

Final Deliverable

**HOME OXYGEN CONTRACTS
STUDY**



Department of Veterans Affairs

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information of the company to whom it is addressed.*

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Introduction/Methodology

The Veterans Health Administration contracts with commercial vendors to provide a variety of supplemental home oxygen services to veterans

Veterans suffering from chronic obstructive pulmonary disease or other respiratory and cardiac conditions may require supplemental oxygen to assist in normal breathing. Oxygen may be provided in the home by three methods:

- Compressed gas, which is contained in tanks or cylinders;
- Oxygen concentrators, which are machines that extract oxygen from room air; and
- Liquid oxygen, which is provided in large stationary tanks as well as portable units.

Veterans Administration Medical Centers (VAMCs) contract with commercial vendors to supply supplemental home oxygen to its patients. These contracts vary greatly in the types of services vendors provide. Some VAMCs have purchased their own respiratory equipment and contract only for the provision of oxygen. Some VAMCs rent this equipment. Other VAMCs contract with vendors to provide both oxygen and the equipment, as well as to perform patient assessments and provide patient care to veterans.

The VHA Handbook (1173.13) states that contractors must comply with the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) standards, and tasks the Contracting Officer's Technical Representative (COTR) with ensuring the vendor's compliance with contract requirements, including JCAHO requirements as specified in the contract.

Booz Allen Hamilton evaluated home oxygen contracting practices throughout VA to identify variances in home oxygen contracts and the impact of these variances

VA has contracted with Booz Allen Hamilton (BAH) to conduct a program evaluation of the VA's Prosthetic and Sensory Aids Services program. Since the cost and administration of the home oxygen program falls under PSAS, this program evaluation includes a review of home oxygen contracting practices. VA has specifically contracted BAH to review home oxygen contracting practices across the VA and to evaluate the variances in contract conditions, as well as to determine the impact of these variances. Additionally, VA is interested in the identification of leading practices in home oxygen contracting.

The PSAS Program Evaluation also includes another study on home oxygen, related to the quality of life and patient satisfaction of patients who are discharged home with home oxygen services. Leading practices identified in the areas of patient satisfaction and quality of life related to home oxygen will be provided to VA within that report.

The Booz Allen team designed the study methodology to cover both variances in contract characteristics and differences in contract management and monitoring practices

The BAH team reviewed 16 home oxygen contracts from medical centers across the country. The listing of sites from which contracts were reviewed can be found in Appendix **A**.

We developed a contract review tool to compare VHA contracts for home oxygen. Through this comparison tool, we addressed contracting conditions such as method of solicitation and type of negotiation to types of contracts, such as the utilization of facility-specific contracts and VISN-wide contracts. We also reviewed the contracts at a high level for comprehensiveness and clarity of requirements. We reviewed the contracts for the inclusion of industry-accepted requirements, such as equipment maintenance requirements and the existence of emergency preparedness plans. We compared the types of services provided through home oxygen contracts, to determine the level of service provided at various VAMCs. Some medical centers contract with vendors to provide only oxygen and the related equipment while other medical centers require vendors to perform patient assessments and provide patient care in addition to the provision of oxygen and equipment.

Additionally, BAH contacted VHA staff representing 52 VA medical centers (VAMCs) and interviewed these representatives on the content of their current home oxygen contracts and vendor monitoring practices. We created the telephone interview tool to mirror the contract review tool as much as possible, to maintain continuity in the information reviewed. We asked VA staff whether their home oxygen contracts included the types of requirements that we looked for in our contracts review. We supplemented these questions with key questions related to the monitoring of vendors and the management of the contracts. We also interviewed VA representatives on quality improvement practices, performance improvement plans, and quality assurance requirements related to home oxygen services, specifically home oxygen contracting. Both the contract review tool and telephone interview tool exist as one document, in which the questions asked during telephone interviews are bolded. This tool can be found in Appendix **B**. Additionally, a listing of sites interviewed for this study is provided in Appendix **A**.

To determine industry-accepted requirements for home oxygen, we reviewed accreditation requirements and standards for home oxygen service by Medicare, Accreditation Commission for Health Care (ACHC), Community Health Accreditation Program (CHAP), and JCAHO. While there were variances in standards and requirements among the different organizations, most requirements focused on similar areas. Since JCAHO's standards are the most widely-utilized in the country, and since the VHA Directive specifically requires compliance to JCAHO standards, we referenced JCAHO's *Home Medical Equipment Service* and *Clinical Respiratory Service* standards for 2001-2002.

We also performed a high-level evaluation of home oxygen costs across our sample of contracts and facilities interviewed. In 1997, a GAO Report compared the costs of home oxygen services provided by both Medicare and VA, and determined that VA provided home oxygen services at a significantly lower cost than Medicare, while providing more oxygen refills and performing more frequent service visits to its patients. For this study, we focused on contractor costs and variances within the VA system from facility to facility.

To identify the range of variances in cost for home oxygen services, we asked each VA representative to provide information related to the number of home oxygen patients covered by the current contract and the cost of the home oxygen contract for fiscal year 2001. We utilized this information to develop rough

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estimates of the average annual cost per patient at each location for which data were collected, to be used for cost comparison purposes. We qualitatively compared these figures to the national average, based on aggregate cost data for the entire VA system, and provide a picture of the range of cost per patient reported across that system.

To determine the national average, we obtained total costs for home oxygen services for fiscal year 2001 from end of year reports of the National Prosthetic Patient Database (NPPD). We also obtained VA-wide home oxygen costs for fiscal years 1998, 1999, and 2000 from the Cost Distribution Report (CDR). Using this data, we calculated the overall average annual cost incurred, per patient, for home oxygen contracted services.

The BAH team also conducted site visits to seven VAMCs and interviewed representatives from Pulmonary, PSAS, Respiratory Therapy, and Acquisitions and Materials Management. The seven sites that were included in this review are:

- Hines, IL
- Atlanta, GA
- New York, NY
- Richmond, VA
- Seattle, WA
- Miami, FL
- West Palm Beach, FL

Booz Allen identified some limitations in the quality of the VA data and the information used to conduct cost analysis

Prior to fiscal year 2001, VA cost information for home oxygen services had been collected through a variety of different databases, such as the Prosthetic and Sensory Aids Services' NPPD and the Pharmacy Module of the Veterans Health Information Systems and Technology Architecture (VISTA). No one database captured the entire dataset for all medical centers related to volume and cost for home oxygen services prior to fiscal year 2001.

The cost/pricing information in the home oxygen contracts reviewed was not comparable, as the information was highly specific to the services required by each contract. In addition, we did not have access to data governing all possible causes of cost variances. Such data might have included differences in vendor market availability, economic indicators or cost of living variances, and detailed information on individual patient health status variability from facility to facility.

In 1994, the VA National Center for Cost Containment published a cost analysis report on VA's home oxygen program costs, specifically the commercial costs for the provision of home oxygen. We contacted the VA's National Center for Cost Containment, located in Milwaukee, Wisconsin, to determine whether data had been collected on home oxygen cost since the *1994 Home Oxygen Program Cost Analysis*. We were told that the Center has not performed additional analyses in the area of home oxygen costs.

