Department of Veterans Affairs

Office of Inspector General

Audit of VA Medical Center Management of Medical Supply Inventories

VA medical centers could reduce large excess medical supply inventories by more effectively using automation and other modern inventory techniques.

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Office of Inspector General
Washington DC 20420

DEPARTMENT OF VETERANS AFFAIRS
Office of Inspector General
Washington DC 20420

Memorandum to:
Under Secretary for Health (10)
Assistant Secretary for Financial Management (004)

Audit of VA Medical Center Management of Medical Supply Inventories

1. The purpose of the audit was to evaluate VA medical center (VAMC) management of medical supply inventories. Medical supplies are expendable items used in patient care and medical research. In Fiscal Year (FY) 1998, VAMC medical supply purchases totaled $467.8 million, which was about 16.3 percent of the Veterans Health Administration's (VHA's) total supply costs of $2.87 billion. At any given time, the value of medical supply inventories at VAMCs was about $103.8 million.

2. VHA has overall operational responsibility for VAMC medical supply inventories, with each VAMC managing its own inventory. The Office of Acquisition and Materiel Management (OA&MM) is responsible for formulating policy on VA logistics issues, including inventory management. In recent years, VHA and OA&MM have encouraged, but not required, VAMCs to modernize inventory management and to make more use of the Generic Inventory Package (GIP), VA's automated inventory management system.

3. VAMC medical supply inventories substantially exceeded current operating needs. At five VAMCs we analyzed supply demand, replenishment cycles, and safety stock requirements and determined that for most items 30 days of stock was the maximum amount required to meet current needs. All five VAMCs had inventories that substantially exceeded the 30-day level. This was true both for inventories controlled by materiel management activities (referred to as GIP inventory) and for inventories controlled by clinical services (non-GIP inventory). The five VAMCs had inventories with a combined value of $7.0 million ($3.8 million GIP and $3.2 million non-GIP). We estimated that about $4.3 million of this inventory was excess.

4. For the combined inventories at the five VAMCs, the overall weighted average days of stock on hand was 209 days (304 days for GIP inventories and 95 days for non-GIP). To illustrate the magnitude of excess inventory, of the 5,423 items in GIP inventories 4,713 (86.9 percent) had stock levels exceeding 30 days. This included 1,421 items (26.2 percent) for which there was no demand, which meant that the stocks of these items would probably never be used. In addition, at one VAMC with a prime vendor contract we found excess inventory for 49.8 percent of prime vendor items. Because prime vendors can usually deliver items in 1-2 days, there should be little or no excess prime vendor inventory. Based on the audit results, we estimated that at any given time the value of VHA-wide excess inventory was $64.1 million, which was 61.8 percent of the $103.8 million total inventory. Of the $64.1 million in excess inventory, at least $10.8 million was inventory for which there was no demand.

5. The excess inventories occurred because VAMC inventory managers did not adequately monitor stock levels, made unnecessary large quantity purchases, and did not effectively manage reductions in item demand. These deficiencies could have been avoided or mitigated if the VAMCs had more effectively used GIP controls. The VAMCs did not keep accurate records for some portions of their GIP inventories and/or did not effectively use available automated information to manage stock levels. If inventory data is inaccurate, the automated management features of GIP cannot be effectively used to track demand, monitor stock levels, or identify excesses or shortages. Clinical services typically managed their non-GIP inventories manually and did not maintain any inventory records at all.

6. Instead of effectively utilizing GIP, the VAMCs relied on excess inventory as a substitute for aggressive inventory management. To address this issue, we recommended that VHA: (a) issue guidance requiring VAMCs to establish goals for inventory reductions and to use automation and other modern techniques for managing their inventories; (b) establish procedures to monitor VAMC progress in reducing inventories; and (c) provide VAMC staff training aimed at improving inventory management. We also recommended that OA&MM provide VHA technical support and assistance in preparing the recommended guidance on inventory management and in providing the recommended training.

7. The maximum amount of stock on hand should be a 30-day level. A more aggressive goal would be a 7-day level, which could be reached by expanded use of prime vendors, an initiative that VHA is considering. In our opinion, a reasonable goal that could be achieved through greater use of automation and prime vendors would be the midpoint between the 30-day and 7-day levels. Achieving this goal would reduce VAMC inventories by $75.6 million, which could then be used for other purposes.

8. The Under Secretary for Health and the Assistant Secretary for Financial Management concurred with the recommendations and provided acceptable implementation plans. VHA will issue guidance on VAMC supply inventory management, including setting maximum supply stock levels at no greater than 30 days. A work group will be commissioned to determine a best practice model for managing inventories through the GIP system. VHA and OA&MM will work together to prepare guidance and provide necessary training. We consider all audit issues resolved and will follow up on the implementation of planned actions.

(Original signed by:)

MICHAEL G. SULLIVAN
Assistant Inspector General for Auditing

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Results and Recommendations

VA Medical Centers Could Reduce Medical Supply Inventories

The Veterans Health Administration (VHA) and the Office of Acquisition and Materiel Management (OA&MM) have encouraged VA medical centers (VAMCs) to modernize and improve inventory management. However, VAMCs still maintain large medical supply inventories that far exceed requirements for current operating needs. Our audit at five VAMCs with combined medical supply inventories valued at $7.0 million found that about $4.3 million was excess. The excesses occurred because inventory managers: (1) set normal stock levels too high and did not effectively monitor stock on hand; (2) made unnecessary large quantity purchases; and (3) did not effectively manage decreases in item demand. These problems could have been avoided or mitigated if VAMCs had made more use of automated controls to manage inventories. We estimated that at any given time in Fiscal Years (FYs) 1997-1998 the value of VHA-wide excess inventory was about $64.1 million. To improve inventory management, we recommend that VHA and OA&MM work together to issue guidance requiring VAMCs to reduce inventories by making more effective use of automation and other modern inventory techniques. Based on the audit results, we estimated that stronger management could reduce medical supply inventories by $75.6 million.

Medical Supply Inventories Substantially Exceeded Current Needs

Modern inventory management principles emphasize that inventory levels should be consistent with current operating needs, which means that inventories should contain enough supplies to meet user needs and that purchases above these needs should be avoided so that funds are not tied up in excess inventory. To determine if VAMCs were maintaining medical supply inventories in excess of current operating needs, we evaluated inventory management practices at five VAMCs, which are designated as VAMCs A, B, C, D, and E in this report. At all five VAMCs inventories substantially exceeded current needs. Of the $7.0 million combined inventory at the five VAMCs, $4.3 million (61.8 percent) was excess.[1]

In assessing VAMC inventory management, we considered stock above the 30-day level to be excess inventory unless there was evidence that a higher stock level was needed to meet replenishment and safety requirements. VHA guidance does not mandate or recommend that VAMCs maintain specific inventory levels. Instead, VAMCs should determine the inventory level for each supply item by analyzing item demand, replenishment cycles, and safety stock requirements. The 30-day criterion was reasonable because at each of the five VAMCs we analyzed pertinent data and determined that for most medical supply items 21 to 30 days of stock on hand was the maximum amount needed.

All five VAMCs had excess inventory in both the inventory managed by the materiel management (MM) activity and in the inventory managed directly by clinical services.

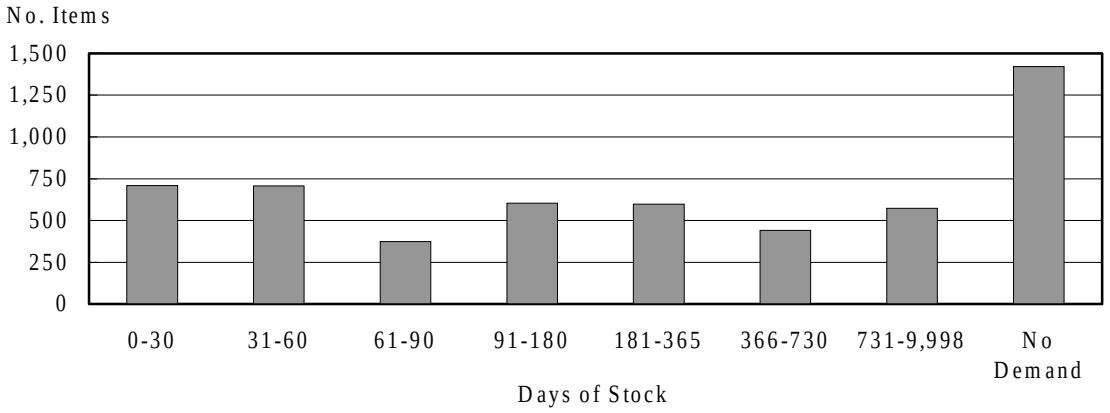
[1] The 61.8 percent figure is correct when the inventory values are not rounded. See Appendix III, page 23.

