Integrated Cloud-Based Solution for Clinical Information Management

QBurst developed a HIPAA/HITECH compliant tablet application to digitize data capture during medical procedures, significantly improving staff utilization, OR efficiency, and the accuracy of billing processes.

Overview

QBurst replaced paper-based systems with a HIPAA-compliant tablet application, fundamentally changing how anesthesiologists manage medical data.

Digitized Workflow: The solution modernized data capture, covering vital signs, medications, and clinical events directly on a tablet, eliminating paper forms.

Billing Accuracy: Automated the paperless billing process, ensuring legible documentation and eliminating missing claims.

Clinical Outcomes: The compliant application significantly improved staff utilization, OR efficiency, and overall OPPE (Ongoing Professional Practice Evaluation) metrics.

Client Profile

Our client is a leading single specialty anesthesia services management company in the United States. They provide perioperative support and comprehensive clinical anesthesia services.

Challenges

- **Inefficient Data Capture:** Anesthesiologists used paper forms to capture data (vital signs, medications) during procedures, leading to legibility issues and transcription errors.

- **Delayed Billing and Claims:** Manual data consolidation significantly delayed the bill submission process, increasing the risk of missing claims and impacting revenue cycles.

- **Safety and Decision Support:** The manual system lacked automated decision support, such as real-time risk alerts or allergy notifications, potentially compromising patient safety.

- **Compliance Risk:** Managing, storing, and accessing paper records complicated compliance with stringent HIPAA/HITECH regulatory standards.

QBurst Solution: Digital Clinical Data Capture with Cloud-Integrated Mobile Devices

QBurst developed a cloud-integrated tablet application (iOS) that facilitates digital data entries during medical procedures involving anesthesia. The solution provides a complete, paperless workflow for anesthesiologists, from case reconciliation to final documentation. Data entered via the app is synced to the backend server at regular intervals, maintaining data integrity and availability.

Key Solution Components

- **Digital Data Capture:** Facilitates the digital logging of patient risks, allergies, case details, medications, fluids, and complications (intra-OP, PACU, post-PACU).

- **Provider Workflow Tools:** Includes a break feature to assign cases, QR code scanning for patient identification, attestation to replace signatures, and templates to pre-populate values for new cases.

- **Compliance Features:** Implemented a 'Soft Close' option to ensure mandatory information and billable events are captured before case closure, streamlining billing accuracy.

- **Secure Backend Integration:** The iOS frontend utilizes a Java and Spring backend with MySQL for robust data storage and retrieval.

Technical Highlights

- **Offline Capability:** The application features an offline mode, ensuring critical data capture continues uninterrupted even in areas with poor network coverage.

- **Case Reconciliation:** The app lists assigned medical cases daily and facilitates real-time reconciliation against the registry.

- **Timestamping and Attestation:** Features for timestamping procedure milestones and digital attestation replace manual signatures, ensuring accurate record auditing.

- **Seamless Data Transfer:** Supports Bluetooth transfer of cases between providers and includes a print option via AirPrint for necessary hard copies.

Impact: Streamlining Operations With Improved Efficiency and Productivity

- **Improved Accessibility and Productivity:** Improved accessibility to data resulted in productivity and efficiency gains, estimated at 60% for clinical staff.

- **Enhanced Billing Accuracy:** Automated paperless billing and legible documentation eliminated missing claims, improving accuracy in coding and reducing time to bill submission by 45%.

- **Streamlined Operations:** The digitized system improved staff utilization and OR efficiency by 50%, ensuring a smoother perioperative workflow.

- **Improved Clinical Outcomes:** Streamlined information flow essential to the accuracy of reporting and compliance led to improved clinical outcomes.

- **Eliminated Revenue Leakage:** The "soft close" feature ensured the capture of all billable events, effectively eliminating missing claims.