The Booz Allen team obtained end-of-year total costs for home oxygen equipment and supplies through the NPPD for fiscal year 2001. This information was not available at the facility or VISN level; however, we did obtain national volume and cost data, from which we derived an average cost per patient amount for fiscal year 2001. The NPPD data include not only what was paid to vendors for home oxygen services, but also what was spent on the purchase and rental of home oxygen equipment. Both of these amounts are important in determining total cost to VA for home oxygen services.

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The BAH team collected cost information from each medical center representative interviewed. Due to the ready availability of home oxygen cost data for fiscal year 2001, we focused our cost-related questions on this year. However, to develop an average cost per patient, we also sought out the volume of home oxygen patients at each facility that we contacted. VA staff provided information on the number of home oxygen patients *currently* within their care. When asked about the number of home oxygen patients during fiscal year 2001, most interviewees responded with the current number of home oxygen patients, and several staff members reported that it would take greater time and effort on their part to find volume for FY 2001. Therefore, the average cost per patient is an estimate, as the volume reflects the number of patients covered at the time of the interview, and the cost data reflect costs for fiscal year 2001. The majority of COTRs, home oxygen coordinators, and PSAS chiefs that we contacted reported that the number of home oxygen patients may have increased slightly from fiscal year 2001 to the present time, but that the difference in volume was not dramatically different.

Our findings detail variances in contract language and management practices and identify leading practices where applicable

We have organized the findings from our review of home oxygen contracting practices in VA around the following areas:

1. Variations in contract characteristics
2. Contractual variances in the quality standards required of commercial vendors by VA contracts
3. Variances in contract monitoring and management practices
4. Quality management efforts
5. Home oxygen costs

We will discuss findings from contract review, telephone interviews with medical centers, and site visits as they relate to these areas. Leading practices are identified throughout the document in bold italics.

Findings

VARIATIONS IN CONTRACT CHARACTERISTICS

Contracts were evaluated to identify variances in types of contracts, contract characteristics, and types of services requested

Contracts were evaluated to assess the following basic contract characteristics:

- Coverage area
- Method of solicitation or negotiation
- Type of contract vehicle
- Period of performance (including current status of options or extensions)
- Scope of services

The findings associated with each of these major areas are identified in the remainder of this sub-section.

Coverage Area

The identified range of coverage area included: single facility, multi-facility, VISN-wide, and even multi-VISN coverage in one instance. The full break out is shown in Figure 1, by number of contracts.

Figure 1. Coverage Area Findings

COVERAGE AREA	# OF CONTRACTS
Single-facility Coverage	16
Multi-facility Coverage	5
VISN-wide Coverage	15*
Multi-VISN Coverage	1

* One contract is VISN-wide except for a single facility.

While this study did not focus specifically on VA internal operations costs, labor cost is typically the most significant cost driver in any function or activity. The lower the labor cost, the more cost-efficient a function generally becomes. This has been specifically cited in this study and the previous phase of the PSAS study, where individual VISNs were able to demonstrate and had documented actual savings and efficiencies by moving from facility-level acquisition to VISN-wide, and even multi-VISN contracts. We discuss the benefits and limitations below.

Because internal operations were not included in the scope of this study, it is impossible to estimate the magnitude of any possible cost-efficiencies and determine their materiality with respect to total contract-related costs. One factor is note-worthy however. Of the 37 contracts shown above, over 50% are less than VISN-wide and present some opportunity for this type of savings, especially when this number is extrapolated across the entire VHA network. However, to develop a realistic savings estimate, the VA would need to determine the number of opportunities for consolidation, the number of redundant

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processes or functions to be eliminated, and the estimated labor hours and related indirect costs associated with eliminated processes or functions

There are, however, potential limitations to moving from facility to VISN-wide or multi-VISN contracts, which must be considered on a case-by-case basis. For instance, where a coverage area becomes too broad, the diversity of the capability or capacity of VA networks and the potential diversity of a broader veteran population may be more difficult to address. For instance, in one contract, the vendor had to comply with separate equipment policies and invoicing procedures, depending upon the sub-area of veterans serviced. Similarly, in cases where a contract was found to be less than comprehensive and clear, this weakness would simply be multiplied across several facilities or VISNs.

On the other hand, it is possible that a single facility would necessitate its own contract, due to particularly unique requirements. However, this was not proven out in comparing the various contracts. The underlying requirements were not notably different among the contracts. There were only a handful of basic service packages requested (e.g., equipment rental and oxygen; equipment provision and oxygen; equipment provision, oxygen, and minimal patient care; equipment provision, oxygen, and more extended patient care requirements). Within each basic package, it did not appear that differences in facility requirements were significant enough to warrant separate contract coverage per facility. What differed more was the extent to which requirements and expectations were more clearly articulated within a given service package. More detail on types of services requested is provided below.

Method of Solicitation or Negotiation

Review of the method of solicitation or negotiation of contracts resulted in very minimal findings of variances. Almost every set of services was solicited through a standard request for proposal (RFP) development, issuance, and award process. Only one contract was identified as a sole source, based on 100% set-aside for HUBZone and the presence of only one qualified HUBZone eligible vendor at the time the contract was to be awarded. However, interviews with that PSAS office indicate that they continue to be pleased with the performance of the sole sourced contractor in question, as do the patient population served.

While all but one contract were competitively awarded, several competitive processes were restricted either partially or entirely to a small business bidder market (i.e., competition was among an available market of multiple small business enterprises or among a combined market of small and large businesses). Without further information regarding full market availability in the various locations, no significant conclusions can be made regarding restriction versus non-restriction to small business or other set-asides. However, it would appear (from the frequency with which it occurs and general feedback from contracting representatives) that home oxygen contracting provides VA with a sound arena for meeting its small and/or disadvantaged economic/business goals.

Type of Contract Vehicle

The major categories of contract vehicles generally available include: fixed price, time and materials (T&M), cost, and cost plus fee. However, for home oxygen services, only fixed price and T&M vehicles were utilized. However, where a contract was fixed price, the actual stated responses from interviewees and the actual designation on sample contracts reviewed included the following terms: 1) "fixed price," 2) "firm fixed price" where a total contract price was provided, 3) "fixed price IDIQ," and 4) "fixed price per

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unit.” In addition, one interviewee simply described the contract as follows: “Itemized contract. Cost varies depending on volume of patients.”

Of the 16 sample contracts reviewed, only one specified the contract type, which was fixed price IDIQ. In addition, while all of the contracts included pricing schedules with “estimated quantity,” the schedules do not specify whether prices are to be considered fixed or estimated. However, in many instances where a contract was both reviewed and discussed during an interview, the interviewee designated the contract as being fixed price. Considering all of these factors, it is assumed for the purposes of this study that all variation of responses listed above, as long as they specify fixed price, have only an estimated quantity associated with the fixed “unit prices,” as was the case with all 16 of the sample contracts reviewed. Therefore, each of these contracts is classified as an indefinite delivery/indefinite quantity (IDIQ) vehicle with fixed price provisions (i.e., with fixed prices established on a unit basis). In addition to the data points provided, the very nature of home oxygen services and the impossibility of predicting patient health several years in advance support this assumption.

Because the interview process in certain cases spanned multiple facilities from the same VISN in which a VISN-wide contract had been placed, only 37 discrete contracts are identified as part of the contract-type analysis shown below. These include fifteen (15) VISN-wide contracts, one (1) multi-VISN contract, and twenty-one (21) facility/multi-facility contracts.

