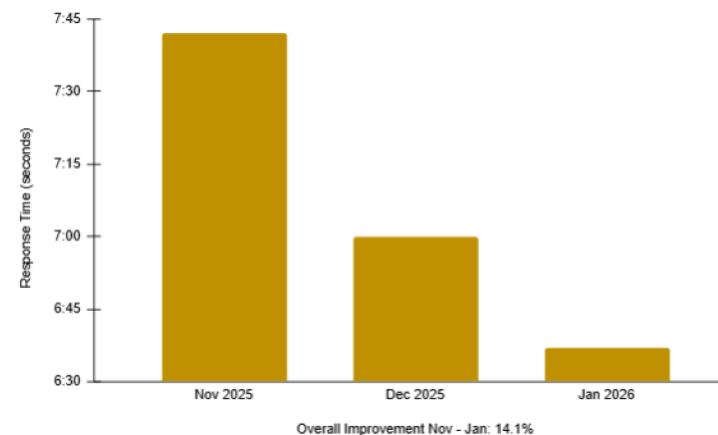


Figure 1. EMS response times before and after the implementation of the unified radio channel, SBU FR Dispatch, with an established pre-alert system on November 17, 2025.

Month	Incident Count	Chute Time (mm:ss)	Seconds	Relative Change from November
Nov-25	58	3:27	207	0
Dec-25	58	2:43	163	-21.30%
Jan-26	44	2:30	150	-27.50%

Table 1. Average chute times before and after SBU FR Dispatch Implementation on November 17, 2025.

Discussion/Conclusion

Chute times were decreased by 27.5% from November 2025 to January 2026, demonstrating more expedited mobilization of EMS personnel due to earlier notification. The less drastic but similar reduction in response time suggests that this system reduces delays when compared to the multi-step dispatching systems. These findings support the idea that the integration of campus emergency services lead to streamlined flow of communication and enhanced situational awareness for collegiate EMS departments. Qualitatively, this model improved interagency communication by allowing multiple campus departments to provide actionable updates and alarm details during county activation. EMS providers reported a decrease in missed radio transmissions, clearer incident details, and ease of scene access. The recurrent month-to-month improvement in time metrics indicates that the success of this program was maintained after the initial training regiments and crew adjustments. The limitations of this study include the fact that only a single campus agency was evaluated with a limited number of incidents and short follow-up duration, requiring more time to adequately assess the effects of the program. Response time also remains a questionable performance measure in regards to patient outcomes¹. Further studies with a longer observation time including a larger number of incidents and effect on patient outcomes is necessary to verify the impact of this program.

References

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