

**UNIVERSITY OF CALIFORNIA, SAN FRANCISCO
AUDIT & ADVISORY SERVICES**

**Emergency Management Mass Notification System Implementation
Project #21-048**

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University of California
San Francisco

Audit & Advisory Services

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SUBJECT: Emergency Management Mass Notification System Implementation

As a planned internal audit for Fiscal Year 2021, Audit and Advisory Services (“A&AS”) conducted a review of emergency management mass notification system implementation. The objectives of the review were to assess the implementation of the mass notification system and validate that issue identification and remediation and post-implementation testing were effective.

Our services were performed in accordance with the applicable International Standards for the Professional Practice of Internal Auditing as prescribed by the Institute of Internal Auditors (the “IIA Standards”).

Our review was completed and the preliminary draft report was provided to department management in January 2021. Management provided their final comments and responses to our observations in January 2021. The observations and corrective actions have been discussed and agreed upon with department management and it is management’s responsibility to implement the corrective actions stated in the report. A&AS will periodically follow up to confirm that the agreed upon management corrective actions are completed within the dates specified in the final report.

This report is intended solely for the information and internal use of UCSF management and the Ethics, Compliance and Audit Board, and is not intended to be and should not be used by any other person or entity.

Sincerely,

Irene McGlynn
Chief Audit Officer
UCSF Audit and Advisory Services



EXECUTIVE SUMMARY

I. **BACKGROUND**

As a planned audit for Fiscal Year 2021, Audit & Advisory Services (A&AS) conducted a review of the emergency management mass notification system implementation. The objectives of the review were to assess the implementation of the mass notification system, and validate that issue identification and remediation, and post-implementation testing were effective.

In March 2020, UCSF implemented changes to WarnMe, UCSF's enterprise-wide notification service. A new system, Everbridge, was implemented as the underlying system to carry out this service for the campus. This is the same system used by UCSF Health. WarnMe sends notifications to individuals or groups using lists and locations. The system keeps personnel informed before, during and after events. This service allows employees to opt-in to receive notifications via phone calls, text messaging, or e-mail, based on location. Employees opt-in to enter contact information and subscribe to notifications. When UCSF issues a notification about a potential safety hazard or concern, messages are sent to personnel based upon the communication methods that they have registered.

The implementation effort was led by the Mass Notification Program Coordinator in the Homeland Security Emergency Management (HSEM) Division of the UCPD. HSEM is responsible for implementing advanced emergency management protocols in support of UCSF's Emergency Plan, coordinating UCSF's Emergency Operations Centers, and providing emergency management and training, homeland security risk assessment, mitigation planning, business continuity planning and technology support for the UCSF Emergency Operations Center.

II. **AUDIT PURPOSE AND SCOPE**

The purpose of this review was to determine if an appropriate project management methodology was established and followed for the implementation of the campus emergency mass notification system. The scope of the review covered activities related to project phases (specifically, Initiation, Planning, Execution and Close) for the implementation and post project review of the new mass notification system.

Procedures performed as part of the review included: review of project documentation, interview of business owners and key stakeholders, review of issues identified during the project and their resolution, review of system validation testing, review of a sample of mass notifications sent by WarnMe via both email and text, and review of new employees enrolled in WarnMe. For more detailed steps, please refer to Appendix A.

Work performed was limited to the specific activities and procedures described above. As such, this report is not intended to, nor can it be relied upon to provide an assessment of compliance beyond those areas specifically reviewed. Fieldwork was completed in January 2021.

III. SUMMARY

Based on work performed, we noted that the planning and execution of the new mass notification system implementation was efficiently planned and completed. The feasibility of the project was evaluated prior to starting. The proposed solution and required resources were identified and communicated to key stakeholders. A project plan defined the scope of the project, and identified its costs, required resources and timetable. Except as noted below, work and activities were performed in accordance with the project plan to meet the agreed success criteria.

Opportunities for improvement exist in the areas of increasing mobile phone contact information, development and implementation of an entity-wide policy, enhancement of system and processes, and completion of a post implementation review. The specific observations from this review are listed below as well as in Section IV. Observations and Management Corrective Actions.