One interviewee was unsure of the contract type, and no corresponding sample contract could be used to identify the missing data. The remaining distribution of contract types, however, is shown in Figure 2. Of the thirty-three contracts listed as IDIQ, the sixteen sample contracts reviewed and three interview responses to the contract type question clearly designate contracts as IDIQ vehicles with firm fixed price provisions. The remaining fourteen contracts discussed during interviews only are assumed to be the same contract type, based on the various factors described above.

Figure 2. Type of Contract Vehicle

Contract Types Identified	Number of Responses
IDIQ with firm fixed price provisions (i.e., fixed price per unit or component)	33
Time and materials (T&M)	3
Information not provided by interviewee	1

The vast majority of contracts are designated as IDIQ with fixed price provisions (fixed price established on a per unit basis). Fixing price, at least on a unit basis, provides the primary benefit of shifting a significant portion of financial risk to the potential bidder and/or awardee. It thus facilitates budget planning and reporting on the likely overall financial impact of the contracted services, in advance of actual performance, as long as the quantity of services to be ordered can be fairly accurately estimated.

The down-side of the fixed price vehicle is that it may not provide adequate flexibility to modify types or level of services ordered (as does the time & materials contract type). While firm fixed price controls risk significantly for a static level of need, it creates its own risk of greater contract administration burden and time lags, should the estimated need or order level vary from the actual need of the patients being served, thereby affecting quality of care received. If both the price per unit and the quantity are fixed, the potential burden associated with modifying the contract to meet varying patient needs may be particularly burdensome. If any of the contracts assumed to be IDIQ with firm fixed price provisions are not IDIQ

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vehicles but simply are firm fixed price (i.e., in which both unit price and unit quantity are fixed), this concern over lack of flexibility should be considered and addressed appropriately.

While fixed price provisions are advisable to manage financial risk in the home oxygen program, it is recommended that VA have sufficient flexibility in volume or quantity of orders to adapt to unexpected changes in veteran population, individual patient needs, etc. This mix of financial control and flexibility is provided through the IDIQ vehicle with firm fixed price provisions, as designated for the majority of the contracts included in this study. In using this contract type, however, special attention should be paid to the level at which unit costs are defined in the pricing schedule. A comparison of pricing schedule structure among the sample contracts reviewed was conducted as part of this study, the results of which are provided under the section on “Home Oxygen Costs.”

As noted above, T&M can also be an effective option where the extended level of services required is subject to greater variation throughout the contract period of performance. For instance, where contracts require greater patient care services, more flexibility in defining the services ordered for each individual patient may support the use of T&M, despite the greater overall financial risk to VA.

Period of Performance

All of the contracts reviewed utilized a base year plus varying number of option years. The number of option years ranged from one to four. The only exceptions to this were two facilities that reported unique circumstances. For example, a representative from Walla Walla, WA reported that the patient population is spread throughout an extensive geographical area, and vendors in the market are unable to provide coverage to the entire area. As a result, the facility has developed pricing agreements with several regional vendors, to provide care to its home oxygen population. Another facility, Biloxi, MS is currently utilizing a temporary service contract because its vendor declared bankruptcy. They are currently working on the development of a statement of work for a new contract. The detailed distribution of contract period of performance is shown in Figure 3, on the following page.

Figure 3. Period of Performance

PERIOD OF PERFORMANCE IDENTIFIED	NUMBER OF RESPONSES
Base + 1 option year	1
Base + 2 option years	7*
Base + 3 option years	7
Base + 4 option years	20
No current contract (1 temp in place, and 1 pricing agreement)	2
Subtotal:	37
Contracts above for which extension(s) have been exercised beyond initial POP	3 (1 on 2 nd extension)

Most of the contracts reviewed used a base plus multiple option years, the most popular being 3-4 option years. The use of a base plus options provides the advantage of negotiating a contract that, if effective, can simply be exercised over an extended period of time without necessitating a new RFP evaluation and selection process. This appears to be appropriate for the type of services requested. The primary drivers of change in home oxygen service requirements are volume (patient volume and volume per patient

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based on changing health conditions) and price increases in equipment, supplies, and labor cost. These changes can easily be adapted into option year requirements (i.e., by simply increasing the estimated number of units or orders and adjusting price for anticipated inflation and other economic factors).

The extension, and in one case second extension, of original contracts (which had option years to begin with) tends to raise a red flag. Unless the market and requirements have remained fairly static over a period of three to four years, it is unlikely that a simple extension will promote quality or performance improvement. Competition is removed entirely from the contracting practice, and the clinical or program personnel are not forced to re-evaluate quality and needs.

Scope of Services

The contracts also were reviewed and interviews conducted to determine the scope of services requested, in terms of three major components:

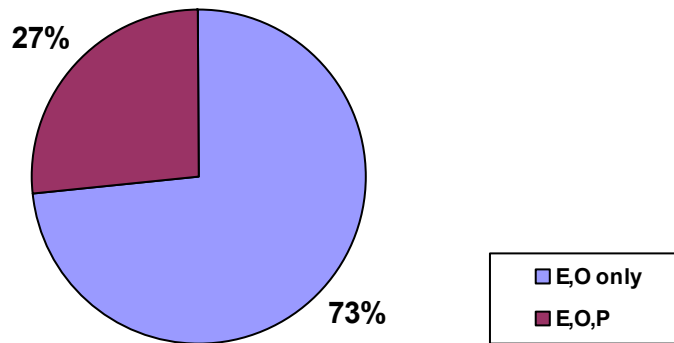
- Equipment (e.g., set-up, servicing/maintenance, repair),
- Oxygen (e.g., cylinders and related supplies), and
- Patient care (e.g., patient visits/clinical assessments and assessment of quality of care/improvements).

While all contracts requested equipment and oxygen services, less than 30% also requested related patient care services

The combination of components included in the contracts reviewed was not always immediately evident upon review of the introductory statement of services requested (where one would expect to find this basic identification of scope). Certain contracts in our sample of contracts reviewed included no overarching statement of services required. Others identified equipment and oxygen in the introductory paragraphs but described patient-care activities within the more detailed statement of work. The category of equipment generally included set-up, servicing or maintenance, and repair, in addition to the actual cost of renting or purchasing the equipment. Oxygen costs also frequently incorporated costs of supplies or accessory items that require replacement on a periodic basis.

The majority of contracts included primarily equipment and oxygen. However, 25-30% also included provision of varying levels of patient care in conjunction with equipment and oxygen services. The following figures illustrate the combinations of components included in the sample contract data set.

Figure 4. Component Combinations



Component Combinations	Number of Contracts with Component Included
Equipment and Oxygen Only	36 (73%)
Equipment, Oxygen, and Patient Care Services	13 (27%)

In addition to articulating the overall scope of services being requested, certain contracts also incorporated clear descriptions of the roles and responsibilities of both the VA and the contractor in providing services and supporting patients. Contracts that did not request patient care services, only equipment and oxygen, still provided an explanation of how patient care was to be integrated with the equipment and oxygen services provided by the contractor. Thus, the SOW described the team in VA responsible for preparing and maintaining the Patient Care Plans and performing clinical assessments, and how those activities relate to the complementary “service plan” of the contractors.

