



Whitepaper

World's First AI-enabled Integrated Weapons Detection and Screening System for Healthcare Organizations

Evolv Technology Prescribes Free-flow, Touchless Healthcare Safety

Overview

INDUSTRY: Healthcare

Use Cases

- AI-enabled touchless weapons detection and screening for ingress points at healthcare facilities

Solutions

- Evolv Express®
- Evolv Cortex AI™
- Evolv Insights™

Outcomes

- Protect patients, visitors, families, and staff from interpersonal and workplace violence and mass casualty attacks by detecting concealed weapons before they enter the healthcare facility
- Improve ingress experiences at numerous facility ingress points by eliminating security queues and minimizing intrusive weapons screening of patients, visitors, families, and staff
- Optimize security staff resources at different security ingress points; allowing reallocation to other areas for enhanced security
- Leverage flexible deployment options to deploy screening quickly and easily at visitor and staff entrances, the emergency room, staff entrances, and third-party freight and vendor entrances
- Increase healthcare staff safety by mitigating workplace violence connected to concealed weapons
- Reduce threat risk and improve efficiencies via detailed weapons detection and screening reports for threat intelligence, patient and visitor arrival curves and counts, system detection performance, alarm statistics, and detection settings
- Increase scores on employee engagement surveys for safety-related questions

Contents

03 Challenges

03 Weapons Detection and Screening Gaps in Healthcare

04 Failings of Traditional Weapons Detection and Screening Approaches

04 The Consequences of Siloed Traditional Security Approaches

05 Next-generation Weapons Screening, Monitoring, and Management

INTRODUCTION

Challenges

Healthcare organizations experience workplace violence more than any other industry. Hospital and other healthcare-related settings experience elevated stress levels for patients, their families, and friends, which is exacerbated by issues such as substance abuse, mental health disorders, homelessness, and violent crimes and traumatic incidents tied to sexual abuse, domestic violence, gang activity, gunshots, and stabbings.

Unfortunately, a surge in violence against healthcare caregivers and ancillary staff also accompanied the COVID-19 pandemic. Even before the pandemic, healthcare workers faced a disproportionate percentage of workplace violence—73% of all nonfatal injuries from workplace violence in the U.S. occurred within healthcare sites in 2018.¹ In the same year, the American College of Emergency Physicians / Emergency Nurses Association revealed that nearly 50% of its members have been assaulted, and 70% of emergency room nurses reported being hit or kicked on the job.²

These numbers only increased during the pandemic. For example, the National Nurses United regularly surveys its 15,000 members. About nine months into the pandemic, 20% of registered nurses in the U.S. said they face increased on-the-job violence, which they attribute to staffing shortages, changes in the patient population, and restrictions for visitors.³ This number increased to 22% in March and then again to 31% in July.⁴

“**The percentage of registered nurses who experienced on-the-job violence spiked 55% in six months in 2021.**”

Weapons Detection and Screening Gaps in Healthcare

Not surprisingly, weapon-related violence during COVID-19 surged 30% over the previous year.⁵ Data from the Gun Violence Archive shows that between April 2020 and July 2021, there were 343 more mass shootings (viz., where four or more people were killed or injured), 217 people killed, and 1,498 people injured in the U.S. than expected.⁶

All of this translates into increased risk to healthcare facilities. Patients and visitors must be screened in order to detect weapons on their bodies and bags. However, according to a recent report, only 11% of hospitals employ walk-through metal detectors staffed by security personnel. Further, even though handheld wands are used at a higher ratio, with half of hospitals indicating they use them, many are only used in select instances for high-risk individuals such as those with restraining orders, orders of protection, or trespass warnings against them, terminated at-risk employees, or those who have committed an act of workplace violence in the past.⁷ This limited use

leaves serious security risk, as a significant number of individuals entering a healthcare facility are not screened for weapons.

“**Only 11% of hospitals have security screening solutions in place, and only 50% use hand-held wands for ingress screening.**”

Failings of Traditional Weapons Detection and Screening Approaches

Putting aside poor adoption rates, these walk-through metal detectors and handheld wands are intrusive and fraught with inefficiencies. They are based on decades-old technologies that require significant time and resources to manage, deliver poor experiences for patients, visitors, and staff, and create security risks.

Walk-through metal detectors cannot scale to support screening volumes at healthcare facilities. This can delay patient care, which is particularly concerning for patients arriving with serious medical conditions. For family members and visitors, the ingress delays and resulting queues heighten anxiety and frustrations. When a potential weapon is detected, walk-through metal detectors are unable to tell the difference between everyday metal items and actual weapons. Further, they cannot determine the location of the potential weapon on a person's body or bag. Security personnel, as a result, must search the entire body and any bags to locate the potential threat. Hand-held wands also require numerous security staff and moreover are highly intrusive, requiring physical contact with every person passing through security screening.