Although the use of VA's automated inventory system, the Generic Inventory Package (GIP), is not mandatory, most MM activities use GIP to assist in inventory management. Clinical services that manage their own supplies typically do not use GIP but instead use informal, nonautomated methods of controlling inventories.

Excess GIP Inventory

The five VAMCs had GIP inventories with a combined value of $3.8 million. Based on analysis of each VAMC's GIP data and our review of VAMC inventory practices, we estimated that of the $3.8 million in inventory about $2.6 million (68.4 percent) was excess. We were able to perform a detailed analysis of the usage and stock on hand data for $2.3 million (60.5 percent) of the $3.8 million in inventory.[2] The $2.3 million in inventory included 5,423 supply items. Stock on hand exceeded the 30-day benchmark for 4,713 (86.9 percent) of the 5,423 items. The value of the excess inventory was $1.6 million, or 69.6 percent of the $2.3 million total value of the inventory reviewed. Figure 1 below shows the total number of GIP items in inventory at the five VAMCs stratified by days of stock on hand:

Figure 1. VAMC GIP Inventories Stratified by Days of Stock on Hand



- The percentage of items with more than 30 days of stock ranged from 75.1 percent at VAMC C to 98.5 percent at VAMC E. From 55.9 to 90.5 percent of items had more than a 90-day supply, and from 30.3 to 68.2 percent had more than a 365-day supply.

- The overall average (item dollar value-weighted mean) days of stock on hand was 2,136 days (5 years and 11 months). If no demand items are excluded, then the average days of stock was 304 days (10 months). For the five VAMCs individually, the average days of stock ranged from 934 days at VAMC C to 4,582 days at VAMC E. Excluding no demand items, the average days of stock ranged from 202 days at VAMC E to 471 days at VAMC C.

[2] The remaining $1.5 million in inventory was controlled by the Supply, Processing and Distribution (SPD) section at VAMC E. The GIP item usage data for this inventory was too inaccurate for us to determine days of stock on hand. As a result, days of stock data for VAMC E covered only the warehouse inventory point. We estimated that about $1.0 million of the $1.5 million SPD inventory was excess (see Appendix 3, page 24).

- The excess inventories included 1,421 items for which there was no demand (26.2 percent of 5,423 total items). No demand items are those with minimal or no usage for the previous 12 months. Generally, items that are not used within 12 months will never be used. The value of this no demand inventory was $441,256 (19.2 percent of $2.3 million total inventory). For the five VAMCs individually, the percentage of no demand items ranged from 5.6 percent at VAMC C to 53.9 percent at VAMC E.

Excess Non-GIP Inventory

Clinical services at the five VAMCs maintained non-GIP inventories with an estimated value of $3.2 million. The services did not maintain adequate inventory data for us to determine the number of supply items on hand or the number of excess items. However, by analyzing medical supply purchase information and by reviewing a judgment sample of 100 supply items we estimated that the value of excess non-GIP inventory for the five VAMCs combined was $1.7 million (53.1 percent of the $3.2 million total inventory value).

For the five VAMCs individually, the value of the excess non-GIP inventory ranged from $122,252 at VAMC B to $721,581 at VAMC A. For the five VAMCs combined, the average days of supply on hand for non-GIP inventory was 95 days. For the five VAMCs individually, the average days of supply on hand ranged from 50 days at VAMC D to 162 days at VAMC E.

Causes of Excess Inventory

To identify the practices causing excess inventory, we performed detailed reviews of inventory and purchase records pertaining to 260 supply items -- 160 GIP items and 100 non-GIP items. Of the 160 GIP items, 128 (80.0 percent) had excess stock on hand, and of the 100 non-GIP items, 54 (54.0 percent) had excess stock. We concluded that essentially the same practices caused excess inventories for both GIP and non-GIP items:

- The most frequent cause of excess inventory was that inventory managers did not adequately monitor stock levels. Inadequate monitoring consisted of three closely related problems -- setting normal stock levels too high, not reviewing and updating stock levels, and not monitoring quantities on hand. Inadequate monitoring occurred for 78 (60.9 percent) of the 128 GIP items with excess stock and for 37 (68.5 percent) of the 54 non-GIP items with excess stock.

- The second most frequent cause was unnecessary large purchases (that is, purchasing more than required for current needs). This occurred for 37 (28.9 percent) of the 128 GIP items and for 17 (31.5 percent) of the 54 non-GIP items.

- A third cause was that inventory staff did not effectively manage reductions in item demand. We identified this issue only in our GIP sample (13 of 128 items; 10.2 percent).

Stock Levels Set Too High. At all five VAMCs inventory managers set normal stock levels too high. The normal stock level represents the quantity of each item that should be kept in inventory to meet demand and provide adequate safety stock. For GIP inventory, the normal stock level can be set automatically based on an item's average daily usage and the desired days

of stock to be kept on hand. A common reason for setting stock levels too high was that inventory managers wanted to keep stock "cushions" in order to avoid shortages. Setting the stock level higher than necessary to meet demand means that, by definition, there will always be excess inventory. (For example, keeping 90 days of stock when demand can be met by a 30-day level will result in 60 days of excess inventory.) The following example illustrates how setting the stock level too high causes excess inventory:

> Hemodialyzer. At VAMC A the GIP normal stock level for this item was set at 50 packages, which was an 85-day supply. Based on the item's demand, a 30-day supply would have been 18 packages. There were 38 packages on hand, which was 20 packages (value = $6,480) more than needed. According to the inventory manager, their usual practice was to set stock levels for most items at 60-90 days.

Normal Stock Levels Not Reviewed and Updated. At all five VAMCs, GIP inventory managers did not routinely review established normal stock levels to insure that they were up-to-date and consistent with current demand. For many items, the stock levels had been set years ago and did not reflect changes in demand or today's faster replenishment cycles. The following example illustrates how reviewing stock levels can identify opportunities to reduce inventory:

> Hyposyringe. At VAMC B the normal stock level for this item had been set at 291 days for several years. At the time of our audit, the VAMC had 34,200 syringes. Based on demand, a 30-day level would have been 3,510 syringes, which means that 30,690 syringes (value = $1,964) were excess. Inventory managers at VAMC B had not evaluated stock levels for several years. Just before our audit visit they began a special project to review stock levels. As a result, they reduced the level for the syringes to 8,000, a 68-day supply (which was still higher than necessary to meet demand).

Quantities on Hand Not Monitored. In addition to setting normal stock levels too high and not reviewing established stock levels to insure consistency with demand, GIP inventory managers at all five VAMCs did not consistently monitor actual item quantities on hand by reconciling these quantities with inventory records. Such reconciliations are important because they can detect problems and/or inventory record inaccuracies that could be causing excess inventory. The following example illustrates how the lack of monitoring can result in excess inventory:

> Lap Sponge. VAMC B had 2,323 lap sponges in inventory. Based on demand, a 30-day supply would have been 290 sponges, which means that 2,033 sponges were excess (value = $4,510). Sometime before June 1997, the vendor changed the shipping quantity from 20 sponges per case to 40 per case. However, inventory staff did not change the shipping-issue quantity conversion factor in GIP. This resulted in only one item being recorded in inventory records for every two items received from the vendor. Over time, the actual amount of stock on hand increased beyond the amount recorded in GIP. Because the inventory staff did not routinely perform physical counts to reconcile stock on hand with GIP records, the problem was not identified until February 1998 when an SPD inventory technician noticed that the cases contained 40 sponges.

At all five VAMCs, the non-GIP inventories also had excesses caused by not effectively monitoring quantities on hand. The clinical services that managed the non-GIP inventories did

not use GIP or other automated inventory systems and, as a result, they did not have the information needed to establish and monitor normal stock levels or otherwise effectively manage inventories. Specifically, they did not have information showing inventory on hand, item demand, normal and safety stock levels, reorder points, or turnover rates. Instead, service-level inventory managers used informal methods to manage supplies. They determined replenishment frequencies and purchase quantities based on observations of stock on shelves and on their personal experiences and preferences. This frequently resulted in stock and replenishment levels becoming too high, as illustrated in the following example:

> Percutaneous Introducer Kit. At VAMC A, the Surgical Service had 22 cases (value = $6,886) of this item, which was a 528-day supply. Based on the item's demand, a 30-day supply would have been 1.25 cases, which meant the service had about 20 cases (value = $6,260) in excess of needs. The inventory manager ordered three cases about every 6 weeks, which significantly exceeded the rate of use. The inventory manager, who maintained the service's inventory of several hundred items, acknowledged that she essentially managed the inventory informally and did not use any written inventory records that would show items stocked, quantities on hand, or demand.

