

New Technology Automates The Vaccination Workflow

Operating an Effective and Profitable Vaccine Business Within Your Healthcare Practice

“Managing vaccine in our clinics is a major, expensive headache for everybody involved.”

Kenny Scott, Sr. Director,
Pharmacy Operations and
Shared Services, Scripps
Health

Running a successful and profitable vaccine business within your practice requires significant investment in vaccine inventory. Storing and handling this inventory requires specialized equipment and extensive non-clinical activities, which are time consuming for your staff and costly to your practice.

What if you could automate these activities? What if your healthcare staff could focus more on patient care instead of tracking, documenting and reporting vaccine inventory? What if you could do all this and save significant vaccine inventory costs?

A team of engineers and designers from Silicon Valley asked just these questions. Together with physicians, nurses, practice managers and vaccine industry experts, they designed a fully-automated vaccine storage and handling system.

Vaccine Inventory Cost

The vaccine business requires significant investment in vaccine inventory. The American Academy of Pediatrics (AAP) says that between \$10,000 and \$15,000 of on-hand vaccine inventory is required per pediatrician or other provider of immunizations.¹ It is therefore common for you to need to maintain upwards of \$100,000 of vaccine inventory at a single practice location.

Vaccine is fragile, and potency is protected through careful storage and handling within very specific temperature ranges. Because vaccine storage and handling processes meant to protect vaccine are so numerous, detailed, repetitive, and complex, it is not uncommon for a you to waste thousands of dollars annually based on simple human errors. One study conducted by the Centers for Disease Control and Prevention (CDC) estimated that at least 1% to 5% of vaccine inventory is wasted operating a vaccine business.² Each year, you face the risk of losing thousands of dollars through simple, avoidable vaccine storage and handling glitches.

Cost of Maintaining a Vaccine Inventory

To properly safeguard vaccine inventory, specialized storage equipment and temperature monitoring devices are needed. Plus, constant tracking and monitoring is required. You could also be subject to special supplemental requirements for documenting and reporting your vaccine inventory, such as within the Vaccines For Children (VFC) program. This specialized equipment, monitoring, and reporting impose time-consuming, hidden costs of vaccinating your patients.

"Our group spent around \$1 million to buy vaccines last year and has close to \$400,000 worth sitting in its refrigerators at any time." It is our second largest expense behind employee salary and benefits

Herschel Lessin MD,
Founding Member and Vice
President, Childrens
Medical Group

¹ The Business Case for Pricing Vaccines, American Academy of Pediatrics, Revised March 2012

² Frequency and causes of vaccine wastage, Vaccine 20 (2002) 1148-1156

Specialized Storage Equipment Costs

Excessive heat, cold, or light exposure damages vaccines, reducing or destroying potency. Every time a conventional refrigerator or freezer door is opened, vaccine storage temperature is affected. In a busy office, where staff are frequently accessing vaccine for administration to patients or for inventory management tasks, the constant change in vaccine storage conditions risks compromising vaccine potency and strongly supports consideration of implementing specialized storage equipment.

"The price I pay for vaccines accounts for only a portion of their true "cost". That "cost" for me, as a solo pediatrician, is 30% of my overhead."

Robin Warner, MD
Union Pediatrics

Your expensive vaccine inventory is also subject to a complete, catastrophic loss due to equipment failure or power outage.

To safeguard against these vaccine inventory risks, the CDC recommends modifications to the standard household refrigerator or specialized storage equipment. The CDC also recommends the purchase of emergency equipment such as backup generators and alarms.³ This specialized equipment is a necessary increase to the cost of managing a vaccination business.

Temperature Monitoring and Reporting Costs

To ensure your vaccine inventory has maintained the proper temperature, you need to continuously monitor and document vaccine inventory temperature and storage conditions. Specialized temperature monitoring devices and data loggers are recommended by the CDC and required by the VFC program.⁴ The VFC program also requires providers to maintain historical records of temperature.

^{3, 4} Vaccine Storage and Handling Toolkit, Centers of Disease Control, May 2014, <http://www.cdc.gov/vaccines/recs/storage/toolkit/storage-handling-toolkit.pdf>

Inventory Management and Accounting

In addition to safeguarding your vaccine inventory and monitoring its storage conditions, you need to manage and account for your costly inventory. This is critical to ensure you control your vaccine inventory expense.

As mentioned previously, you have a significant investment in vaccine inventory. This upfront, out-of-pocket cost should be minimized to the extent possible while ensuring vaccine is always available in the clinic. However, given there are potentially up to 17 different types of vaccines you need to inventory in the clinic, proper accounting is always time consuming. And if you are participating in the VFC Program, a separate inventory needs to be maintained, which because of the specific requirements of this program, can more than double the effort.

You need to ensure healthcare staff use the vaccine inventory closest to expiration first, and every dose administered needs to be tracked back to practice management billing systems and accounted for under the VFC program. Small, continuous errors potentially waste thousands of dollars in expired vaccine inventory and missed vaccine billing.

All of this management and accounting of your vaccine inventory requires daily procedures and processes that add time burdens to an already busy healthcare staff, time that would be better spent on tasks more directly associated with patient care.

Total Vaccine Storage and Handling Costs

Vaccination is an important, necessary component of your healthcare practice. However, all the time and costs associated

“Proper storage and handling of vaccines is critical to an efficient and effective vaccination business within a healthcare practice. Having the right equipment, processes and procedures is the key to running a profitable business.”

Susanne Madden, CEO
The Verden Group
Practice Management
Consulting

with properly storing and handling vaccine places a large burden on healthcare staff and practice finances.

When you add up all the costs of vaccine inventory wastage, specialized storage and temperature monitoring equipment, and the hidden costs of healthcare staff time, the annual costs of vaccinating patients is significant.