1. Contact information for 62% of the individuals in the system is insufficient, lacking mobile phone numbers to receive emergency notifications by text. Additionally, a small percentage of new contacts were not loaded into the mass notification database, did not have badge access or were not provided an email account within 31 days of the date of hire to receive emergency notifications.
2. A Post Implementation review of the Implementation project has not been performed.
3. Entity-wide emergency management policies and guidelines have not been updated to address gaps in the governance language of the mass notification system including the ownership / coordinated responsibility of UCSF Health.
4. Configuration of the mass notification system and associated processes are not sufficient to ensure that appropriate stakeholders are included in the decisions to send notifications.

IV. OBSERVATIONS AND MANAGEMENT CORRECTIVE ACTIONS

No.	Observation	Risk/Effect	Recommendation	MCA
1	<p>Contact information for 62% of the individuals in the mass notification system (MNS) is insufficient, lacking mobile phone numbers to receive emergency notifications by text. Additionally, a small percentage of new contacts were not loaded into the MNS database, did not have badge access or were not provided an email account within 31 days of the date of hire to receive emergency notifications.</p> <p>Of the 61,309¹ total contacts in the system, only 23,322 (38%) have associated cell phone numbers. There are approximately 38,000 (62%) contacts without mobile phone numbers. There is an opportunity to encourage personnel to update their profiles and include mobile phone numbers for text messages.</p> <p>Of the 4185 new employees hired between January and October 2020:</p> <ul style="list-style-type: none"> • 2% were not loaded into the MNS database within 31 days of hire. The majority of these contact records were volunteers and affiliated personnel. • Badge access for 1% was provided more than 31 days after date of hire. • Active directory account access (for email) for 2% was provided more than 31 days after date of hire. <p>Text messages help keep personnel informed, when email notifications are not viable (i.e. for those who do not work at computers and during power/internet outages) and when personnel are away from their office phones. In time-sensitive, life-threatening emergencies, the inability to receive text alerts could put members of the UCSF community at risk.</p>	<p>Without supplying mobile phone numbers, some personnel may not receive timely emergency alert notifications, putting themselves and others at risk.</p> <p>Additionally, without appropriate email access, new employees may not receive timely emergency alert notifications. And without appropriate badge access, they may not have access to secure areas in the event of an emergency.</p>	<p>Management should identify target conditions and engage senior leadership to encourage personnel to supply mobile phone numbers for emergency notifications.</p>	<p>Emergency Management personnel will engage leadership in Strategic Communications and Public Information Officers to craft a phased, multi-prong marketing plan, to emphasize adding personal cell phones, to enhance the efficacy of the MNS.</p> <p>The plan may include defined targets, as well as an initiative to have new hires register their personal cell phone numbers during new hire orientation.</p> <p>Responsible Party: HSEM Division Commander</p> <p>Target Completion Date: 4/30/2021</p>
2	<p>A Post Implementation Review of the Implementation project has not been performed.</p>	<p>Without conducting a post</p>	<p>During the course of our review,</p>	<p>The project implementation team</p>

¹ The number of contacts includes all records in the UCSF HR databases: faculty, staff, contractors, students, and volunteers. Additionally, BCH-Oakland as well as UC Hastings were added.

No.	Observation	Risk/Effect	Recommendation	MCA
	<p>A Post Implementation Review was identified as a deliverable on the Project Charter; however, it has not been completed. The goal of the post implementation review is to evaluate whether project objectives were met and identify any outstanding tasks to be completed, how effectively the project was run, lessons for the future, and any follow up actions required to maximize the benefits from the project. Due to the timing of the system implementation go-live (3/1/20), Work From Home (WFH) directives, and opening the Emergency Operations Center (EOC), insufficient resources were available among the project team to perform a review at the conclusion of the project. With the WFH directives and opening the EOC there was a priority shift and assets were tasked with responsibilities related to COVID response and recovery.</p> <p>Per the Project Management Institute, Project Management Body of Knowledge, the project life cycle should include processes to formally close a project. The key benefits of finalizing all activities for the project are the project information is archived, the planned work is completed, and organizational resources are released to pursue new endeavors.</p>	<p>implementation review, project management weaknesses may not be detected and lessons learned may not be captured so that improvements can be made for future projects. Additionally, outstanding tasks may not be identified and completed.</p>	<p>management indicated that they would conduct a post implementation review.</p>	<p>will meet to conduct and document a post implementation project review.</p> <p>Responsible Parties: Representatives from HSEM, UCSF Health Emergency Management, and IT Financial Systems</p> <p>Target Completion Date: 4/30/2021</p>
3	<p><i>Entity-wide emergency management policies and guidelines have not been updated to address gaps in the governance language of the mass notification system (MNS) including the ownership / coordinated responsibility of UCSF Health.</i></p> <p>UCSF Campus Administrative Policy 550-23: Emergency Management (Reviewed Date October 2020) has been updated since the implementation of MNS; however, policies and guidelines do not clearly address the ownership or coordinated responsibility of UCSF Health.</p> <p>The Emergency Management Policy was updated to reflect the implementation of an integrated MNS capable of delivering emergency alerts to the entire university community, including UCSF Health, specific groups or specific locations. Additionally, the policy was updated to assign the UCSF Police Department with the primary responsibility, across the UCSF enterprise, for designated use of the MNS.</p>	<p>Exposure to a large number of frequent alerts may lead to becoming desensitized to them. Consequently, desensitization can lead to missing important messages.</p> <p>Without an appropriate policy, messages</p>	<p>Management has convened a work group to develop and implement a policy governing the appropriate use of the Mass Notification system. This policy should establish guidelines on who authorizes messages, how and by whom messages are</p>	<p>Management will engage with Strategic Communications to update the Enterprise Communication Plan to address the authority to review and approved messages. This update may include an Authority Matrix to supplement existing policy.</p> <p>Responsible Party: Representatives from</p>