Concerns about physical contact resulting from security-line queues, bag checks, and hand-held wand checks are much greater today due to COVID-19.⁸ Physical interactions with security staff and potential exposure to patients, visitors, families, and healthcare staff to infectious

diseases like COVID-19 is a focus for many healthcare facilities. However, physical contact is a problem with traditional weapons screening methods, which also run counter to the commitment of healthcare organizations to respect patient autonomy.

Walk-through metal detectors typically generate a high volume of security alarms. While this is a problem for any industry or environment with a walk-through metal detector, it is particularly problematic in healthcare where alarms are a regular occurrence. Over time, security staff can experience alarm fatigue—which can impact the effectiveness of secondary checks conducted by the security team. Walk-through metal detectors are also for indoor use only and lack the flexibility needed for organizations that need to move them between locations. Finally, traditional screening systems do not provide analytics and insights, such as the number of entrants, entrance fluctuations based on day, time, and events, and analytics involving alarm rates, used to improve staff efficiencies and screening effectiveness.

The Consequences of Siloed Traditional Security Approaches

Traditional security approaches are siloed. Weapons screening systems and processes are typically not integrated with video security systems.

As a result, security teams lack a source for centralized intelligence that combines video analytics and weapons screening into one hub. Without this centralized intelligence, security teams cannot employ artificial intelligence (AI) to correlate the data and use predictive analytics to manage risks and react in real time to threats when they occur.

“Threat detection rates for the majority of security operators fall to less than 5% after the first 20 minutes.”¹⁰

¹ “Fact Sheet: Workplace Violence in Healthcare, 2018,” U.S. Bureau of Labor Statistics, accessed December 20, 2021.

² Tony W. York, “Combating Patient-Generated Violence with Safe Hospital Design,” SecurityInfoWatch.com, March 2, 2021.

³ “National nurse survey exposes hospitals’ knowing failure to prepare for a Covid-19 surge during flu season,” National Nurses United, November 12, 2020.

⁴ “National nurse survey reveals that health care employers need to do more to comply with OSHA emergency temporary standard,” National Nurses United, September 27, 2021.

⁵ Alan Mozes, “U.S. Gun Violence Jumps 30% During the Pandemic,” U.S. News & World Report, October 22, 2021.

⁶ “Gun Violence Archive,” accessed December 28, 2021.

⁷ Ed Davis and Jamie Morgan, “2018 Hospital Security Survey: Data shows that hospitals are making important strides in safety as they respond to risks,” Health Facilities Management Magazine, November 9, 2018.

⁸ “Physical Security Vertical Market Assessment: Health Care,” OMDIA and SIA, accessed December 27, 2021.

Lack of integration of walk-through metal detectors and the ability to generate actionable intelligence may be one reason that security incidents, which includes those involving weapons, are not tracked and reported to executive staff and their board of directors. According to one recent survey, only 17% of boards of directors track and measure physical security. Less than one-third of healthcare organizations track and report security at the CEO level. Indeed, for over half of the survey respondents,

security is tracked and reported no further than the leaders of the building and maintenance teams. A critical outcome is that healthcare organizations cannot reduce their security liabilities, quantitatively demonstrating that they have the security systems and controls in place to protect patients, visitors, families, and staff from violence. This situation is an even greater problem for healthcare facilities located in areas of high crime and violence.

Next-generation Weapons Screening, Monitoring, and Management

Healthcare weapons screening solutions must balance the need to protect patients, staff, visitors, and assets against providing a welcoming environment and ensuring rapid delivery of quality medical care.

Yet, because healthcare organizations experience higher rates of workplace violence than other industries, doing so is a substantial challenge. COVID-19 complicates the situation: healthcare providers must treat higher numbers of patients while upgrading security processes. One of the ways healthcare organizations can meet these challenges is by integrating and consolidating physical security systems and data into a single pane of glass.

Healthcare organizations can now leverage the Evolv Technology weapons detection solution that combines powerful sensor technology with proven artificial intelligence (AI), security ecosystem integrations, and comprehensive venue analytics to ensure safer and more accurate threat detection at an unprecedented speed and volume.

Evolv's weapon detection solution integrates best-of-breed Evolv technologies as well as third-party integrations for touchless security screening, video security management, and AI-enabled insights that empower healthcare organizations to proactively manage weapons threats. Components from Evolv include the Evolv Express® weapons screening system, the Evolv Cortex AI™ software platform that integrates and processes data from multiple sensors and is constantly learning, and the Evolv Insights™ analytics dashboard that delivers consolidated weapons screening system performance, visitor flow, and location-specific performance.

