



Delivering a Streamlined PPE Tracker

The NIOSH Pittsburgh Mining Research Division (PMRD) conducts research to reduce a wide variety of occupational safety and health hazards including mining fatalities, injuries, and illnesses across all mining sectors. PMRD partners with labor groups, mining associations, equipment manufacturers, mine operators, and other government agencies to collect data, develop and test software, create new technologies, and offer solutions to workplace challenges.

Challenge

During the COVID-19 pandemic, hospitals, medical facilities, and makeshift care centers encountered critical shortages of personal protective equipment (PPE). NIOSH researchers quickly identified a need to track, manage, and conserve the nation's PPE supply. The organization developed mathematical tooling to improve tracking, but it was too cumbersome to use in fast-paced medical care facilities. NIOSH needed a better solution.

Approach

PMRD's software developers built an emergency **PPE Tracker Mobile Application** for iOS and Android. Working with the Maximus development team, PMRD was able to roll out this application successfully in just 30 days.

Services Provided:



- Developed highly functioning PPE tracking application (iOS and Android) from concept to download
- Developed PPE Burn Rate Calculator to inform critical healthcare decision making
- Improved delivery timeline due to reusable components built for quick solution turnaround

Success Achieved:



- Delivered app within 30 days
- Recognized innovation with industry awards
- Downloaded more than 14,000 times in more than 120 countries
- Received more than 14.4 million impressions to the website

The team utilized proven techniques, reused existing components, and drew on its extensive mobile application expertise to deliver the PPE Tracker. The team used Xamarin, an open-source platform for building modern applications for iOS and Android simultaneously. It allows developers to write business logic in a single language (or reuse existing application code) while achieving native performance, look and feel on each platform.

Results

The PPE Tracker mobile application was officially released in Google Play and the Apple App Store on April 29, 2020, with worldwide impact. To date, the application has been downloaded more than 14,000 times and the embedded calculator has been downloaded more than 160,000 times in 120 countries. Related, the NIOSH PPE Burn Rate Calculator helps facilities determine how long their PPE supplies will last to make informed decisions on use. The PPE Burn Rate Calculator and the NIOSH PPE Tracker Mobile Application webpages have received a combined total of more than 14.4 million impressions, demonstrating the importance of this information for healthcare facilities.

The development team was recognized in December 2020 by NIOSH Director Dr. John Howard with the NIOSH **Alice Hamilton Award** for Excellence in Occupational Safety and Health, as well as the **ClearMark COVID Category Award of Distinction** from the Center for Plain Language in October 2020.

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