Large Quantities Purchased Unnecessarily. All five VAMCs made unnecessary large quantity purchases of some items. Large purchases are, in effect, irregular replenishments that override established normal stock levels and reorder points and increase the risk that some of the stock will not be used because of obsolescence or changes in demand. Unnecessary large purchases also tie up funds in inventory that could be used to meet other more urgent VHA needs.[3] The following example illustrates how a large purchase can result in inventory that will not be used before the end of its useful life:

> Glucose Solution. In April 1998, VAMC D purchased 630 boxes of glucose solution (value = $2,728) with an expiration date of November 1999. A 30-day supply was 19 boxes. As of June 1998, the VAMC still had 590 boxes in stock, which was a 946-day supply. This meant that 571 boxes (value = $2,472) were excess. At the current usage rate, 267 boxes (value = $1,156) will still be in stock when the item's November 1999 expiration date is reached. Inventory managers could not explain why such a large quantity had been purchased.

Non-GIP inventory managers typically ordered individual items once or twice during each fiscal year quarter instead of placing more frequent orders for the smaller quantities required for current operating needs. Although this minimized the number of replenishment orders that had to be made, it also resulted in services maintaining 60-120-day inventories, as illustrated by the following example:

> Femostops. At VAMC E, Medicine Service had 106 femostops on hand (value = $7,367), which was a 75-day supply. Based on the item's estimated usage rate, a stock level of 40 items would have met current needs. This meant that 66 items (value =

[3] Large quantity purchases may be justified if the VAMC receives a quantity discount on the item price. However, such discounts were not received for any of the audit sample items with excess inventory.

($4,587) were excess. The inventory manager typically placed large replenishment orders once a quarter for quantities that would last for at least the next 3 months.

Some of the large purchases of both GIP and non-GIP items were made at the end of the fiscal year to use up unspent funds. Such purchases not only produce excess inventory, but have the additional adverse effect of artificially increasing the expenditures that will be used as the basis for future year budgets. In other words, large year-end purchases can give the false impression that a VAMC requires more funds for medical supplies than it would truly need if inventories were effectively managed. In addition, using year-end funds for unnecessary large quantity purchases means that these funds are not available to meet more urgent unfunded VHA year-end needs. The following example illustrates this problem:

X-Ray Film. At the end of FY 1997, VAMC D purchased 360 boxes of film at a cost of $38,642. The VAMC's normal usage was 28 boxes every 30 days. The year-end purchase was more than a year's supply (383 days of stock). At the time the purchase was made, the VAMC needed to order only 9 boxes to have a 30-day supply. By ordering 351 boxes more than needed, the VAMC spent $37,680 for excess stock. These funds could have been used to meet valid FY 1997 needs, and the x-ray film needed in FY 1998 could have been purchased with FY 1998 operating funds.

Reductions in Demand Not Effectively Managed. Reductions in demand can significantly affect an item's inventory requirements. Item demand may be reduced or eliminated for reasons such as changes in clinician preference, workload reductions, or the introduction of new products. When this occurs, MM staff should take steps to manage the change in inventory requirements caused by the change in demand. Such steps include developing a plan with the using service to phase out the old item and phase in the new one, negotiating credits or exchanges with the vendor for unused items, or offering the inventory to other VAMCs. The following example illustrates how a change in demand can result in excess inventory and how a loss can occur if the change is not addressed:

Film Plus Imager. In December 1997, VAMC D's Radiology Service decided to stop using this type of film and to switch to a different film. At that time Radiology staff informed the inventory manager that the film was no longer needed. According to the item purchase order, the vendor offered a full value exchange for the remaining film if it was returned no later than 8 months before its October 1998 expiration date. The MM activity should have returned the film by February 1998. However, in June 1998 we found that the film had not been returned, that the VAMC still had 13 cases in stock, and that the loss incurred was $6,946. The inventory manager told us that he had considered the refund return a "low priority."

Excess Prime Vendor Inventory

Some VAMCs had begun using prime vendors for some of their medical supplies. VHA and OA&MM have encouraged VAMCs to use prime vendors, which is recognized as an important modern inventory management technique because, if used effectively, it reduces inventory carrying costs and shifts some of the inventory risk to the vendor. A prime vendor buys supplies from various sources, stores the supplies in a warehouse, and delivers them to customers as

needed. Deliveries are typically made within 1-2 days of receiving an order. This is called "just-in-time" delivery. The purpose of using a prime vendor is to reduce inventories and thereby reduce the ordering, storage, and distribution costs associated with large inventories. In return for the just-in-time service, the customer pays the prime vendor a premium over and above the cost of the supplies.

VAMCs D and E used prime vendors for some of their medical supplies. There should have been no excess inventory for prime vendor items because, by definition, the just-in-time service should have allowed the VAMCs to reduce stock levels for these items to about 7-10 days. At VAMC E we could not determine stock levels for prime vendor supplies because the GIP usage data was too inaccurate (see footnote 2, page 2). At VAMC D we found significant excess inventory for prime vendor items.

VAMC D used a prime vendor for 410 (15.4 percent) of the 2,662 items in inventory. For prime vendor service, the VAMC paid a fee of 4.5 percent on the $1.1 million cost of supplies purchased. The average stock level for prime vendor items was 261 days, which was only slightly lower than the average stock level of 298 days for the entire inventory. About 77.3 percent of the 410 prime vendor items had more than a 10-day supply, 49.8 percent had more than a 30-day supply, and 10.5 percent had more than a 1-year supply.

The high prime vendor inventories resulted from the same practices that caused high overall inventories -- stock levels not monitored, large purchases, and low or no demand. Maintaining excessive prime vendor inventories defeated the purpose of using a prime vendor and increased costs in two ways. First, VAMC funds were tied up in unneeded inventory. Second, the VAMC paid a fee for just-in-time service but did not receive any benefit for this fee, since the high stock levels made quick service unnecessary. In FY 1998, VAMC D paid about $50,000 in prime vendor fees. Based on the prime vendor inventory in excess of a 10-day supply, we estimated that about $39,000 in prime vendor fees was spent unnecessarily because there was adequate inventory on hand and just-in-time service was not needed.

GIP Controls Not Effectively Used to Manage Inventories

Many of the problems discussed above could have been avoided or minimized if VAMCs had more effectively used the automated inventory management controls and features available in GIP. The two most basic requirements of automated inventory control are (1) maintaining accurate and complete perpetual inventory records and (2) using the automated records to monitor and actively manage stock levels. The five VAMCs audited did not keep accurate perpetual records for some portions of their inventories and/or did not effectively use the information in the available records to manage stock levels.

Accurate Perpetual Inventory Records Not Maintained. Perpetual inventory records furnish a continual count and dollar value for every item in stock. When GIP is used to manage inventories, it is important to maintain inventory balances by promptly recording all receipts and issues. If inventory balances are not kept current, GIP cannot accurately track item demand, which must be known in order to establish reasonable stock levels. Inaccurate inventory information also limits the effectiveness of other GIP features, such as the auto-generation of replenishment orders.

None of the five VAMCs kept accurate perpetual records for all of their inventory points. Instead, at each VAMC the accuracy of inventory records varied considerably among the four major inventory points -- warehouse, SPD, secondary inventories, and non-GIP service-level inventories. At the four VAMCs with warehouses, the warehouse inventories were generally accurate. At three of the five VAMCs, SPD inventory records were not routinely updated to insure that stock data was accurate. However, just before our audit visits VAMCs B and C began projects to update their SPD inventory records and to maintain accurate inventory balance information in GIP. VAMC E began a similar process after our audit. None of the five VAMCs kept perpetual inventory balances for secondary inventory points or for non-GIP inventories.

Automated Information Not Used to Manage Inventories. GIP has the capability of producing numerous reports with information that can be used to manage the overall inventory, individual inventory points, and individual inventory items. For example, the Days of Stock on Hand Report contains a complete list of items for each inventory point, showing quantities on hand, value, usage, and days of stock on hand. This report can be used for evaluating normal stock levels and reorder points and for identifying items with potentially out-of-line stock levels. Similarly, the Inactive Item Report can be used to identify items with low or no demand. None of the five VAMCs were using these reports or many of the other automated reports available in GIP to systematically manage their inventories.

Other Modern Inventory Techniques Not Used. The five VAMCs generally were not making full use of various modern inventory techniques that could be facilitated through the use of GIP. For example, none of the five VAMCs was fully using GIP's capability to automatically generate stock replenishment requests, which can significantly reduce the time and effort required to place orders. Similarly, none of the five VAMCs were using barcode scanning to track all inventory, although all five had begun using barcode scanning for some portions of their inventories.