Touchless Weapons Screening

The Evolv weapons detection solution enables healthcare organizations to accelerate physical security screening while maintaining the highest degree of weapons detection accuracy. Evolv Express systems deliver a touchless weapons screening experience in healthcare environments with the ability to screen up to 3,600 people per hour—10x more than walk-through metal detectors. Patients can flow seamlessly through security screening to quickly get the care they need, while healthcare staff and visitors can walk through at a natural pace.

“ The Evolv Express system can screen up to 10x the number of people per hour compared to walk-through metal detector solutions while using 70% fewer security staff. ”

⁹ "State of Physical Security and Its Convergence with Cybersecurity in Healthcare," Fortinet, February 11, 2019.

¹⁰ Dianne Dukette and David Cornish, *The Essential 20: Twenty Components of an Excellent Health Care Team* (Simi Valley, CA: RoseDog Books, 2009).

Key capabilities Evolv offers healthcare organizations include:

- **Accurate threat detection.** Evolv's weapons detection system is powered by high-speed sensors and Evolv Cortex AI™ software that identifies threats in real time without requiring patients, visitors, and staff to stop, empty their pockets, and remove and open their bags. It knows the difference between ordinary everyday items like smartphones, keys, and coins versus weapons. Aggregated data is analyzed in a controlled environment using machine-learning algorithms overseen by the Evolv R&D team and utilized by Cortex AI to differentiate true threats from harmless objects in real time.
- **Touchless experience.** When a potential threat is detected, the Evolv Express system delivers an image to security personnel on a tablet in real time. The image includes the location of the threat on the body of the person or the bag of the person. Traditional weapons screening requires security staff to search the person's entire body and bag for the potential threat, whereas only the designated location of the threat needs to be searched by healthcare organizations using an Express system. As there are heightened sensitivities around physical contact due to COVID-19, the ability to deliver touchless experiences to patients, visitors, and staff is especially important to healthcare organizations.
- **Flexible, portable use.** The Evolv Express system can be used indoors and outdoors and can be quickly and easily relocated and configured—both single and dual lanes—in new settings. This benefits healthcare organizations that need to set up new ingress areas for events and other activities (e.g., testing areas for COVID-19 infections and emergency management incidents). Additionally, the Evolv Express system can be configured with five different detection sensitivity settings that healthcare organizations can dial up or down based on threat levels.
- **Insights and analytics.** Evolv's weapons detection solution provides healthcare facilities with Evolv Insights™, a powerful analytics dashboard used to comprehensively review, analyze, and gather insights captured during weapons detection and screening. Available data includes visitor arrival curves and counts (viz., how many people entered and at what time down to the level of five-minute intervals), system detection performance, alarm statistics, and detection settings. This data is used by healthcare security and operations personnel to make evidence-based decisions that streamline staffing operations, improve patient, visitor, and employee flow, and optimize ingress safety and experience.

Integrated Weapons Detection, Video Surveillance, and Facial Recognition

The Evolv Cortex AI software platform is built so that healthcare organizations can build application programming interfaces (APIs) to enable interactions with third-party systems and applications. One area of value is the ability to deliver security alarms from Express systems to video security management systems. Security operations screeners are notified of a detected weapons threat and can view the incident in real time via live streamed video cameras mounted on the towers of the Express system.

Further, the video feed from the cameras installed on the Express towers can be used to supplement feeds from fixed cameras in the healthcare facility.

Healthcare organizations can transfer analytics data captured by the Evolv Express system into their video surveillance system. This delivers a single pane of glass for weapons detection and video surveillance systems that security operations personnel can use to coordinate

¹¹ "New and Revised Workplace Violence Prevention Requirements," The Joint Commission, June 18, 2021

incident response—using communications channels like email, text, two-way radios, mobile phones, and chat.

API integration of weapons detection data with facial recognition data is another area that can deliver positive outcomes for healthcare organizations. Security teams can create watch lists of terminated at-risk employees, individuals who have committed acts of workplace violence

in the past, and those with orders of protection, restraining orders, and trespass warnings issued against them.

Facial recognition identifies every person on a watch list and alerts the security team immediately via integration with video surveillance systems so that they can deploy appropriate resources to respond in the moments that matter most.

Additional Resources:

- [Evolv Express Solution Brief](#)
- [Evolv Health & Safety Document](#)
- [Evolv Insights Solution Brief](#)
- [Evolv Request Assistance Feature Brief](#)
- [Evolv Situational Awareness Cameras Feature Brief](#)
- [Milestone VMS Integration Brochure](#)
- [MyEvolv Portal Feature Brief](#)
- [Titan HST Integration Brochure](#)

[Contact us](#) to learn more about how to protect your workforce and facilities with touchless security screening.

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