A study conducted by The Verden Group, a healthcare practice management consulting firm, quantified the costs of vaccine storage and handling. In this study, the annual costs of vaccine storage and handling at an average sized primary care practice of 3 providers was \$4,100. When added to the potential costs of vaccine wastage and missed billing, a moderately sized healthcare practice is spending somewhere in the neighborhood of \$16,000 annually.

Annual Vaccine Storage and Handling Costs

	Activity	Cost
Vaccine Inventory Wastage and Missed Billing (Assumes \$500,000 Annual Vaccine Purchases)	2.5% Through Human Error in Vaccination Workflow	\$12,500
Specialized Storage Equipment*	Specialized Refrigerator and Freezer	\$240
	Back up Generator	\$220
	Alarms	\$180
Temperature Monitoring and Reporting	Specialized Monitoring Devices and Data Loggers*	\$260
	Thermometer Calibration	\$150
	Cost of Healthcare Staff Time	\$350
Inventory Management and Accounting	Cost of Healthcare Staff and Time	\$2,700
Total Cost		\$16,600

*Annual cost amortized over 5 year life of equipment

How Would You Design A Better Vaccine Storage And Handling Solution?

When TruMed Systems, a team of engineers and designers with deep experience in healthcare automation, learned of the costs and burdens of vaccine storage and handling, they asked just this question.

"We come from the belief that design really matters. And thinking through how we get the best technology, the best user experience."

Gene Baker, Co-Founder
TruMed Systems

They started with a clean slate. They assembled a network of physicians, nurses, practice managers and vaccine industry experts, and set about designing AccuVax™ a fully-automated vaccine storage and handling solution.

AccuVax was designed specifically for storing and dispensing vaccine. It stores refrigerated and frozen vaccine; single and multi-dose vials and pre-filled syringes; fully liquid vaccine and vaccine requiring reconstitution with a diluent. It stores and tracks each dose at the exact manufacturer recommended temperature and dispenses them with the touch of a button.

AccuVax's high-performance refrigeration design protects vaccine. AccuVax automatically handles all inventory management and dispenses vaccine for patients quickly and easily.

AccuVax is equipped with 8 temperature sensors that continuously track and monitor your inventory. Its temperature control and monitoring system is equipped with alarms, pro-active alerts via text and/or email, and a backup battery. It also provides complete historical reporting of temperature history. Your vaccine inventory is fully safeguarded, minimizing the risk of costly vaccine

wastage. And healthcare staff are free from the burden of manual tracking and reporting.

The fully-integrated software manages and controls every vaccine vial and syringe from the moment it is loaded into AccuVax in the clinic until it is administered to a patient. Each dose of vaccine is tracked by vaccine type, lot number and expiration date. Separate vaccine inventories are maintained for your private and VFC patients and all of this is done in a single integrated AccuVax unit with one simple, intuitive workflow.

Vaccine is automatically dispensed with vaccine nearest expiration dispensed first, reducing the cost of expired vaccine. Inventory levels are continuously monitored with automatic reorder notifications. You can now reduce the required inventory levels, decreasing the working capital tied up in vaccine inventory, while ensuring no stock-outs occur.

AccuVax provides controlled access and physical security for vaccine and is HIPAA compliant. Its' biometric ID system allows immediate fingerprint authentication for easy loading and dispensing. The automated vaccine inventory reporting provides you the information to manage and control your inventory and meet regulatory reporting requirements accurately and quickly.

Employing AccuVax in the clinic saves thousands of dollars in annual vaccine inventory expense. Its fully-automated and integrated design decreases the cost and hassle of "piecemeal" specialized storage and monitoring equipment. Best of all, AccuVax saves time so your healthcare staff can focus on quality patient care.

"AccuVax is the right solution to help standardize processes, automate vaccine tracking, and protect against spoilage and waste."

Kenny Scott, Sr. Director,
Pharmacy Operations and
Shared Services, Scripps
Health

AccuVax Automation

	Feature	Benefits to You
Designed Specifically for Storing and Dispensing Vaccine	Stores Refrigerated and Frozen Vaccine; Vials and Syringes	Complete Flexibility in Vaccine Inventory
	Custom Engineered Cooling System	Ensures High Quality, Potent Vaccine for Patients
	Biometrically Secured One Touch Loading and Dispensing; Intuitive	Easy and Time Saving for Healthcare Staff
Temperature Monitoring and Reporting System	Specialized Monitoring Sensors and Data Loggers	Saves Time and Money Versus Purchasing "Piecemeal" Specialized Equipment
	Integrated Alarms, Notifications and Backup Battery	Saves Significant Vaccine Wastage Cost
	Complete Data Capture	Accurate and Quick Regulatory Reporting
Inventory Monitoring and Tracking	Each Dose Tracked and Monitored by Vaccine Type, Lot Number and Expiration Date	Simple and Accurate Vaccine Inventory Control and Management
	Tracks Purchased and VFC Vaccine in One Unit	Decreases Healthcare Staff Time Tracking Multiple Inventories
	Automated Reorder and Reporting	Minimizes Cash Tied Up in Vaccine Inventory

Get AccuVax Now

AccuVax was introduced at the American Academy of Pediatrics (AAP) annual meeting this Fall to rave reviews. Pediatricians saw first-hand how AccuVax decreased the cost and time burden of vaccination while enabling them to provide higher quality care to their patients. No one knows better than a Pediatrician what it takes to operate an effective and efficient vaccine business.

AccuVax is to current vaccine storage and handling practice what a smart cell phone is to a conventional landline phone.

Contact [TruMed Systems](http://TruMedSystems.com) or email Tom Netzer, General Manager at Thomas.Netzer@TruMedSystems.com to see how AccuVax enables you to operate an effective and profitable vaccine business.