Conclusion -- Better Management Could Reduce Excess Inventories

VHA and OA&MM have encouraged VAMCs to modernize their inventory management and to utilize the automated data, reports, and controls available in the GIP system. However, VAMCs have not taken advantage of GIP. Instead, they have continued to rely on "cushions" of excess inventory as a substitute for aggressive inventory management. As a result, funds that could have been used for other purposes have been tied up in excess inventory. At any given time in FYs 1997-1998, the estimated value of medical supply inventories at all VAMCs was $103.8 million. Of this amount, about $64.1 million was excess inventory.

If VAMCs could achieve the goal of reducing inventories to a 30-day level, then the $64.1 million used to purchase and maintain excess inventories would be available for other uses. If VAMCs improved their inventory practices and also increased the use of prime vendors as is being considered, they might be able to achieve the more aggressive goal of 7-day stock levels, which would reduce inventories by about $87.2 million. In our opinion, a reasonable goal that would be achievable through greater use of automation and prime vendors, would be the midpoint between the 30 and 7-day goals, which would be about a 19-day level. Achieving this goal would reduce inventories by $75.6 million.

To improve inventory management, VHA and OA&MM should work together to issue guidance aimed at helping VAMCs reduce excess inventories and increase the use of automated controls and other modern inventory techniques such as barcode scanning, automated replenishment ordering, and the use of prime vendors. With inventories of thousands of items, deliveries every day, and distributions to hundreds of users, automation is the only effective way to track receipts, quantities on hand, demand, and distribution. The recommended guidance should require VAMCs to use GIP or other automated controls for both MM-managed and larger, higher cost service-managed inventories.[4] The guidance should also direct VAMCs to establish effective procedures for setting and monitoring normal stock levels, for avoiding unnecessary large quantity purchases, including year-end purchases, and for addressing reductions in item demand.

The guidance should require VAMCs to set goals for reducing inventories. In our opinion, the minimum goal should be 30-day inventory levels. For prime vendor inventory, a more aggressive, but achievable, goal would be 7-10 days. Once goals are established, VHA should establish procedures to monitor VAMC progress in meeting their goals. Since VHA has operational responsibility for VAMC inventories, VHA should take the lead in developing the recommended guidance and in setting inventory reduction goals and OA&MM should provide technical support and assistance as needed.

VHA and OA&MM should also work together to train VAMC staff in modern inventory management principles and in the effective use of automation. Although some training has been provided, the audit results and our discussions with VAMC inventory staff indicate that additional training is needed. Some inventory managers and technicians were not familiar with GIP features, were not knowledgeable about modern practices, or expressed resistance to change. Additional skill development is an essential requirement for the effective use of automation and quick stock replenishment techniques. The training effort could be supplemented by providing VAMC staff with a handbook describing preferred inventory management procedures.

As of November 1998, VHA was studying the feasibility of using prime vendors for most medical supplies. A national prime vendor initiative has the potential for significantly reducing inventories. However, as the example of VAMC D shows, the existence of a prime vendor contract is not a guarantee against excess inventory (see page 7). For prime vendor contracts to be successful, VAMCs will still have to know the demand for supply items and the quantities to order from prime vendors. To realize the full economic benefit of prime vendors, VAMCs will have to eliminate their excess inventories and improve their internal supply distribution practices. For many items, VAMCs will have to work down or otherwise dispose of large amounts of stock befor they can start receiving regular distributions from prime vendors.

For More Information

- Medical supply costs, VAMC inventory processes, inventory management initiatives, and other background information are discussed in Appendix 1, pages 13-17.

[4] As of November 1998, VHA was considering replacing GIP with a new system in 2-3 years.

- The audit objectives, scope, and methodology are discussed in Appendix II, pages 19-20.
- More detailed information on GIP controls and on our estimate of VHA-wide excess inventories is provided in Appendix III, pages 21-24.

Recommendation 1

We recommend that the Under Secretary for Health:

a. Issue guidance requiring VAMCs to eliminate excess medical supply inventories and to use modern inventory management techniques. The guidance should specify that VAMCs should: (1) establish goals for reducing inventory levels, with a 30-day level as the initial goal; (2) use GIP or its successor system to manage all inventories, including high-cost service-level inventories; and (3) establish effective procedures for setting and monitoring normal stock levels, avoiding unnecessary large quantity purchases, and managing decreases in item demand.

b. Establish procedures to monitor VAMC progress in reducing inventories and to insure that inventory reduction goals are met.

c. Provide VAMC inventory staff training on modern inventory management principles and techniques and on the use of automation for inventory management.

The associated monetary benefits for Recommendation 1 are shown in Appendix IV, page 25.

Recommendation 2

We recommend that the Assistant Secretary for Financial Management insure that OA&MM provides VHA with technical support and assistance in preparing the recommended guidance on inventory management and in providing the recommended training.

Under Secretary for Health Comments

The Under Secretary for Health concurred with the findings, recommendations, and monetary benefits estimate. He indicated that VHA needs to fully exploit the opportunity to achieve significant savings by ensuring that facilities take advantage of the inventory management tools already available to them to reduce inventory levels. (See Appendix V, pages 27-29, for the complete text of the Under Secretary's comments and implementation plan.)

Assistant Secretary for Financial Management Comments

The Assistant Secretary for Financial Management concurred with the recommendations and said that implementation should result in improved inventory management at VAMCs. (See Appendix VI, pages 31-32, for the complete text of the Assistant Secretary's comments and implementation plan.)

Implementation Plans

Recommendation 1a(1). The VHA Chief Financial Officer's (CFO's) Logistics Office will draft policy on the management of VAMC supply inventories and will include setting a maximum supply stock level at no greater than 30 days. The policy should be issued by July 31, 1999.

Recommendation 1a(2). The Logistics Office will commission a field-based work group to determine a best practice model for managing inventories through the GIP system. Coordinating with other groups and the Office of Acquisition and Materiel Management, the work group will focus on hardware, software, and training issues related to the use of the system. The work group findings and recommendations should be completed by October 1, 1999.

Recommendation 1a(3). Along with requiring setting and monitoring of normal stock levels, the VHA CFO will commission another work group to deal specifically with performance measures related to logistics. Inventory management measures will be included and measures specifically dealing with stock on hand will be established. This information will be collected and shared on a report card basis by VISN. Implementation is planned for September 30, 1999.

Recommendation 1b. This recommendation will be accomplished through completion of actions described above for recommendations 1a(1) and 1a(3).

Recommendation 1c. This recommendation will be accomplished through completion of actions described above for recommendation 1a(2).

Recommendation 2. The Assistant Secretary for Financial Management noted that OA&MM has overall responsibility for VA materiel management policy, and suggested that the recommendations be jointly assigned to VHA and OA&MM. He further indicated that OA&MM looks forward to working with VHA's Logistics Office to correct this situation. The Under Secretary for Health stated that VHA plans to coordinate with OA&MM in the process of preparing guidance and providing necessary training.

OIG Comments

The implementation plans are acceptable and we consider the audit issues to be resolved. We will follow up on the implementation of planned actions. We recognize the Assistant Secretary's concerns about the OA&MM and VHA roles in implementing the recommendations. Given VA's current organizational structure, we believe that VHA, with its direct operational responsibilities, must take the lead in improving VAMC inventory management.

