

How Taking an Accounting Lens to Warehouse Management Boosted Performance and Morale in Haiti

When medicines go missing, patients lose out. Many organizations managing public health supply chains rigorously structure their financial transactions to avoid fraud, waste and abuse. In many instances, the volume of capital tied up in physical products in the warehouse is of significantly higher value than most public health program bank accounts and potentially more vulnerable due to the nature of its handling.

By taking an accounting lens to warehouse management, programs can effectively mitigate risks and prevent leakage and wastage of products.



Warehouse officers conducting an inventory check at the GHSC-PSM warehouse in Port Au Prince, Haiti. Photo by GHSC-PSM/Nadia Todres

Over the last decade, Haiti has faced numerous challenges--from political instability to security issues in Port Au Prince, to environmental disasters. Since 2016, the **USAID Global Health Supply Chain Program – Procurement and Supply Management (GHSC-PSM) project** has operated Haiti's central warehouse for HIV/AIDS, family planning and reproductive health, and maternal, newborn and child health commodities. The warehouse processes approximately \$30M product transactions (receipt and dispatch) annually, consisting of more than 300 different items (SKUs), dispatched to 270 health facilities across the country.



\$30M
Product Transactions

300+
List Items (SKUs)

270
Health Facilities



Many of these commodities take a long time to move from the ordering stage through manufacturing to shipping and finally to the warehouse door, so ensuring they are not lost, damaged, or stolen while within the warehouse's chain of custody is critical.



Warehouse pharmacist Charline D. Carolus downloads temperature data from a USB data logger to her computer for analysis.
Photo by GHSC-PSM/Nadia Todres



Beatrice Jean Pierre Delva, Senior Distribution Officer (in yellow cap), scans a GPS tracker using the DTT application on her phone.
Photo by GHSC-PSM/Nadia Todres



Warehouse operative moves goods on a pallet jack from the reception area to the racking storage area within the GHSC-PSM warehouse.
Photo by GHSC-PSM/Nadia Todres

Applying an Accounting Lens to Inventory Control

To prevent leakage and wastage in Haiti, GHSC-PSM undertook an initiative to improve its warehouse operations that was guided by five key elements of **accounting control**¹: physical control, segregation of duties, proper authorization, adequate documentation and record keeping, and independent checks.

1 Physical Control involves building physical barriers and safeguards to protect and limit access to assets and records to only those staff with direct responsibility for them as part of their job function. To exercise greater physical control over the products in the warehouse, GHSC-PSM updated standard operating procedures (SOPs) to detail process steps for basic inventory management activities such as receiving, picking and packing, and supervising and dispatching product from the warehouse. GHSC-PSM also reinforced SOP controls to ensure adherence (adding layers of review, employing an external consultant to audit transactions and flag potential errors, and increasing management oversight in reviewing reports generated from the warehouse management system (WMS) such as receipt, dispatch, requisition, and movement reports).

One of the first steps GHSC-PSM took to exercise physical control was to install a cloud-based camera security system that allowed remote monitoring of the space. Given the frequency of city power outages, the security system is powered by solar panels with battery capacity, thereby ensuring continuous monitoring of operations. The project also established stricter security protocols, such as:

- Issued numbered vests to team members so that they could be easily identified.
- Established a process for trash disposal in which a security guard and another staff member transfer all garbage collected from one bin to another in front of a camera prior to removing it from the building to ensure only trash is removed from the premises.
- Mandated warehouse doors be closed when not in use.
- Implemented spot checks after picking and instituted direct oversight of requisitions.

The warehouse also shifted from periodic to perpetual inventory control. This entails moving from yearly stock-taking exercises to daily sampling of stock takes, allowing auditing teams to focus on daily randomized sections of the warehouse—an industry best practice also known as **geographic cycle counting**.

Geographic cycle counting allows the warehouse team to quickly identify inventory variances and address causal factors such as misplaced or mislabeled items, without wasting time or reducing productivity. This replaces more traditional warehouse-wide stock takes that often require shutting down operations multiple times per year for days at a time.

¹ Texas Tech University Health Sciences Center El Paso https://ttuhscep.edu/opp/_documents/50/op5003a.pdf

2

Segregation of duties involves different individuals being responsible for different steps in a process so that no one person has sole control. Often this means separating the responsibility of completing a task from the responsibility of reviewing the task (oversight/supervision) thereby spreading responsibility across multiple staff and/or departments. The project applied this best practice to user access to the WMS by taking the following steps:

- ▶ Partitioned users of the WMS. In the past, super users with WMS access also oversaw the physical management of products. The project separated these responsibilities to protect the integrity and reliability of the WMS data and moved super user access to an external party who resides outside Haiti.
- ▶ Reduced the number of users with WMS higher-level access privileges who could alter the system so that only those staff with duties related to that function of the WMS have access.
- ▶ Increased the frequency of required password changes to reinforce cybersecurity and maintain the integrity of individual staff credentials.
- ▶ Moved the responsibility for approving inventory adjustments in the WMS, which previously lay with the warehouse manager, to the finance department. This was part of a larger shift to increase oversight of the warehouse by the finance department due to the high volume of capital involved with the product and the team's experience with financial controls.