CONTRACTUAL VARIANCES IN QUALITY STANDARDS

The BAH team utilized JCAHO requirements to review variances in contract requirements related to quality of care

To identify variances in contract requirements that have the potential to impact the quality of care provided to veterans, we reviewed the accreditation requirements and quality standards for provision of home oxygen services. Although there are different organizations that provide accreditation for home oxygen/equipment suppliers, we determined that JCAHO standards are the most widely-accepted quality standards in the country for home oxygen services. Additionally, the VHA Handbook specifies that VA contractors should comply with JCAHO standards. We reviewed the JCAHO standards for Home Medical Equipment and Clinical Respiratory Service and identified the major requirements applicable to providers of home oxygen services. These areas are:

1. Education: Basic home safety, Infection Control, Storage and Handling of Equipment
2. Environmental Safety/Maintenance and Inspection of Equipment
3. Emergency Service/Back-up Systems
4. Delivery of Equipment
5. Patient Care: Right to Formulate Advanced Directives, Patient Care Plans, Documentation of Patient Assessments and Care

We reviewed a sample of 16 home oxygen contracts to determine variances in the stipulation of these specific requirements in the contract language. Our findings in this section detail the variances in VA contracts related to the inclusion of these minimum requirements.

The majority of contracts reviewed require vendors to be JCAHO-accredited; all others reference requirement of vendor compliance with JCAHO standards

Thirteen contracts reviewed stipulated that vendors must have JCAHO accreditation. One contract specifically required the vendor to cite any deficiencies in compliance and provide VA with documentation of ongoing corrective actions and final outcomes. Another contract expressly required that the vendor must furnish documentation of accreditation with submission of the proposal, as well as at any time throughout the period of performance upon request.

Leading practice: The contract reviewed from VISN 11 specifically required vendors to adhere to JCAHO standards by listing each relevant standard as a contract requirement.

Two contracts stated that the vendor need not be JCAHO-accredited but must comply with JCAHO standards. One statement of work that became part of the contract indicated that accreditation is not required but plays a role in the selection of the vendor.

Additionally, based on results from the telephone interviews, 17 people reported that their contracts required the vendor to be JCAHO-accredited, while three reported that the vendor must follow JCAHO standards. Only one medical center within our sample reported that JCAHO standards are not required. We did not include results from telephone interviews for medical centers from which we have already

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reviewed contracts, as these results are incorporated in the discussion above related to what is required in the contract. In total, results from contract review and interviews indicate that 30 medical centers require JCAHO accreditation, while five medical centers require vendors to comply with JCAHO standards.

The findings that follow detail the contractual requirements regarding key JCAHO standards for home oxygen services. Many contracts specifically address VA's expectations that the vendor will comply in fundamental areas such as patient education, infection control, equipment management, etc. Additionally, our review indicates that VA contracts also require vendors to officially maintain JCAHO standards. This additional requirement is particularly useful in the event that JCAHO standards change during the period of performance. This requirement obligates contractors to maintain a minimum level of quality service.

Although contracts reviewed may not specifically detail vendor compliance to the requirements discussed in this section, all contractors are indirectly held accountable for complying with these requirements when the contract requires compliance with JCAHO standards.

All contracts reviewed require the vendor to provide some level of patient and family education

Each contract within our sample specified that the home oxygen vendor must provide education related to basic safety and equipment management. Written documentation of the education usually requires the signature of the patient and/or family, demonstrating that the education was provided. This documentation is required to be shared with VA. One contract included a sample of the patient instruction that must be provided by the vendor.

Leading practice: Atlanta's home oxygen contract specified that the education must be provided to the beneficiary in English and in the beneficiary's foreign language, if necessary.

Only 13 of the contracts included the requirement that patient education include instruction on preventing and controlling infection. Three contracts did not specify patient education related to infection control, though one of these three contracts required staff to be trained in infection control.

Leading practice: The San Antonio contract requires the vendor to collect information on any patient illness or hospitalization since the last visit and maintain this information in a log, which is then provided on a quarterly basis to the VA home oxygen team. The vendor is required to collect this information from the patient during visits.

Basic safety and equipment management education on home oxygen equipment is vital to maintaining safe home environments. Such education may include the risk involved in exposing equipment to fire and smoking around oxygen equipment and is critical to maintaining patient safety and appropriate equipment management. Provision of patient education in infection control practices can play a significant role in the prevention of infections. Veterans who require humidification systems for their oxygen — and especially veterans and families of veterans who require ventilator systems — must be trained in infection control. Systems that utilize heated humidifiers or aerosol generators can be significant sources of infection and must be cleaned and disinfected regularly. Examples of infection control practices in the home include

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routine replacement of oxygen tubing and proper disposal of supplies. Contracting practices that do not specifically require vendors to provide such training may potentially impact the health and care of veterans. Inadequate or no infection control practice within the home can lead to respiratory infections and potential re-admissions.

Contract stipulations for equipment servicing and maintenance are inconsistent, while the majority of contracts require vendor documentation of equipment model and serial number

Routine servicing and maintenance of home oxygen equipment is a standard requirement in most VA contracts. It is also a JCAHO standard that equipment be maintained, tested, and inspected. JCAHO guidelines do not specify the required frequency of these actions. Our sample of contracts specify varying levels of vendor requirements in this area:

- Eight contracts required vendors to perform servicing and maintenance of home oxygen equipment at least monthly
- Two contracts required servicing and maintenance to be performed every 60 days
- Two contracts called for equipment checks and maintenance as needed or as mutually accepted by VA and the veteran
- One contract stipulated that maintenance be performed quarterly
- One contract stated that maintenance should be performed according to manufacturer specifications; that a home visit must be conducted once a quarter; and that a phone call must be made monthly
- One contract included only a general statement that the contractor must maintain and repair all equipment, with no stipulation as to frequency of checks or maintenance activities

It is also a JCAHO standard that providers of home oxygen equipment have a process by which to document the manufacturer, model, and serial number of oxygen equipment. All 16 contracts reviewed required the vendor to maintain inventory control over the home oxygen equipment provided to patients. Only a few contracts specified that inventory control include documentation of manufacturer, model, and serial number of the home oxygen equipment. Several of these contracts specified the inventory documentation to be provided either quarterly, monthly, or ongoing. One contract did not include this vendor requirement to provide equipment documentation.

There was some variation in how contractors are required to provide the inventory information to the VAMCs. Some contractors require this information to be part of the monthly report; some require it to be part of the invoice; several required a specific inventory report; and one required that the information be included in the home care record.

Without specifically stipulating that inventory control and management include identification and documentation of equipment manufacturer, model, and serial number, the contractor cannot be held to strict compliance, and there is risk that this JCAHO requirement may not be met by the vendor.

There are significant variations in the types of emergency services that vendors are required to provide; however, each contract does require the vendor to provide 24-hour emergency service

The three main components of JCAHO-required emergency services are: provision of 24-hour emergency service; delivery and provision of emergency equipment and/or maintenance; and the provision of a backup system in the event that equipment malfunction may threaten the patient's life.