Background

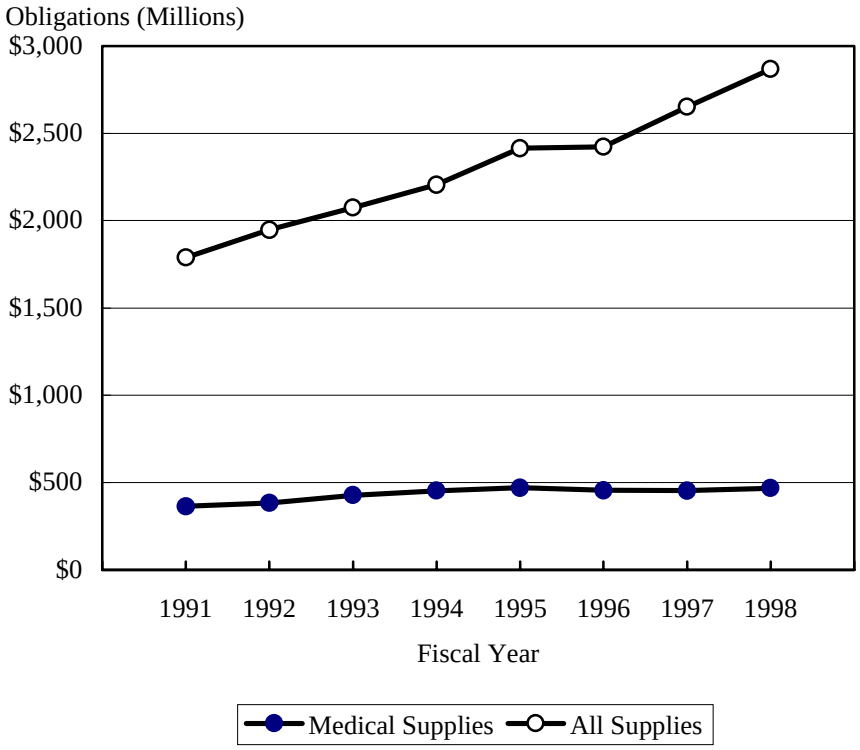
Introduction

Definition of Medical Supplies. As defined for VA budget and accounting purposes, medical supplies are expendable hospital, surgical, laboratory, and radiology items used in patient care and medical research. Medical supplies include such items as examination gloves, catheters, disposable scalpels and syringes, respirators, sutures, and x-ray film. Other supplies and materials, such as drugs and medicines, chemicals and reagents, prosthetics, blood products, subsistence, office supplies, and linens are classified in separate budget categories.

VA Medical Supply Costs. In FY 1998, medical supply expenditures totaled $467.8 million, which was about 16.3 percent of total supplies and materials costs of $2.87 billion. Based on our audit results, we estimated that at any given time in FY 1998 the value of medical supplies in VAMC inventories was about $103.8 million (22.2 percent of the $467.8 million).

Of the various VA supply categories, medical supply expenditures were second only to the $1.55 billion expended for drugs and medicines. As shown in Figure 2 below, medical supply expenditures increased significantly between FY 1991 ($363.2 million) and the peak year of FY 1995 ($470.5 million), decreased slightly in FY 1996 ($455.9 million) and FY 1997 ($453.6 million), and then increased in FY 1998 ($467.8 million):

Figure 2. Medical Supply and Total Supply Cost Trends – FYs 1991-1998



Source: VA Congressional Budget Submissions and VHA Budget Office

For the period FYs 1991-1998, VHA medical supply expenditures increased at a rate of 4.1 percent a year, which was about one-half the rate of increase of 8.7 percent for all supply categories. The two categories of drugs/medicines and prosthetics accounted for most of the increases in overall supply costs.

VA Inventory Management Responsibilities. The Office of Acquisition and Materiel Management, an element of VA's Office of Financial Management, has overall responsibility for formulating VA policies on logistics issues, including inventory management. OA&MM develops inventory management policy and provides VAMC staff training in inventory management theory and techniques. OA&MM operated VA's system of centralized supply distribution depots until they were discontinued in 1994.

VHA has operational responsibility for VAMC medical supply inventories. In December 1997, the Under Secretary for Health established a Procurement Office as an element of the office of VHA's CFO. This new office was formed to establish greater operational accountability and responsibility within VHA in order to better address headquarters and field level logistics issues and to expand VHA's role in Department-level logistics policy and management.

Generic Inventory Package. Developed and maintained by OA&MM, GIP is the automated supply inventory management module of VA's Integrated Funds Distribution, Control Point Activity, Accounting, and Procurement (IFCAP) system. At the VAMC level, GIP provides automated inventory control capabilities for managing the receipt, storage, and distribution of supplies for the warehouse and other primary storage and distribution points and for secondary points. GIP can automatically generate replenishment and purchase orders, maintain perpetual inventory balances and item usage history, provide a variety of inventory management reports, and accurately allocate supply costs to the using activity. GIP can also accommodate special inventory operations such as the preparation of standardized surgical case carts and procedure trays that contain both disposable and reusable supply and equipment items. OA&MM and VHA have encouraged, but have not required, VAMCs to use GIP. As of November 1998, VHA was considering the acquisition of a new management data system to replace IFCAP. This system may include a new inventory control module that would replace GIP in 2-3 years.

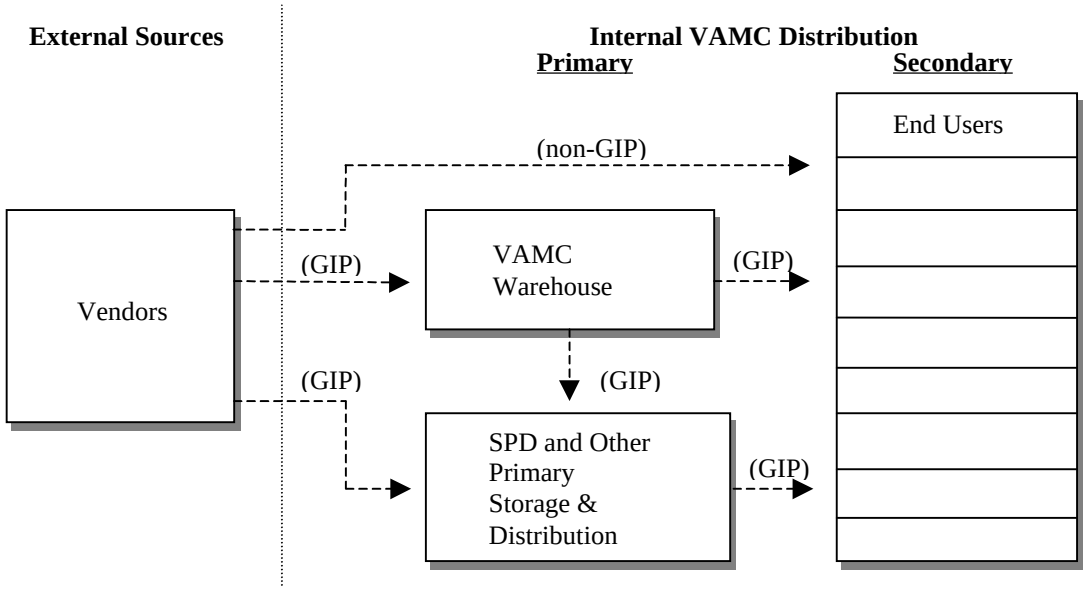
VA Supply Fund. The Supply Fund is a self-sustaining revolving fund operated without fiscal year limitations by OA&MM. The fund acts as a financing mechanism for VAMC warehouse inventories and certain centralized VA procurement activities. The Supply Fund financed VA's supply depot system until its closure in 1994. VAMCs can purchase supplies with Supply Fund monies and place the supplies in their warehouse inventories. When supplies are issued from the warehouse to other medical center storage areas, the VAMC then reimburses the Fund for the cost of the supplies from its appropriated budget. In effect, the Supply Fund allows VAMCs to maintain supply inventories at no cost to them until they use the supplies. In FY 1997, the Supply Fund sold about $181.2 million in supplies to VAMCs, including $120.9 million in medical supplies. VAMCs maintained average monthly Supply Fund warehouse inventories totaling $26.7 million.

VAMC Supply Inventory and Distribution Process. At VAMCs, the materiel management functions of requisitioning, receiving, storing, and distributing supplies traditionally have been the responsibility of the Acquisition and Materiel Management Service (A&MMS). Typically,

A&MMS maintained medical supply inventories in two primary storage points, a warehouse and a SPD section. The warehouse received items from vendors and distributed them to SPD or to the using services. SPD received items from the warehouse and/or from outside vendors and made distribution to using services. Some clinical services, such as Surgery, Radiology, and Cardiology, typically receive a significant portion of their supplies directly from vendors and manage their own inventories of these supplies.

The medical supply distribution processes used at a typical VAMC are illustrated in Figure 3:

Figure 3. Typical VAMC Medical Supply Distribution Processes



In recent years, some VAMCs have moved away from the traditional materiel management model in order to streamline their inventory activities. For example, some VAMCs have consolidated the materiel management functions of their warehouse and SPD activities.

Recent Changes in Inventory Management

Department of Defense (DoD) and Private Sector Medical Supply Initiatives. Over the past decade, private sector hospitals and DoD have taken actions to improve the management of medical supplies. In response to growing inventory costs, many private sector facilities changed the way they buy, store, and distribute medical supplies. They achieved large savings by standardizing items, eliminating storage locations, and relying on vendors to deliver smaller quantities of supplies when and where needed. This just-in-time approach is often accomplished through the use of a prime vendor.