Warehouse Management System (WMS)

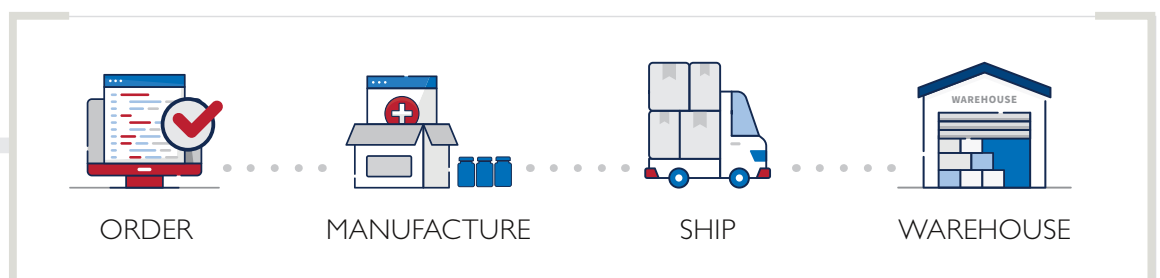
WMS is a software that helps companies manage and control daily warehouse operations, from the moment goods and materials enter a distribution or fulfillment center until the moment they leave. It is the source of truth for tracking inventory in a facility of the size and complexity of the Haiti warehouse. A WMS supports the following functions:

- Receiving and put-away process
- Inventory management
- Order picking, packing and fulfillment
- Shipping
- Labor management
- Warehouse metrics and analytics

Citation: [https://www.sap.com/products/scm/extended-warehouse-management/what-is-a-wms.html#:~:text=A%20warehouse%20management%20system%20\(WMS\)%20is%20software%20that%20streamlines%20every,all%20the%20steps%20in%20between](https://www.sap.com/products/scm/extended-warehouse-management/what-is-a-wms.html#:~:text=A%20warehouse%20management%20system%20(WMS)%20is%20software%20that%20streamlines%20every,all%20the%20steps%20in%20between)



**SECURE
CHAIN**



3-4

Proper authorization, adequate documentation, and record keeping ensures that only appropriate, designated staff can record transactions and that a paper trail of supporting documentation exists for each transaction that can be reviewed or audited. Project actions included:

- Overhauled the process for making inventory adjustments to require a written memo be attached to the adjustment record. Formal documentation of adjustments establishes an auditable process that can be easily reviewed for accuracy and completeness by supervisors and others with oversight responsibility.
- Instituted a new approval process for making inventory adjustments using collaboration software to record each adjustment that is made (quantity, price, code etc.) and capture the related adjustment justification, review, and approval. The collaboration software allows warehouse management, country office, and home office staff to consolidate data and communications around adjustments.

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Independent Checks involves using an independent external party to review performance. GHSC-PSM hired an external accounting firm to regularly conduct a third-party review and validation of work performed by the warehouse team. Cycle counts, for example, are now completed by a team consisting of staff from the warehouse, finance department, and the external party. The external accounting firm contributes by independently counting products and verifying the accuracy of the expiration date, pallet location number, batch number, and pack size. At the end of the process all three representatives involved in the cycle count or the wall-to-wall inventory (warehouse team, finance team and external firm), agree on the data to be reported on the blind count sheets and hand sign them. An inventory discrepancy report is then automatically generated by the WMS for the pallet locations counted/inventoried. The results are then shared directly with warehouse leadership.

Success Requires Strong Teamwork

GHSC-PSM recognized that without a strong team who understood and were invested in adopting the accounting control best practices, they would not be institutionalized, and the initiative would ultimately fail. The project applied change management best practices to socialize the approach and pave the way for adoption and ownership, took the time to select the right people for the right roles, crafted transparent communications to engage staff, and established a defined set of goals with clear milestones and metrics for success along the way.

Haiti warehouse team responsible for the receipt, storage, and dispatch of commodities. Photo by GHSC-PSM/Nadia Todres





“It was not easy at first to implement these changes. Initial perceptions were difficult to work with, but it didn’t take long for our warehouse and finance teams to develop trust in the process and each other. Morale has never been higher.”

