Largo Solutions 2025

**Comprehensive Laboratory Operations Solution Summary**

The document presents an integrated approach to transform Largo Lab's operations from reactive crisis management to proactive quality control using Microsoft's ecosystem. Here's a detailed breakdown of the unique solutions:

**Core Technology Infrastructure**

The foundation is a **"Largo Lab Operations Command Center"** built within Microsoft Teams, serving as a unified digital hub that replaces manual processes with automated workflows. This leverages existing Microsoft licenses through Power Apps, Power Automate, SharePoint, Power BI, and Teams integration.

**Primary Operational Solutions**

**1. Pending Inquiry Management System**

* Creates a SharePoint-based live log for incomplete tests with patient IDs, assigned technicians, and status tracking
* Power App interface allows techs to log and resolve pending tests in real-time
* Automated escalation triggers after 1 hour of inactivity, alerting managers and logging in Notion CA tracker
* Interactive Power Pages hub provides video guides and mandates quiz completion before task assignment
* Expected outcome: 90% reduction in backlog with 100% staff training compliance

**2. Inventory Control & Supply Chain System**

* Real-time "Inventory Hub" Power App displays live stock levels with visual indicators (e.g., "Reagent X: 5/50")
* Automatic alerts trigger when inventory falls below predetermined thresholds
* One-click reordering system generates automated emails to inventory managers with urgency levels
* IOU tracking mechanism monitors borrowed items with 48-hour return reminders
* Expected outcome: Complete elimination of stockouts and 75% reduction in delays

**3. Dynamic Workforce Scheduling Platform**

* Centralized SharePoint database containing shifts, lab assignments, QC schedules, and maintenance tasks
* "Shift Manager" Power App enables staff to report absences and request shift swaps
* Automated reassignment system updates schedules and notifies affected staff via Teams
* Floater auto-assignment prioritizes critical labs (MOB/AUC) during call-outs
* Expected outcome: 95% of call-outs resolved within one hour with 100% QC compliance

**Quality Control & Compliance Framework**

**QC Lockout Implementation**

* Analyzers programmatically locked until daily QC is completed and documented
* Two-person verification requirement for critical results
* Physical QC status boards with red/green indicators at lab entrances
* Time-stamp verification for all maintenance activities

**Break Tracking & Compliance System**

* "Break Tracker" Power App with timestamped check-in/check-out functionality
* Automated enforcement alerts managers when breaks exceed limits
* Progressive alerts: 14-minute warning, automatic escalation after 2 hours
* Power BI metrics correlate break compliance with phlebotomy idle time
* Expected outcome: 90% break compliance rate

**Staff Performance & Accountability Measures**

**Individual Performance Scorecards**

* Tracks samples processed per hour, TAT performance, idle time percentage, and error rates
* Distinguishes between self-reported and hidden errors
* Automated documentation for HR proceedings
* Recognition systems for top performers

**Progressive Discipline Framework**

* Data-driven performance conversations with metrics-based improvement plans
* "Show Me" policy requiring immediate demonstration when staff claim lack of knowledge
* Quarterly competency verification with mandatory retraining for deficiencies
* Laminated step-by-step procedure cards chained to each instrument

**Physical Lab Reorganization**

**Zone-Based Layout Design**

* STAT Zone positioned closest to receiving for Chemistry tests
* Separated Hematology/Coag Zone with buffer space
* One-way specimen flow in Pre-Analytics Zone
* Specialized Zone for urinalysis, molecular, and blood bank
* Visual management through floor markings and station assignments

**Two-Tech Evening Shift Model**

* "Hot Bench/Support Bench" system with mandatory 2-hour rotations
* Tech 1 handles Chemistry, processing, and blood bank emergencies
* Tech 2 manages Hematology/coag, urinalysis, manual tests, and backup
* Batch processing every 30 minutes during peak hours

**Advanced Analytics & Monitoring**

**Power BI Command Dashboard**

* Real-time TAT percentage gauges with shift-adaptive thresholds
* Staff location heat maps showing current assignments
* QC compliance status by instrument
* Wait times by station with bottleneck identification
* Monthly trend reports with improvement recommendations

**Predictive Analytics Features**

* AI-powered prediction of performance issues before occurrence
* Volume forecasting for proactive resource allocation
* Equipment maintenance scheduling based on usage patterns
* Staffing optimization using historical data patterns

**Implementation Metrics & Timeline**

**30-Day Achievements**

* QC compliance increase to 85% (from ~60%)
* TAT success improvement to 65% (from 30-50%)
* Break violations reduced to <5/day (from ~20/day)
* Staff idle time decreased to <40% (from 50%)

**90-Day Goals**

* TAT compliance reaching 90% target
* Zero hidden errors policy fully enforced
* Predictive staffing optimization activated
* Sustainable proactive management established

**Cost-Benefit Analysis**

The solution requires approximately $1,520/month for 40 users, delivering:

* 2-3 hours daily management time recovered
* 75% reduction in errors
* 40% improvement in TAT
* Enhanced staff retention through improved accountability
* Elimination of delayed results and missed specimens

This comprehensive framework transforms laboratory operations through systematic automation, creating a shift from reactive troubleshooting to proactive quality assurance while maintaining cost-effectiveness through existing Microsoft licenses.