Under the prime vendor approach, the customer contracts with a single vendor who buys inventory from various suppliers and stores the inventory in its own warehouse. The customer orders supplies as needed from the vendor, usually through an electronic ordering system. Depending on the specific requirements, the vendor delivers the supplies within a few hours or

up to 1-3 days. For these services the customer pays a distribution fee in addition to the cost of the supplies to the prime vendor.

In response to its own budget constraints, DoD undertook inventory reduction initiatives that included a pharmaceutical and medical supply prime vendor program. These efforts reduced the size of DoD's storage and distribution functions, emptied warehouses, eliminated unnecessary layers of inventory, and reduced the size of the DoD supply system. In July 1997 Congressional testimony, the General Accounting Office (GAO) estimated that DoD efforts resulted in savings that exceeded $700 million.[5]

Closure of VA Supply Depot System. The most significant event affecting VA medical supply distribution was the 1994 closure of the Supply Depot System. For over 50 years, VAMCs had relied on the depots as their source for most medical supply, subsistence, and pharmaceutical items. The depots purchased and stored large quantities of supplies sufficient to support the needs of all VAMCs. The depots typically distributed supplies to VAMCs in bulk quantities at infrequent intervals. When the depots ceased operations, VAMCs began obtaining supplies directly from commercial vendors under Federal Supply Schedule, VA-wide, and local contracts.

Reinvention Plan. In 1994, OA&MM developed a plan called PROGRESS (Program to Guide the Reinvention of Enhanced Supply Support) to modernize VAMC medical supply management. VHA top management endorsed PROGRESS as a guide to help VAMCs reduce inventory costs and streamline their supply and distribution processes. PROGRESS emphasized the use of automated systems and modern supply principles. PROGRESS suggested such steps as the consolidation of redundant materiel management functions, the reduction of inventory levels, including the elimination of "unofficial inventories," a greater emphasis on customer service, the use of prime vendors, and the expansion of MM services to clinical services that maintained their own inventories.

VA Prime Vendor Initiatives. In 1993, after completing a pilot program, VA established a pharmaceutical prime vendor program (PPV). As the depot system was phased out, PPV became the VAMCs' principal source of supply for drugs and medicines. PPV now accounts for about $1.3 billion in annual pharmaceutical purchases. The prime vendor program has generally been acknowledged as improving the acquisition and distribution of drugs and medicines by reducing ordering and holding costs, providing next-day delivery, improving fill rates, reducing inventory levels, and allowing more flexibility in brand name/generic item substitutions.

Beginning in FY 1995, VA established limited prime vendor-type agreements called Customer Ordering Contracts with several vendors for medical supplies. VAMC use of the contracts was voluntary, and VAMCs have generally made little use of them. As of November 1998, VHA and OA&MM were developing an initiative for a national medical supply prime vendor program. Under this initiative, each Veterans Integrated Service Network (VISN) would have a contract with a vendor-distributor for the next-day delivery of medical supplies to VAMCs.

[5] GAO, Greater Use of Best Practices Could Reduce DOD's Logistics Costs (GAO/T-NSAID-97-214; July 24, 1997)

Purchase of Bar Code Scanning Equipment. In FY 1997, OA&MM purchased and distributed state-of-the-art portable bar code scanning equipment and computers costing $4.7 million to all VAMCs. This equipment was intended to facilitate VAMC use of GIP in managing inventories.

VA Task Force Draft Report on Integrated Logistics Strategies. In April 1997, a VA task force prepared a draft report entitled "VA Acquisition and Distribution: an Integrated Logistics Strategy." The task force evaluated VA logistics systems, reviewed private sector practices, identified various best practices and impediments, and developed recommendations to improve existing and future VA procurement and distribution processes. Specific recommendations included changing logistics processes to complement the new VHA organizational structure; accelerating logistics systems development and standardization; developing cost-effective materiel management approaches; developing performance measures and a comprehensive training strategy; and improving the use of purchase cards and electronic commerce. As of November 1998, VHA had not formally acted upon the study's recommendations.

Previous OIG Audits

Two 1995 OIG reports addressed issues pertaining to medical supply inventory management. The July 1995 Audit of Medical Supplies Acquisition and Distribution Systems (Report Number 5R4-E01-085; July 31, 1995) found that VA had begun addressing the new supply procurement and distribution requirements that had resulted from the 1994 closure of VA's supply depot system. In the area of inventory management, the audit recommended that VHA and OA&MM encourage VAMCs to streamline their supply distribution processes.

The September 1995 Review of Operating Supply Inventories at VA Medical Centers (Report Number 5R7-E04-099; September 15, 1995) found that VHA could reduce costs by improving VAMC management of operating (medical, pharmaceutical, and engineering) supply inventories. At eight VAMCs, the review found inadequate inventory controls and about $12.8 million in excess supplies. The review recommended that VHA and OA&MM establish controls to provide accountability over operating supply inventories, require VAMCs to reduce excess inventories, and decide if VAMC implementation of the GIP automated inventory system should be mandatory.

In response to these two reviews, VHA issued an information letter encouraging VAMCs to use modern techniques such as prime vendors, GIP, and barcoding to improve inventory management. The letter emphasized that VHA could "ill afford to have scarce dollar resources tied up in medical center inventories which can become outdated, misused, or lost." (Under Secretary for Health Information Letter 10-96-007, "Medical Center Inventory Management," dated May 16, 1996)

Objectives, Scope, and Methodology

Objectives

The purpose of the audit was to evaluate VAMC management of medical supply inventories. The two audit objectives were to:

- Determine if VAMC medical supply inventories exceeded current needs.
- Evaluate how effectively VAMCs were using modern inventory management practices, including automation-assisted processes and controls.

Scope and Methodology

To accomplish the audit objectives, we reviewed policy, procedures, and other guidance, VA studies, and OIG and GAO audit reports pertaining to medical supply inventory management issues. We reviewed technical guidance for the GIP system and available management reports. We discussed inventory management practices and recent and planned initiatives with responsible VA Central Office and VAMC officials. We compiled comparative medical supply cost and workload data for all VAMCs.

To obtain an overview of VAMC inventory management practices, we conducted a telephone survey of materiel management officials at 30 VAMCs. To assess the availability, reliability, and use of automated inventory tools, we obtained and analyzed GIP system inventory reports from these VAMCs. Based on our telephone survey and discussions with VA Central Office officials, we performed onsite audits at five VAMCs, which are designated as VAMCs A, B, C, D, and E in this report.

Auditing these VAMCs allowed us to evaluate inventory management practices and controls in the context of a varied range of relevant operational characteristics. The five VAMCs were affiliated, tertiary care facilities with medium to large patient care workloads, high program complexity, and moderate to high levels of medical supply expenditures. They were representative of the types of VAMCs that account for most of VHA's medical supply expenditures. The five VAMCs were located in different VISNs around the country and included both high and low level users of the Supply Fund and users and non-users of prime vendors.

At each VAMC we held discussions with responsible materiel management and clinical officials, inspected supply storage areas, and observed supply requisition and distribution practices. We also reviewed selected GIP and non-GIP medical supply items in detail to verify stock levels, demand, and cost. In our opinion, the work performed at these five VAMCs, along with our other analyses of VHA supply data, provides a reasonable basis for assessing the status of inventory management VHA-wide.

The audit covered the period FY 1997 and FY 1998 through June 1998. The scope of the audit was limited specifically to medical supply inventories and did not cover other types of supplies such as pharmaceuticals or prosthetics.

We performed the audit in accordance with generally accepted government auditing standards. To meet the audit objectives, we used computer-processed inventory data obtained from individual VAMC IFCAP/GIP systems and medical supply expenditure data obtained from VA's automated Financial Management System. We conducted tests to assess the reliability of this data. We concluded that the data was sufficiently reliable to meet the audit objectives, with one exception. At VAMC E, we determined that the automated data on supply usage was not accurate for a large portion of the inventory. As explained in footnote 2 (page 2) we excluded this data from our analysis.

Details of Audit

VAMCs Could More Effectively Use GIP Controls

GIP has various automated controls and features for managing the receipt, storage, and distribution of supplies for both the primary and secondary inventory points. GIP can auto-generate replenishment and purchase orders, make efficient use of barcode/scanning equipment, and provide a variety of management reports. None of the five VAMCs audited were consistently using all the features available in GIP. As summarized below, the use of GIP features varied considerably among the five VAMCs, ranging from VAMC D, which made some use of six of the seven most important GIP features, to VAMC E, which used only one of the seven features:

GIP Control/Feature	VAMC A	VAMC B	VAMC C	VAMC D	VAMC E
Auto-generation of Replenishment Orders	Partial	Partial	No	Partial	No
Barcode/Scanning for Replenishments	Extensive	Extensive	Limited	Limited	Extensive
Surgical Case Cart System	No	No	No	Yes	No
Physical Inventories	Yes	Warehouse only	No	Yes	No
Turnover Rate Monitoring	Partial	Partial	Yes	Partial	No
Identification of Inactive Items	No	No	Recent	No	No
Fill Rates/Shortage Monitoring	Partial	Partial	Yes	Partial	No

VAMC use of the seven GIP controls and features is discussed in more detail below.