24-hour Emergency Service and Delivery of Emergency Equipment

Each contract reviewed required the vendor to provide 24-hour emergency service to the patient. Contracts varied greatly in the timeframes required for vendor response. Specifically, with regards to emergency equipment delivery or maintenance, the 16 contracts required vendor responsiveness timeframes that ranged from within one hour of notification to within the same working day. However, there was some disparity in the specificity of the contract language related to these requirements:

- Four contracts required vendor response within one hour, though two of these responses stipulated that the vendor must only respond by phone within one hour
- Four contracts required the vendor to respond within two hours
- Four contracts required the vendor to respond within four hours
- One contract required action within 24 hours
- One contract called for an "immediate response" without providing a timeframe
- One contract stated that vendors must respond "when necessary" without providing any definition of this term
- One contract did not provide any specifics as to timeframe

Provision of Back-up Equipment

The provision of back-up equipment is necessary in the event that an equipment malfunction may threaten the patient's life. This requirement is particularly important for areas in which the patient is not geographically close to a contractor site. Most contracts reviewed require that vendors provide a back-up system; however, variations exist in the timeliness of providing this equipment.

Thirteen contracts included language requiring the contractor to provide back-up equipment in the event of an emergency. Three contracts did not include this requirement at all. Of the 13 that did, there was variation in the way in which vendors were required to provide this equipment:

- ***Leading practice: Atlanta's and Iowa City's contracts required that back-up equipment be provided with all home oxygen set-ups, at no additional cost.***
- One contract specifically required that the vendor provide back-up equipment immediately if the patient's health was in jeopardy, but did not provide a timeframe for "immediately."
- One contract specified that back-up equipment must be provided within four hours of notification.
- One contract specifically noted that back-up equipment is not generally provided to patients unless VA determines that it is necessary. In these situations, the contract stipulates that the vendor must obtain special authorization from VA before back-up equipment is provided to the patient.

Emergency Preparedness Plan

Although a formal emergency preparedness plan is not a JCAHO requirement, it formalizes what the vendor will provide in the event of an emergency and may include specifics related to other JCAHO requirements, such as delivery of emergency equipment, 24-hour emergency service and provision of back-up equipment. Thirteen out of 16 contracts required the vendor to have an emergency preparedness plan. One contract specifically required the vendor to include the plan as part of the written instructions provided to the patient and stipulated that this plan must be shared with the patient and family at the time of initial set-up of home oxygen equipment. Three contracts did not require the vendor to have an emergency preparedness plan.

There did not appear to be any correlation between contracts that did not require an emergency preparedness plan and contracts that did not require one of the three requirements for emergency service. One contract, however, did not require an emergency preparedness plan nor specify provision of emergency back-up service of its vendor.

Contractual requirements for initial delivery and set-up of oxygen vary greatly among the 16 contracts reviewed

JCAHO requires that home oxygen providers plan for effective delivery and set-up of equipment. Standard timeframes for delivery are not specified. VAMCs require vendors to deliver and set up equipment for patients from within four hours of patient’s arrival home to within 48 hours of receipt of order for oxygen, with tremendous variation in between. One contract based the timeframe for delivery on how far the patient lives from the vendor site. Contracts that also require the vendor to provide clinical care added stipulations regarding when the patient must be seen by a certified respiratory therapist. The most common requirement for delivery time is delivery within 24 hours of notification/receipt of order. Seven contracts hold vendors accountable to this timeframe. The breakdown of the different requirements is illustrated in Figure 5.

Figure 5. Variations in Delivery and Set-up Timeframes

CONTRACT-STIPULATED TIMEFRAME FOR DELIVERY AND SET-UP	NUMBER OF RESPONSES
Delivery time not specified, but vendor must call patient within two hours of order and make delivery appointment	1
Within four hours of patient’s arrival home	1
Within six hours of notification; certified therapist must follow up within 72 hours	2
Within eight hours of notification	1
Within eight hours if patient lives less than 250 miles away from vendor, or within 24 hours if patient lives greater than 250 miles away	1
Delivery must be made on day of discharge	1
Delivery must occur on same business day if order received within three hours of vendor close of business; otherwise, by noon the following day	1
Within 24 hours of receipt of order (one contract required visit by RT within 3-5 working days)	7
Within 48 hours of receipt of order	1

Most of the contracts reviewed required the provision of equipment and oxygen only

Within our contract review sample of 16 contracts, nine contracts reviewed required the provision of equipment and oxygen only. Two of these contracts, however, required the vendor to perform pulse oximetry checks, if ordered. Seven contracts required vendor provision of clinical services, such as patient assessments and clinical care management. Contracts that included the provision of clinical services were reviewed for patient care requirements. These requirements are described below.

Patient's Right to Advance Directives

Only four contracts required the vendor to have a "Do Not Resuscitate" (DNR) policy. Twelve contracts did not specifically require the vendor to have a policy on advanced directives. A policy on advance directives is especially pertinent in the home oxygen patient population. Home oxygen patients include long-term oxygen patients who require oxygen for palliative reasons, as well as patients who are dependent on ventilators. Suppliers of home oxygen services are required by JCAHO to have a policy on advanced directives.

Patient Care Plans

All contracts that require clinical service included references to documentation of a plan of care. The level of detail in the contract language varied greatly, and the requirements for submission of such documentation also varied between the seven contracts.

The contract from Chillicothe, OH, provided the most detailed requirement for a plan of care and reads as follows: "An individual plan of care is required for each patient serviced under the contract. Initial plan must be provided within five workdays after set-up of equipment and must include, at a minimum: patients' problems and needs, patients' goals, specific care, and services to be provided. Plans must be evaluated and updated every six months or more often, as necessary, with copies to COTR within three workdays."

When specified, care plans are required to be updated every six months, according to the two contracts that specified a timeframe for update.

Seven of the nine contracts that do not include clinical services required the vendor to develop care plans for the provision of the equipment and oxygen or *service* plans. One of these contracts did not specify any such requirement, and one contract stipulated that the plan would be completed by the VA Home Respiratory team.

Patient Assessments/Documentation of Care or Service

Of the seven contracts that include the provision of clinical services, six required vendor documentation of the assessment. One contract required periodic assessments but did not specify that documentation is required. All but one contract that does not include clinical care specified that vendors must provide non-clinical assessments and documentation of care, such as patient's response to oxygen services and oxygen usage.

Home Oxygen Contracts

Of the seven contracts addressing clinical care, only five contracts specified requirements related to the reassessment of patients. Of these five, the time period for reassessment varied with each contract. Contracts required vendors to clinically reassess the patient once a month, every three months, every six months, as needed, or as directed by COTR.

Most contracts required monthly submission of reports and covered documentation of patient status, equipment maintenance, safety checks, and oxygen usage. Two contracts required quarterly reports, and two contracts did not specify a timeframe for submission of patient documentation.

CONTRACTUAL VARIANCES IN MONITORING AND MANAGEMENT

VA Medical Centers and VISNs use varying methods to monitor and manage their home oxygen contracts

During site visits and telephone interviews, staff described several methods for the management and monitoring of contracts. VHA policies and guidelines delineate the types and frequencies of monitoring activities required to monitor and evaluate the Home Oxygen Program.

VHA Documents

The Home Use of Supplemental Oxygen: A Source Book (September 1998), the *VHA Handbook 1173.13 — Home Respiratory Care Program* (Nov., 2000), and the *VHA Directive 2001-057 — Home Respiratory Care Program* (September 2001), describe various indicators to measure and monitor the quality of the provision of home oxygen services.