— Emmanuel Le Perru,
Country Director

Meeting to review the project’s status in Haiti, gather feedback, and discuss performance and challenges. Pictured (left to right): Rebecca Logan, SVP & Programs Manager at Chemonics International; Emmanuel Le Perru, Country Director for GHSC-PSM in Haiti; and Florence Duperval Guillaume, former Country Director. Photo by GHSC-PSM/Nadia Todres

1

Ensure the right team is in place. One of the first steps GHSC-PSM took was to ensure the right leadership was in place who had the right drive and adaptability to adopt the changes that needed to be made. This was done through a combination of hiring, promoting, and moving staff. Staff were selected for their leadership, dynamism and attention to detail and were expected to lead by example.²

2

Articulate clear messages that can be easily internalized by staff. Three key messages seemed to resonate best with the team and influence adoption of the new approaches:

- **The changes will protect staff from false accusations.** Installing cameras and bringing in external auditors can signal a mistrust of team members if the wrong narrative about their purpose takes hold. In the case of the cameras, warehouse leadership was clear that they were there to protect products and staff. This played out in real time when products were identified as missing during an annual wall-to-wall inventory. Camera footage showed the products were moved accidentally during the cycle counting process, thus exonerating staff from any perception of wrongdoing.
- **These changes are intended to make your jobs easier.** Prior to implementing this new approach to inventory control, warehouse staff’s time would be wasted hunting for products that were no longer in the warehouse as a result of leakage, thereby hampering the pick and pack process. Rigorous inventory control would give them greater and more accurate visibility into stock availability.
- **Product equals money.** This message particularly resonated with the finance team in expanding their role to warehouse oversight operations, which was previously considered outside their scope.

² [All-Female Warehouse Management Team Breaking Records | USAID Global Health Supply Chain Program](#) (ghsupplychain.org)

3

Set clear goals and share results. Openly and transparently sharing results and celebrating progress is crucial to building momentum and buy-in. Showing and celebrating success builds staff trust in the system and greater ownership of the outcomes. A few examples include celebrating successes by congratulating teams after the completion of a quarterly distribution cycle and holding monthly gatherings with the finance and executive teams to review the progress made in the cycle count results and other key performance indicators such as the reception and pick/pack time completion/speed. Setting up ad-hoc morning briefings to remind staff of the bigger picture (the “why”) importance of adhering to the SOPs and what they represent —such as keeping the project’s insurance, donors and health facilities’ confidence —helped them understand what is at stake.



“When I joined the project in 2018 as a warehouse officer, I thought I was going to quit as there was no discipline and the warehouse was too messy. Now all products are at the correct location, we don’t lose time looking for them or fixing errors, staff is serious and disciplined, and we work much faster. It is day and night.”

— Margery Applrys, Warehouse Manager

From left to right: Charline D. Carolus Warehouse Pharmacist, Beatrice Jean Pierre Delva Senior Distribution Officer, and Margery Applrys, Warehouse Operations Manager. Photo by GHSC-PSM/Nadia Todres

Results

Since implementing these changes, the GHSC-PSM warehouse team in Haiti has achieved tremendous success in terms of inventory control, such as:

94%
DROP
Inventory Quantity Adjustments

94% drop in the number of inventory quantity adjustments made annually from 133 in 2018 to 4 in 2023.

100%
IMPROVEMENT
Inventory Accuracy Count

Exceeding Commercial Standards

Inventory accuracy of the annual full warehouse count improved to 99.985% in 2023 and reached 100% in 2024.


DECREASE
Total Annual Inventory Variance

While the percent change in inventory accuracy was small, in dollar terms this translates to a decrease in total yearly inventory variance from \$150,000 on average from 2018-2020 to \$1,718 in 2023 and \$200 in 2024.

Conclusion

Applying an accounting control approach built around the principles of physical control, segregation of duties, proper authorization and adequate documentation and record keeping, and independent checks is an effective tool to establish and maintain proper inventory control in any setting. Haiti's operational environment is not an easy one. As most of these are process changes, they do not require a heavy financial investment in new technology, rather a heavier investment focusing on team function and performance. The key to the successful implementation of this approach resides in promoting an enabling environment for adoption of best practices and motivating the warehouse team to embrace and institutionalize them.

The Haitian people have suffered through a series of hardships in recent years – a 7.2 magnitude earthquake followed hot on the heels of the global COVID-19 outbreak, the recent cholera resurgence, and growing political turmoil feed into a worsening climate of insecurity. But the project's warehouse team in Haiti is excelling and producing enviable results.

“This team has achieved best-in-class inventory control for GHSC-PSM, and for any commercial operator for that matter. They set the bar for others to follow. With everything our colleagues in Haiti must deal with, their stellar operational conditions and processes are the new standard. The results of their stock takes are stunning. They are my heroes.”

— Ralph Titus, Systems Strengthening Director at GHSC-PSM