# Disaster Communication Improvement by Integrating Existing Services

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**Introduction:** Maintaining an up-to-date roster of staff, their locations and their roles with our hospital's emergency response system was a manual labor-intensive task. Because of the burden of this task, and the infrequency of a disaster requiring the use of a disaster communication channels, this task was often ignored.

**Methods:** A technical assessment of our department's provider scheduling software, QGenda, was performed which demonstrated that the service offers a robust Application Protocol Interface (API)[1]. Our team developed software which consume the QGenda API to capture up-to-date staff assignments, contact information, and locations on an on-going basis and store the information in a relational database. An algorithm was developed to analyze the data and compare the information with data fetched from our hospital's contracted disaster communication service, Everbridge. Using additional algorithms changes were identified and were merged with Everbridge data. Missing or new staff and assignments were also inserted into Everbridge. This analysis is performed multiple times per day to ensure up-to-date staffing data is maintained within the disaster response system. To ensure that the correct staff could be contacted in the case of a disaster, an easy-to-understand roster was developed within Everbridge to allow for rapid communication with staff based on location, roles, and/or day of service an example of which is shown in Figure 1.

**Results:** By developing a server-side software to gather staff information from QGenda and add the relevant information into hospital's disaster communication partner, Everbridge, we were able to ensure an up-to-date staff contact details, location, and clinical assignment. To test the results of our end analyzed disaster software information from of two recent disasters, one prior to software implementation with the February 2021 Texas Winter Storm, and another after, September 2021 Hurricane Nicholas. We saw that 7% of faculty in the disaster system prior to the software implementation were not in the system, and 100% of the rotating staff, such as residents, pediatric anesthesiology fellows, and SRNAs were out of date.



Figure 1: Provider Disaster Roster Folder Organization
- 📂 Pediatric Anesthesiology
  - 📂 Anes Employee Disaster Roster
    - 📁 ANES EDR Prepration
    - 📁 ANES EDR Relief
    - 📂 ANES EDR Ride-Out
      - 📁 ANES_EDR_FRI_RIDEOUT
      - 📁 ANES_EDR_MON_RIDEOUT
      - 📁 ANES_EDR_SAT_RIDEOUT
      - 📁 ANES_EDR_SUN_RIDEOUT
      - 📁 ANES_EDR_THU_RIDEOUT
      - 📁 ANES_EDR_TODAY_RIDEOUT
      - 📁 ANES_EDR_TUE_RIDEOUT
      - 📁 ANES_EDR_WED_RIDEOUT
        - 📄 ANES_WED_RIDEOUT_CV
        - 📄 ANES_WED_RIDEOUT_MAIN
        - 📄 ANES_WED_RIDEOUT_WEST
        - 📄 ANES_WED_RIDEOUT_WOO

**Discussion:** Faced with a crisis from a disaster, communication with providers is of the utmost importance. Having to rely on a set of fragmented systems with an unfolding crisis is less than ideal. However, many hospitals have nonintegrated systems which force them to perform time consuming and labor-intensive manual steps when responding to an urgent event. Although siloed and highly specialized software packages and services are ideal in high-risk environments[2], these platforms are designed to perform only a few set of specialized tasks. During a disaster, we find that many of our siloed software and services need to communicate to coordinate to be able to accomplish a more most rapid response. At our institution, maintaining an up-to-date roster of on call staff in our hospital's emergency response system was a labor-intensive task. We sought to develop software to allow for communication between our scheduling software and the hospital's disaster communication system to quickly identify the team members who may be available to respond to a disaster and communicate with them quickly and effortlessly.

**References:**

1. *Qgenda Rest Api*. QGenda REST API. (n.d.). Retrieved November 1, 2022, from https://restapi.qgenda.com/
2. Engelmann C, Ametowobla D. Advancing the integration of hospital IT. Pitfalls and perspectives when replacing specialized software for high-risk environments with enterprise system extensions. Appl Clin Inform. 2017 May 17;8(2):515-528. doi: 10.4338/ACI-2016-06-RA-0100. PMID: 28512663; PMCID: PMC6241744.