The *Source Book* focuses on JCAHO standards, interdisciplinary meetings, PSAS-based quality management, and quality management of the home oxygen program. The *Source Book* prescribes several procedures to address contract management and monitoring. These procedures are described below:

- Quarterly site visits to vendor to review equipment management, inventory control, and record review,
- Home visits to review patient education, posting of “no smoking” signs, patient satisfaction with vendor, equipment checks, and veteran’s knowledge of prescription, and
- Patient surveys during clinic visits

The new *VHA Directive* specifies that a minimum of 15 home visits of the patients on home respiratory care be scheduled each year. The directive states that a multidisciplinary team of clinicians and PSAS representatives may conduct these visits. The *VHA Handbook* and *Directive* also specifies compliance to JCAHO standards, requiring documentation by the home oxygen contractor on a quarterly basis.

The guidelines established in the VHA documents became the basis for findings collected from site visits, interviews, and contract reviews. In the following sections, findings are organized by monitoring practices.

Booz Allen conducted telephone interviews with representatives from each VISN to evaluate their processes for monitoring contracts and vendors

We interviewed respondents from 45 different facilities, including one interviewee who responded on behalf of eight facilities within that particular VISN (VISN 3), bringing the total number of medical centers reviewed to 52. However, because all interviewees did not respond to all questions, the denominator varies accordingly to reflect the actual number of responses obtained for each specific question.

Overall Contract and Vendor Monitoring

The responsibility for contract management and monitoring varies among VAMCs. When asked who is responsible for monitoring the contract, interviewed staff gave the following responses.

POSITION	NUMBER RESPONSES (PCT)
	N = 45
Team Effort (PSAS, COTR, Respiratory Therapist, Home Oxygen Coordinator)	17 (38%)
COTR	9 (20%)
PSAS Chief	6 (13%)
PSAS Purchasing Clerk	3 (7%)
Contracting	2 (4%)
Respiratory Therapist	2 (4%)
PSAS Representative	2 (4%)
Patient Administration Services Chief	1 (2%)
Home Oxygen Coordinator	1 (2%)
Network CO	1 (2%)
VISN Prosthetic Representative	1 (2%)

Interviewees were asked whether or not there was a dedicated home oxygen coordinator and at what position. Of 49 responses, 11 (22%) reported they had no coordinator. Those 38 (78%) who had a coordinator identified the following positions.

POSITION TITLE	NUMBER OF STAFF
COTR	4
Respiratory Therapist	21
Licensed Practical Nurse	1
Program Manager	2
PSAS Purchasing Agent	7
Nurse Practitioner	1

Some sites reported the people in the position of coordinator were administrative staff, and other sites reported that clinicians filled the position of home oxygen coordinator. From the information obtained

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during telephone interviews, there does not seem to be a consistent category of staff who fills the home oxygen coordinator position.

Leading practice: VISN 3—New York has a PSAS-designated home oxygen coordinator who is a respiratory therapist. This position is unique in that it combines clinical and administrative responsibility. VISN representatives report during site visits that this position allows for greater coordination of patients' clinical and administrative needs. This VISN functions as an integrated health system, and a VISN-level coordinator works very well in monitoring the vendor as well as managing patient needs.

Leading practice: Iowa City, IA, has created a position within PSAS that is currently filled by a respiratory therapist. This clinician handles both clinical and administrative duties, providing reportedly seamless patient care and service.

Another aspect of monitoring is managing poor or non-compliant vendor performance. We reviewed contracts containing language that addressed unsatisfactory vendor performance, detailing actions the VA may take. When staff were asked whether their contract had such stipulations, they responded

- Yes — 44 (90%),
- No — 2 (One interviewee stated that such language should be included in the contract. The other stated such language will be in the new contract.), and
- Unsure — 3.

Examples of stipulations identified by staff included:

- Written notification sent to vendor regarding non-compliance issue,
- The issue is incorporated into both the vendor's and VA's QI monitors,
- Payment is withheld until issue is resolved,
- Discussed at meetings with vendor; resolution developed,
- Termination for default and termination for convenience clauses in the contract, and
- Obtain services from another vendor, and bill the original vendor.

The majority of interviewed staff reported their contracts with home oxygen vendors do include stipulations for poor vendor performance, and the stipulations have been used as indicated in the above examples.

QUALITY MANAGEMENT EFFORTS

Quality Management/Performance Improvement (QM/PI) activities are implemented at most VAMCs with varying methods

The majority (44) of interviewees reported having a quality management (QM) or performance improvement (PI) plan in place. One site reported not having a plan in place because it does not perceive any problems with the Home Oxygen Program. One site was not sure if a QM/PI plan has been implemented. Another site reported that it is developing a QM/PI plan. Of three sites reporting no formal plan, two stated that they are reviewing plans of care and patient concerns and are trying to establish an interdisciplinary committee for home oxygen; the third site stated that their hospital quality department has assigned a QA staff person to Home Oxygen. One site does not have a plan in place.

Interviewees were also asked if meetings were held with their vendors to discuss quality management/performance improvement activities and issues. Forty-two (42) sites do hold these meetings either quarterly or monthly. Other responses listed below are from individual sites, except where noted:

- Meetings are held only if there is a problem (2 sites),
- Trying to incorporate meetings with vendor this year,
- Used to meet but things are going so well, they now do teleconferences,
- No routine meetings,
- Have had one meeting with the vendor per contracting's request, and it was related to a billing issue, and
- Have conference call with all the VISN representatives and the vendor monthly (2 sites).

The majority of Home Oxygen Programs is monitored and managed using the QM process. Those sites who do not have formal, documented quality plans and measures in place to assess the quality of services provided by the vendor will not be in compliance with the VHA Directive, JCAHO standards, and the VHA Handbook.

Leading practice: Richmond VAMC has developed a formal quality management plan tailored for home oxygen. This plan includes instructions for collecting patient satisfaction data, inspecting vendor sites and vehicles, reviewing patient prescriptions, checklists for visits to patient homes, and incident reporting.

VA staff reported several consistent types of monitoring activities used across the country but with variations in frequency

Staff consistently reported a variety of monitoring activities as part of the Home Oxygen Program and formal quality plans. The methods used to monitor vendor performance are: visits to the vendor site and the patient home by VA staff; patient satisfaction surveys; complaint resolution and incident reporting processes; and reviews of vendor documentation. These methods are detailed below. A summary of Type I recommendations is also included as a point of reference for future JCAHO survey preparations.

Vendor Site Visits

The majority of medical centers contacted report conducting site visits to contractor sites. Forty-seven (47) respondents reported they conduct vendor site inspections. One site responded that no vendor site visits were conducted, and two sites were uncertain. However, the frequency and content of site visits varied among VAMCs. Interviewed staff that reported conducting vendor site visits reported the following frequencies of visits:

- Only at the beginning of the contract (one site),
- Monthly (five sites),
- Quarterly (fifteen sites),
- Semi-annually (sixteen sites), and
- Annually (five sites).

Figure 6 below shows responses (yes or no) to whether delivery vehicles and vendor licenses are inspected.