Auto-generation of Replenishment Orders. The GIP auto-generate feature can reduce the time and effort required to place replenishment orders. When the GIP inventory balance for an item is reduced to the reorder level, GIP can automatically generate a replenishment request that can be initiated with varying levels of review by the inventory manager. None of the five VAMCs was realizing the full benefit of the auto-generate feature. VAMC C and E materiel management staff indicated that they did not use the auto-generate feature because they did not have confidence in the accuracy of their inventory balances. Auto-generate was used to varying degrees at the other VAMCs, although some staff indicated that they relied on visual inspection of the actual quantities on hand and supplemental staff-initiated orders to overcome limitations in the accuracy of their GIP inventory balances.

Barcode Scanning. In FY 1997, OA&MM purchased and distributed portable barcode scanning equipment to all VAMCs. This equipment was intended to facilitate VAMC use of GIP in managing their inventories. The use of barcode scanning varied widely at the five VAMCs. VAMCs E, B, and A were making extensive use of barcode technology, with scanning being used as the basis for replenishment in 89 percent, 76 percent, and 61 percent of their GIP inventory distribution points respectively. In contrast, VAMC D used barcode scanning for only 26 percent of its distribution points, and VAMC C used it for only 12 percent.

Surgical Case Cart System. GIP includes features designed to facilitate the ordering, assembling, disassembling, and inventory tracking for both expendable supply and reusable

equipment items contained in surgical carts, procedure trays, and instrument kits. Only one of five medical centers, VAMC D, had implemented the case cart system.

Physical Inventories. GIP can provide physical count forms for every inventory point. These forms can be used to check automated inventory record balances against actual quantities on hand. This can help identify inaccuracies and detect problems that could be causing shortages or excess inventory. Annual physical inventories are required for inventory purchased through the Supply Fund. The purpose of these inventories is to insure that the value of warehouse supplies on hand is correctly stated in Supply Fund accounting records. However, there is not a comparable requirement to perform annual physical inventories for non-Supply Fund stock, which is typically stored in SPD. VAMCs A and D had done inventories of both warehouse and SPD stock. VAMC B had completed an inventory for warehouse stock but not for SPD stock. VAMCs C and E had not done physical inventories at all.

Turnover Rates. GIP can provide inventory turnover ratio data, which is a widely accepted inventory control indicator. The turnover rate shows the number of times an inventory is turned into distributions. Inventory turnover is calculated by dividing the total dollar value of distributions by the value of the average stock on hand for a given period, such as a year. High turnover rates are normally indicative of good inventory management. Of the five VAMCs, only VAMC C monitored turnover rates for all GIP primary inventory. VAMCs A, B, and D monitored turnover rates for either the warehouse or SPD, the two primary inventory points, but they did not monitor turnover for both points. VAMC E did not monitor turnover rates at all.

Inactive Items. The GIP Inactive Item Report lists items that have had no activity within a specified period. The report identifies slow moving, low demand items. None of the five VAMCs had routinely used the report to evaluate inactive items. VAMC C began using this report in March 1998 and within 3 months had reduced the number of inactive items from 298 to 49. (At the time of the audit, the 49 remaining items required further review.)

Fill Rates and Shortages. GIP can provide inventory managers with the data needed to monitor fill rates and shortages. The fill rate is a measure of customer service. It indicates how well the MM activity is replenishing supply items to using activities so shortages are avoided. VAMC C was monitoring fill rates for distribution points covered by SPD, their only primary inventory point. VAMCs A, B, and D were monitoring fill rates for some distribution points but not for others. VAMC E was not monitoring fill rates at all.

Materiel Management Activities Have Improved Replenishment Services to Secondary Inventory Points

At all five VAMCs, the MM activities had made efforts to improve the replenishment of supplies at secondary GIP inventory points. Secondary points are the distribution points located in the clinical services where the supplies are used. Our review of 125 items stocked in 68 secondary points at the 5 VAMCs found that these secondary inventories were generally reasonable at four of the five VAMCs. (At VAMC A we found excess inventory for 28 of 97 secondary inventory items reviewed.) MM staffs typically replenished secondary inventories on daily, 3-5 times a week, or weekly schedules. Discussions with clinical staff indicated that the level of MM

inventory replenishment was generally satisfactory or had improved in the past 1-2 years. However, some secondary inventory management problems persisted, resulting in both shortages and excessive stock, as illustrated in the following examples:

- At VAMC E, we identified shortages in three secondary inventory points serviced by SPD. Anesthesiology Service maintained a separate "unofficial inventory," with a 2-3 day supply for about 43 items over and above the stock in the official secondary point. Clinical staff maintained this unofficial inventory to ensure that they would not run out of items they considered critical for day-to-day operations.

  In two intensive care units (ICUs), SPD staff had placed "out of stock" signs in bins where a number of items were normally stored. The signs meant that SPD had run out of stock for those items and could not supply the items until replenishment stock was received from a vendor. ICU staff indicated that these shortages occurred frequently, which forced them to borrow needed items from other clinical areas.

- At VAMC A, an ICU secondary inventory point had 900 catheter-needle units in stock (value = $1,672), which equated to a 90-day supply. ICU nursing staff indicated that they kept stock at this very high level because of their past problems with SPD replenishments.

Estimate of Excess VAMC Medical Supply Inventories

VHA did not maintain data on the value of medical supply inventories VHA-wide, and individual VAMCs did not maintain this data for their facilities. To estimate the values of total inventory and excess inventory VHA-wide, we extrapolated the results from our audits at five VAMCs to all VAMCs. Using this approach, we estimated that at any given time during FYs 1997-1998 the total value of medical supply inventories at all VAMCs was about $103.8 million and the value of inventory in excess of a 30-day supply was $64.1 million. We used a five-step process to reach these estimates:

1. Based on GIP data, the value of the GIP inventories at the five VAMCs was at least $3,786,672. (The value was actually higher because this figure did not include the value of GIP inventory in secondary inventory points. This data was not captured in GIP at any of the five VAMCs.)

2. None of the five VAMCs maintained data on the value of non-GIP inventories. Because this data was not available, we selected a judgment sample of 100 non-GIP items and used the purchase cost and the value of stock on hand for these items to estimate the value of non-GIP inventories for the five VAMCs. The judgment sample represented a reasonable cross-section of non-GIP items at each VAMC. We determined the proportion of on-hand inventory value to purchase cost for each of the 100 sample items and then extrapolated these proportions to the total non-GIP purchases at each of the five VAMCs. This approach yielded an estimated value of $3,169,960 for the non-GIP inventories at the five VAMCs.

3. For the five VAMCs combined, the total estimated value of GIP and non-GIP inventories was $6,956,632. Of this amount, $4,299,159 (61.8 percent) was excess inventory based on the 30-day criterion. For each VAMC we calculated excess inventory by comparing the item

quantities on hand to the quantities that would be needed to meet demand for 30 days. (To estimate the value of excess inventory in VAMC E's SPD, where GIP data was too inaccurate, we applied the proportion of inventory that was excess at the other four VAMCs and at VAMC E's warehouse to the $1,462,187 value of the SPD inventory. This yielded a value of $1,011,833 [rounded to $1.0 million] for the excess SPD inventory.)

4. To estimate the value of inventories VHA-wide, we applied the overall proportion of stock on hand versus purchase costs at the five VAMCs to the total medical supply purchase costs at all VAMCs. The proportion for the five VAMCs was 46.7 percent. VHA-wide costs for medical supplies during the first 2 quarters of FY 1998 was $222,288,794. Applying the 46.7 percent proportion yielded an estimated value of $103,776,064 (rounded to $103.8 million) for the overall VHA medical supply inventory. In our opinion, this is a reasonable estimate of the value of the inventory at any given time under current inventory management practices. (For the estimates of inventory value at the five VAMCs and VHA-wide, we used supply purchase cost data for the first 2 quarters of FY 1998. We used this data because it was the most current cost data in relation to the inventory data at the time we performed our onsite audits.)

5. As noted in step 3 above, the proportion of excess inventory at the five VAMCs was 61.8 percent. Applying this proportion to the estimated $103,776,064 value of the overall inventory yielded a value of $64,126,837 (rounded to $64.1 million) for overall excess inventory.

