

University of Houston School of Dentistry Automates Dental Instrument Kit Distribution with Smart Lockers

The University of Houston School of Dentistry, located in the Houston metropolitan area, partnered with Southwest Solutions Group to implement a Smart Locker System powered by Keynius software. The solution automates secure distribution, tracking, and return of procedure-specific dental instrument kits while improving accountability and reducing manual administrative work in a high-volume clinical education environment.

INDUSTRY

Education

Dental education and clinical training environment where students require secure access to assigned instruments, supplies, and procedure kits.

LOCATION

Houston, Texas

Smart locker installation supporting School of Dentistry clinical support operations in the Greater Houston area.

FACILITY TYPE

Dental School Clinical Support Area

Centralized support environment for preparing, distributing, returning, sterilizing, and replenishing dental instrument kits.

SOLUTION

Smart Locker System

Secure self-service lockers with student authentication, assigned compartment access, return processing, automated alerts, and web-based management visibility.

PRODUCTS USED

2 locker banks, 138 doors, 2 kiosks

The system included smart locker compartments, kiosk control panels, RFID authentication readers, barcode scanners, and the Keynius Smart Locker Software Platform.

OPERATIONAL GOAL

Automate Instrument Kit Distribution and Returns

The project was designed to reduce manual administrative work, improve chain-of-custody accountability, and give students secure access to assigned procedure kits.

THE PROBLEM

Manual Dental Kit Distribution Created Bottlenecks and Tracking Gaps

Before the smart locker project, the School of Dentistry used a centralized manual process to distribute and collect dental instrument kits. Staff assembled procedure-specific kits, verified student identities, issued materials, tracked returns, and resolved discrepancies throughout the day. As clinical activity increased, this workflow required significant administrative effort and limited real-time visibility into kit status.

01

Students needed reliable access to specific instruments, supplies, and procedure kits for scheduled clinical procedures.

02

Staff manually verified student identity and matched each student to the correct procedure-specific kit before issuing materials.

03

Peak distribution periods created congestion at the centralized supply area and made dental instrument tracking more difficult.

THE SOLUTION

Smart Lockers Streamline Dental Instrument Kit Distribution

Southwest Solutions Group provided a Smart Locker System powered by Keynius software to replace the staffed handoff process with a controlled self-service workflow. Staff load assigned kits into secure compartments, students authenticate with university credentials, and the system records each dental instrument kit transaction from pickup through return.



SOLUTION

WHAT WE INSTALLED

Procedure-Specific Kit Assignment

Each dental instrument kit is prepared for a specific clinical procedure and assigned to a specific student. After the kit is loaded into a locker compartment, the Keynius Smart Locker Software Platform notifies the student that it is ready for pickup.

WHY IT FIT

Students use university-issued credentials at the kiosk to access only their assigned compartment. RFID readers and barcode scanners support secure verification and automated transaction logging.

OPERATIONAL IMPACT

Students retrieve assigned kits and return used kits through the locker system without requiring a staffed counter handoff for every transaction.

Implementing Smart Lockers in a Busy Dental School

The implementation required coordination between School of Dentistry stakeholders, university facilities, IT personnel, and the Southwest Solutions Group implementation team. The project focused on moving from manual distribution to an automated smart locker workflow while minimizing disruption to daily clinical and educational operations.

01

SITE COORDINATION

Workflow Planning

Southwest Solutions Group worked with university stakeholders to finalize locker configurations, Keynius software workflows, authentication requirements, and installation logistics.

02

PLANNING

System Installation and Commissioning

The installed system included two smart locker banks with 138 secure locker compartments and two kiosk control stations equipped with RFID and barcode authentication technology.

03

EXECUTION

Network and Software Validation

Hardware installation, system commissioning, network connectivity, and software validation were completed to confirm the smart locker system was ready for operational use.

04

HANDOFF

Staff and Administrator Training

Training covered kit loading and assignment, student pickup and return workflows, user management, permissions, reporting, audit trails, overdue notifications, damage reporting, and real-time monitoring through the web portal.

RESULTS

Results: Faster Kit Distribution and Better Accountability

The Smart Locker System transformed how dental instrument kits are distributed, tracked, and returned. Staff spend less time managing manual handoffs, students retrieve assigned kits independently, and administrators have complete visibility into every transaction. The automated workflow also improves accountability, supports chain-of-custody documentation, and provides a scalable solution for growing clinical programs.

PRIMARY OUTCOME

Streamlined Instrument Distribution

Staff prepare and load procedure-specific dental instrument kits in advance while students independently retrieve assigned kits after receiving automated pickup notifications.

WORKFLOW

Reduced Administrative Work

The Keynius Smart Locker Software Platform automates student verification, locker assignments, transaction logging, return tracking, overdue notifications, and reporting, allowing staff to focus more time on sterilization, inventory management, and student support.

ORGANIZATION

Complete Chain-of-Custody Tracking

Every dental instrument kit transaction is automatically recorded, providing complete visibility into who loaded each kit, who retrieved it, when it was checked out, and when it was returned.

LONG-TERM VALUE

Faster Student Access

Students securely access assigned procedure kits using their university credentials without waiting at a staffed service counter, improving efficiency during busy clinic schedules.

PROJECT PHOTOS

Smart Locker Installation for Dental Instrument Management

Project photos highlight the smart locker system used to securely distribute, track, and return procedure-specific dental instrument kits at the University of Houston School of Dentistry in Houston, Texas.



READY TO SOLVE A SIMILAR PROBLEM?

Ready to Automate Instrument Distribution and Asset Tracking?

Southwest Solutions Group designs Smart Locker Systems that automate secure pickup, returns, user authentication, asset tracking, audit reporting, and real-time management visibility.

Whether you're managing medical instruments, dental procedure kits, IT equipment, tools, or shared assets, our specialists can help design a smart locker solution that improves accountability while reducing manual administrative work.