Figure 6. Inspection of Delivery Vehicles and Vendor Licensure

INSPECTED AREA	YES	NO	UNSURE
Delivery trucks, vans	39 (78%)	10 (20%)	1 (2%)
Vendor licenses — driving/clinical	49 (96%)	0	2 (4%)

The frequency of licensure checks and the locations of license copies varied among VAMCs, according to staff responses:

- Two sites checked licenses quarterly,
- Nine sites checked licenses semi-annually,
- Three sites checked annually,
- Fourteen sites checked at the beginning of the contract,
- Twelve sites reported keeping copies of the licenses at the VAMC, and
- Seven sites reported the vendor kept copies of the licenses.

Leading practice: Durham (VISN 6) inspects vendor trucks during visits to patient homes. Because the vendor is present at the patient’s home during the time of the VA visit, not only is the truck inspected but also the interaction between vendor staff and patient is observed.

Leading practice: LA (VISN 22) checks licenses of vendors during home visit inspections and also observes vendor-patient interaction.

Leading practice: Martinsburg, WV, developed warehouse inspection checklists and delivery vehicle inspection checklists to facilitate thorough reviews during vendor site visits.

Examples of vendor site visit and vehicle inspection sheets are provided in Appendix C.

Home Visits by VA Staff

With the exception of two sites, interviewees reported that site visits were being made to patient homes. Sites reported the frequency of visits generally as a fixed number per month or per quarter. The most commonly reported frequencies were 10 and 15 visits per month or per quarter. Some sites reported visits on a percentage basis of home oxygen patients per month, per quarter, or per year, consistently quoting a 10% target for their selected reporting period.

Responses indicated that the RT was the staff person most frequently conducting the home visits, followed by PSAS representatives, chief, COTR, home oxygen coordinator, nursing staff, social worker, and biomedical technician.

One site not making home visits stated the VA staff will soon begin to make visits. Prior to this, the home health agency nurses were making the visits to the home oxygen patients. The other site is not sure if home visits are being made. A few VISNs/sites that are in large geographic catchment areas reported difficulties in meeting the previous requirement to conduct site visits to 10% of the facility's home oxygen patients.

Leading practice: Bath, NY, brings a social worker annually to visit patients who need assistance with case management issues, as well as a biomedical technician to evaluate the accuracy of the tank regulators, to adjust other types of equipment, and to evaluate the vendor's performance.

Leading practice: Martinsburg, WV, has developed a review form to be utilized when observing the vendor's initial home oxygen set-up.

Patient Satisfaction Surveys

Staff reported two methods of monitoring patient satisfaction with vendor performance – telephone surveys and written surveys. The BAH team questioned whether patients were asked about their satisfaction with vendor performance during clinic visits, but many of the interviewees did not know. Seven sites were able to confirm that this did occur.

Forty-nine (49) sites utilize patient satisfaction surveys as a measure of vendor performance. Four sites did not measure patient satisfaction, one of which is currently developing a survey. One site sent out e-mails of patient complaints to the appropriate staff for follow-up; at this site, the physician speaks annually to home oxygen patients to solicit their comments. One site was unsure if surveys were done.

The frequency of the surveys varied and were done either at beginning of contract, monthly, quarterly, semi-annually, or annually. Eighteen sites used written surveys, and 17 used telephonic surveys. Eighteen VAMCs sent out surveys, and 13 vendors sent out their own surveys and shared results with the VA facilities.

Complaint Resolution Process

Fifty sites stated they have a complaint resolution process in place. The general process described involves PSAS, the VAMC patient representative, and/or the vendor receiving a patient complaint. The patient is called by the VA or the vendor in order to resolve the issue.

Clinical complaints are usually handled by the respiratory therapist. Other staff such as the COTR, home oxygen coordinator, PSAS chief, and/or patient advocate may also follow up with the patient and act as a facilitator between the vendor and the patient. The majority of sites reported using a tracking system such as a log to track the complaint resolution process. The majority of sites discussed complaints at quality meetings with the vendor. Some sites resolved the issue and placed documentation in the patient's file but did not keep a log.

Two sites reported no logs or other method for tracking complaints. One site reported that no log was kept because all complaints addressed the same issue, namely that the vendor was not delivering enough oxygen tanks. The interviewee stated that each complaint was investigated and resolved by the delivery of additional oxygen tanks if clinically warranted. Another site reported home oxygen patients are told to call Pulmonary, not PSAS, with complaints.

Leading practice: The PSAS staff at Martinsburg, WV, collect information related to all home oxygen patient complaints and the source of complaint quarterly. This information is used to evaluate trends in patient complaints as well as to monitor vendor performance. The information is submitted to the Medical Center's Quality Council.

Incident Reporting Process

The complaint resolution process described above is also the process used for incident reporting. Staff involved in this process include respiratory therapist, PSAS, quality management, risk management, and patient representatives. A log is kept and incidents are discussed at quarterly meetings with the vendor and at home oxygen committee meetings, if the site has such a committee. Forty-four (44) sites interviewed have a process in place; two sites do not.

Reviews of Vendor Documentation Requirements

With the exception of one site, all sites interviewed reported that vendor documentation is reviewed on a regular basis. The types of reports received from vendors and the frequency of the reviews varied among VAMCs.

- Forty sites reviews patient encounter forms, technical reports, vendor assessment forms, and/or equipment inventory on a monthly basis.
- Seven sites review QA reports, infection control reports, patient satisfaction survey results, and/or patient complaints on a monthly basis. 22 other sites review these reports on a quarterly basis.
- Four sites review vendor training documents on a monthly basis.
- One site receives and reviews patient non-compliance reports on a daily basis.
- One site reviews QA and patient education documents annually.
- One site reviews only initial patient set-up information.

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- One site reviews the names of patients who would need immediate response during a disaster, compiling a roster that is updated and reviewed every two weeks.

The one site that does not routinely review vendor documentation reported that, when they did perform reviews, vendor documentation addressing equipment maintenance forms and delivery tickets was included.

Leading practice: VISN 2 requires the vendor to dictate notes directly into a VA database instead of submitting hard copies. This report is part of the patient's electronic medical record. Because this is a VISN-wide contract with the vendor, each local VAMC can access the vendor's notes on a read-only basis.

JCAHO Accreditation – Type 1 Recommendations

Interviewees were asked whether their sites had received Type 1 Recommendations for their home oxygen programs. JCAHO issues “Type 1 Recommendations” to organizations that cannot demonstrate substantial compliance with specific standards. Specifically, a Type 1 Recommendation is:

. . . an accreditation decision awarded to a health care organization that demonstrates satisfactory compliance with applicable Joint Commission standards in most performance areas, but has deficiencies in one or more performance areas or accreditation policy requirements that require resolution within a specified time period.

*-- Joint Commission on Accreditation of Health Care Organizations,
2001-2002 Comprehensive Accreditation Manual for Home Care*

Thirty-three (33) sites interviewed reported they have not received a Type 1 Recommendation for their home oxygen programs. Two sites were unsure, and eight sites reported having received a Type 1 Recommendation in the past. These Type 1 issues, as defined by interviewees, are listed below and have reportedly all been resolved:

- Vendor was not logging out cylinders by lot numbers,
- A patient did not have a regulator on the back-up tank in his home,
- Vendor made errors in documentation with clinical assessment,
- Vendor defaulted,
- Performance Improvement plan – the raw data was not graphed,
- Issues with equipment, planning care, and treatment, and
- Issue with pulse oximeter in patient's home.