Using the same process, we calculated the values of inventory that could be eliminated based on achieving five possible goals ranging from the minimum goal of a 30-day inventory level to the aggressive goal of a 7-day level:

Table 1. Estimated VHA-Wide Inventory Cost Reductions Using Five Possible Goals

	Potential Inventory Cost Reductions (in Millions)		
Goal (Days of Supply)	**GIP**	**Non-GIP**	**Total**
30	$39.1 (69.2%)	$25.0 (53.0%)	$64.1 (61.8%)
21	$43.2 (76.5%)	$28.9 (61.2%)	$72.1 (69.5%)
19 (Midpoint)	$45.1 (79.9%)	$30.5 (64.6%)	$75.6 (72.9%)
14	$46.9 (83.1%)	$32.8 (69.3%)	$79.7 (76.8%)
7	$51.1 (90.5%)	$36.1 (76.2%)	$87.2 (84.0%)

In our opinion, the midpoint between the 30 and 7-day goals is a reasonable goal that could be achieved by more effectively using automation and by increasing the use of prime vendors. Reaching the midpoint goal would reduce inventory levels to about a 19-day supply and would decrease excess inventories VHA-wide by $75.6 million. These funds could be used to meet other VHA needs, instead of being tied up in excess inventory. The $75.6 million estimate is conservative because: (1) our inventory counts at the five VAMCs were performed during the last month of a fiscal quarter, when inventories tend to be lower because most supplies purchased at the beginning of the quarter have been used and (2) the estimate does not include excess that may be stored at thousands of VAMC secondary inventory points or in "unofficial inventories."

Monetary Benefits in Accordance with IG Act Amendments

Report Title: Audit of VA Medical Center Management of Medical Supply Inventories

Project Number: 8R8-045

Recommendation Number	Category/Explanation of Benefits	Better Use of Funds	Questioned Costs
1a-c	Better use of funds by reducing excess inventories, monitoring VAMC progress in reducing inventories, and providing training on inventory management.	$75.6 million	

Under Secretary for Health Comments

Department of Veterans Affairs

Memorandum

Date: February 24, 1999

From: Under Secretary for Health (10/105E)

Subj: OIG Draft Report, *Audit of VA Medical Center Management of Medical Supply Inventories*, Project No. 8R8-E04 (EDMS Folder 40579)

To: Assistant Inspector General for Auditing (52)

1. The appropriate VHA program offices have reviewed the report. We concur with your findings, recommendations and estimate of better use of funds. The opportunity to achieve significant savings, such as your estimated $75.6 million, by ensuring facilities take advantage of the inventory management tools already available to them to reduce inventory levels must not be lost. VHA needs to fully exploit such opportunities as we face the continuing challenge of providing a full range of services to veterans in an era of flat-line budgets. We are taking immediate steps to capitalize on these opportunities.

2. For instance, one of the first tasks of the proposed VHA CFO Logistics Office will be to draft policy on the management of facility supply inventories. We also plan to establish several field-based work groups to focus on identifying and disseminating a best practices model of managing inventories through the Generic Inventory Package (GIP) system (including hardware, software and training issues), and to deal with performance measures related to logistics. We will, of course, coordinate these activities with the Supply Automation Advisory Network, the National Cost Containment Center and the Office of Acquisition and Materiel Management. Further details of our planned strategy are found in the attached action plan.

3. Thank you for the opportunity to review the draft report. If you have any questions, please contact Paul C. Gibert, Jr., Director, Management Review and Administration Service (105E), Office of Policy and Planning, at 202.273.8355.

(Original signed by:)
Kenneth W. Kizer, M.D., M.P.H.

Attachment

VA FORM **2105**
MAR 1989

Under Secretary for Health Comments (Continued)

Action Plan in Response to OIG/GAO/MI Audits/Program Evaluations/Reviews

Name of Report: *Audit of VA Medical Center Management of Medical Supply Inventories*
Project No.: 8R8-E04
Date of Report: Undated draft report

Recommendations/ Actions	Status	Completion Date

Recommendation 1: We recommend that the Under Secretary for Health:

a. Issue guidance requiring VAMCs to eliminate excess medical supply inventories and to use modern inventory management techniques. The guidance should specify that VAMCs should: (1) establish goals for reducing inventory levels, with a 30-day level as the minimum goal; (2) use GIP or its successor system to manage all inventories, including high-cost service level inventories; and (3) establish effective procedures for setting and monitoring normal stock levels, avoiding unnecessary large quantity purchases, and managing decreases in item demand.

Concur

The VHA CFO's Logistics Office will draft policy on the management of VAMC supply inventories, including setting a maximum supply stock level at no greater than 30 days. This policy should be issued by July 31, 1999. Regarding 1a(2), The VHA CFO's Logistics Office will commission a field-based work group to determine a best practice model of managing inventories through the GIP system. The group will focus on hardware, software and training issues related to the use of the system. The group will also work with related groups, such as the Chief Information Officer (CIO), the Supply Automation Advisory Network, the National Cost Containment Center and the Office of Acquisition and Materiel Management to take action on issues identified by this work group. We anticipate completion of the work groups findings and recommendations by October 1, 1999. In response to 1a(3), along with requiring setting and monitoring of normal stock levels, the VHA CFO will commission another work group to deal specifically with performance measures related to logistics. Inventory Management measures will be included and measures specifically dealing with stock on hand will be established. This information will be collected and shared on a Report Card type basis by VISN. Implementation is planned for September 30, 1999.

	In process	10/1/99

b. Establish procedures to monitor VAMC progress in reducing inventories and to insure that inventory reduction goals are met.

Under Secretary for Health Comments (Continued)

Concur

This will be accomplished through completion of recommendations 1a(1) and 1a(3).

In process	9/30/99

c. Provide VAMC inventory staff training on modern inventory management principles and techniques and on the use of automation for inventory management.

Concur

This will be accomplished through completion of recommendation 1a(2).

In process	10/1/99 and on-going

Recommendation 2: We recommend that the Assistant Secretary for Management insure that OA&MM provides VHA with technical support and assistance in preparing the recommended guidance on inventory management and in providing the recommended training.

Although the Assistant Secretary's office has action on this recommendation, VHA plans to include/coordinate with that office in the process of preparing guidance and providing necessary training.

Assistant Secretary for Financial Management Comments

Department of Veterans Affairs

Memorandum

Date: February 23, 1999

From: Assistant Secretary for Financial Management (004)

Subj: Draft Report: Audit of VA Medical Center Management of Medical Supply Inventories (Project No. 88-045)

To: Assistant Inspector General for Auditing (52)

1. We appreciate the opportunity to review the subject draft report and offer the following comments:

Recommendation 1 - Concur

Recommend that the Under Secretary for Health (a) issue guidance requiring VAMCs to establish goals for inventory reductions and to use automation and other modern techniques for managing their inventories; (b) establish procedures to monitor VAMC progress in reducing inventories; and (c) provide VAMC staff training aimed at improving inventory management.

Comment: Because responsibility for VA materiel management policy lies within the Office of Acquisition and Materiel Management (OA&MM) along with oversight for the implementation of that policy, we suggest the recommendation be assigned jointly to the Under Secretary for Health and the Assistant Secretary for Financial Management.

Recommendation 2 - Concur

Recommend that the Assistant Secretary for Financial Management insure that OA&MM provides VHA with technical support and assistance in preparing the recommended guidance on inventory management and in providing the recommended training.

Comment: As currently written, OA&MM is simply charged with providing assistance to VHA. For the same reason stated in the comment above, OA&MM should have more than just an advisory role in addressing the actions in recommendation 1.

2. Implementation of these recommendations should result in improved inventory to management at VAMCs. However, others factor that have caused some of the deficiencies noted in the audit include medical center reorganizations that have severely compromised or eliminated altogether the A&MMS activity. At many VAMCs, the materiel management function has been eliminated or absorbed into an organization where it has little impact on medical center operations. A coordinated and integrated logistics system within the medical centers is essential to manage their inventories. Therefore, we would like to see a mention of the impact medical center reorganizations have had in inventory management. We also look forward to the

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Assistant Secretary for Financial Management Comments (Continued)

2.

Assistant Inspector General for Auditing (52)

establishment of the proposed Office of Logistics in VHA and our working with that office to facilitate the correction of this situation.

3. Please note this office's title was changed from the Office of Management to the Office of Financial Management, per the Secretary's memo dated 1/27/99.

4. Thank you for the opportunity to comment on the draft report. Should you have questions pertaining to these comments, please contact Robert McKenna, Director, materiel Management, at 273-6116.

(Original signed by:)
Edward A. Powell, Jr.

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