No.	Observation	Risk/Effect	Recommendation	MCA
	<p>However, governance and responsibility for UCSF Health specific communications using the MNS are not addressed. Additionally, other guidance (such as UCSF Police Department General Orders 7.4.2 Authority to Initiate) and Emergency Communications Plan have not been updated to reflect the implementation of an integrated MNS.</p> <p>Policy and procedures guiding the governance of the emergency management mass notification system helps ensure that emergency messages are targeted, specific, and context-appropriate. A framework that is established and approved in advance reduces the need for additional decision-making during an emergency, or when timing is critical.</p>	<p>may be set without proper review and approval and result in information being sent to inappropriate audiences.</p>	<p>reviewed and approved, and what audience messages are sent to.</p>	<p>HSEM, UCSF Health Emergency Management, and IT Financial Systems</p> <p>Target Completion Date: 06/30/2021</p>
<p>4</p>	<p><i>Configuration of the mass notification system and associated processes are not sufficient to ensure that appropriate stakeholders are included in the decisions to send notifications.</i></p> <p>Management noted that a Conversa Health Notification (regarding online self-assessment health screening) was sent to an inappropriate audience (BCHO employees). This message was not reviewed by all appropriate stakeholders prior to issuance.</p> <p>To be effective, it is essential that emergency messages are accurate and directed to relevant personnel.</p> <p>Criteria within the emergency management mass notification system should be configured to allow the system to direct messages to the appropriate personnel group, based on their role, team and location. Appropriate stakeholders should be included in the decisions sending notifications to personnel under their chain of command.</p>	<p>If emergency notifications are not directed to the correct audience, then this communication becomes less effective and may result in relevant messages being ignored.</p>	<p>Management should ensure that the appropriate personnel are involved in crafting and distribution of emergency notifications to ensure that they are directed to the correct audience.</p>	<p>In conjunction with observation #3 above, an Authority Matrix will be created to supplement existing policy and be used for system and/or process configuration.</p> <p>Responsible Party: Representatives from HSEM, UCSF Health Emergency Management, and IT Financial Systems</p> <p>Target Completion Date: 06/30/2021</p>

APPENDIX A

To conduct our review the following procedures were performed for the areas in scope:

- Reviewed relevant UC and UCSF policies
- Review of the following project documentation:
 - Business Justification: To determine if it provided the feasibility of completing the project and of the proposed solution.
 - Project Charter: To determine if it outlined the purpose and requirements of the project, team roles and responsibilities, and measures of project success.
 - Project Plan: To determine if it defined tasks, associated timelines, and stakeholder communication.
 - Status Reporting: To determine if reporting was sufficient to enable the Project Sponsor to assess the status of the project and approve project variances (if any).
 - Interview of business owners and key stakeholders to assess how well the project achieved the intended outcomes and expected benefits. And to identify if more work is required to maximize the benefits from the project outputs.
- Review of management's post-implementation review.
- Review of issues identified during the project to determine if they were appropriately resolved.
- Review of testing and results performed during the project to determine if it was sufficient to validate that the system operated as intended.
- Review of a sample of communications sent by WarnMe via email and text to determine if there was a significant lag between the two delivery methods.
- Review of new employees to determine if they are enrolled in WarnMe timely.