HOME OXYGEN COSTS

The BAH team reviewed national cost information to determine VA costs for home oxygen services

The VA spends an estimated \$78M annually on contracted home oxygen services, based on fiscal year 2001 data. Spread across 47,501 unique patients for the same period, this represents a rough average cost per patient of \$1,640 per year. Figure 7 presents a high-level breakdown of total FY2001 costs to contract required services for the home oxygen program. A discussion of data and data source limitations is included in the following sub-section.

Figure 7. FY2001 Home Oxygen Contractor Cost Summary
(Equipment, Oxygen and Services)

NPPD Category Number	Category Description	FY 2001 Cost
Oxygen and Respiratory:		
800A	Oxygen Equipment	\$11,092,054
800B	Oxygen Concentrators	\$ 2,019,270
800D	Oxygen, Supplies	\$5,517,860
800F	Ventilator, A/O	\$334,865
SUBTOTAL:		\$ 18,964,049
Repairs — Oxygen and Respiratory:		
R91 A-G	Total New (Includes repair of all equipment, service visits, compressed/liquid O2, liquid del. sys.)	\$58,949,957
TOTAL:		\$77,914,006

Source(s): NPPD categories listing (3/29/01), PSAS NPPD report: National New Totals FY 2001 1st-2nd-3rd-4th QTR (10/26/01).

The BAH team also developed average cost per patient information based on findings from interviews with VA staff

The table on the next page shows the calculation of average cost per year, per patient for contracted home oxygen services, based on total unique patients reported in NPPD. While this study identified an average overall home oxygen annual cost of \$1,640, VA should conduct a study that would consider internal/operational costs as well as contractor costs.

Home Oxygen Contracts

In addition to formal PSAS-wide reports, a sampling of data from facilities interviewed showed the following reported ranges of average patient cost.

Facility Interviewed	Reported Total FY 2001 Cost	Reported Home Oxygen Patients	Reported Number of Continuous Positive Airway Pressure (CPAP) and Bilevel Positive Airway Pressure (BIPAP) Patients*	Facility Average Cost/Patient/Year
Puget Sound, WA	\$1,239,443	382	Not part of contract	\$3,245
Honolulu, HI	\$18,000/month	79	Not known	\$2,734
NY Harbor Health / VISN 3	\$2,353,100	1,000	Not part of contract	\$2,353
Birmingham, AL	\$984,000	465	Not part of contract	\$2,116
Boise, ID	\$960,000	482	Not known	\$1,992
Fort Harrison, MT	\$2,400,000	1,350	Not known	\$1,778
St Louis, MO	\$768,000	445	Not part of contract	\$1,726
Cleveland, OH	\$600,000 (avg.)	350	Not known	\$1,714
Miami, FL	\$202,645	125	Not part of contract	\$1,621
Walla Walla, WA	\$350,000	227	Not part of contract	\$1,542
Muskogee, OK	\$600,000	280	120 combined	\$1,500
Perry Point, MD	\$90,000/month	480	240	\$1,500
Gainesville, OH	\$1,227,315	820	Not part of contract	\$1,497
Loma Linda, CA	\$294,841	197	Not part of contract	\$1,497
Black Hills, SD	\$790,383 (includes Hot Springs & Fort Mead)	420	110 combined	\$1,491
Louisville, KY	\$544,207	370	299 CPAP, 80 BIPAP	\$1,471
Richmond, VA	\$451,850	316	Not part of contract	\$1,430
White River Junction, VT	\$360,000	204	50+ CPAP, 2 BIPAP	\$1,406
San Antonio, TX	\$400,000	286	Not part of contract	\$1,399
Martinsburg, WV	\$356,000	255	Not part of contract	\$1,396
Biloxi, MS	\$521,686	374	Not part of contract	\$1,395
Albuquerque, NM / VISN 18	\$1,100,000	950 (NM only)	Not part of contract	\$1,158
Iowa City, IA	\$580,134	503 (for FY01)	Not part of contract	\$1,153
Durham, NC	\$24,000/month (avg.)	250	Not part of contract	\$1,152
Kansas City, MO / VISN 15	\$538,612 \$2,566,922	480, 2,600	Not part of contract	\$1,122, \$987
San Francisco, CA	\$244,947	240	Not part of contract	\$1,021

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Facility Interviewed	Reported Total FY 2001 Cost	Reported Home Oxygen Patients	Reported Number of Continuous Positive Airway Pressure (CPAP) and Bilevel Positive Airway Pressure (BIPAP) Patients*	Facility Average Cost/Patient/Year
Memphis, TN	\$35,000/month	250	275 CPAP, 3 BIPAP	\$795
Amarillo, TX	\$800,000	750	274 combined	\$781
Charleston, SC	\$50,000/month	230	500 CPAP, 60 BIPAP	\$759
Shreveport, LA	\$653,000	375 (avg.)	650 combined (avg.)	\$637
Philadelphia, PA	\$92,500	150	Approx. 20	\$544
Bath, NY	\$1,000,000	1,947	Included in total at left, est. 25% CPAP/BIPAP	\$514
Fargo, ND	\$237,863 (equip only)	215	309 combined	\$454 (equip only)
West Los Angeles, CA	\$544,207	1,000	299 CPAP, 80 BIPAP	\$395
Anchorage, AK	\$216,000	82	Est. 475	\$388
Manchester, NH	\$95,000	130	124 CPAP, 21 BIPAP	\$345
Detroit, MI	\$397,000	1,300	Not part of contract	\$305
Battle Creek, MI	\$3,593,974	See VISN level	Not known	Not available
Atlanta, GA	Response not provided	Response not provided	Response not provided	Not available
Buffalo/Syracuse, NY	\$1,000,000-\$1,200,000	Response not provided	Response not provided	Not available
Madison, WI	Response not provided	375	Included in total at left	Not available
Omaha, NE	Not known	499	Not part of contract	Not available
Leavenworth, KS	Not known	1,428	Not part of contract	Not available
Hines, IL	Not known	490	Not part of contract	Not available
Chillicothe, OH	Not known	90	Not part of contract	Not available
VISN 1	Response not provided	1,400 VISN	Not known	Not available

* Contracts that include the provision of CPAP and BIPAP equipment and care of these patients will impact the contract cost.

The range of calculated average patient cost per year, based on interview data collection, was \$305-\$3,245 (excluding equipment only cost not comparable to others). The mean average cost per patient for this sample is \$1,775; the median is \$1,395; and the average of the sum of all costs for this sample of contracts is \$1,282. When compared with the average cost per patient per year for the entire home oxygen program (\$1,640), the sample average is about 20% less than the national average and the cost variance by facility ranges from \$1,605 over (almost twice the overall average) to \$1,335 under (18.5% of the overall average). Based on data collected, variances may be attributable to geographical/economic variances, types of patients treated, and even quality of data available. Ranges of variance from the home oxygen average are shown in the following table.

Figure 8. Range of Variance between Facility Reported Average Patient Cost and Overall Average Cost

PERCENT VARIANCE FROM OVERALL AVERAGE COST	APPROXIMATE RANGE OF POSSIBLE AVERAGE COST	NUMBER OF FACILITIES WITHIN PERCENT VARIANCE RANGE*
<10% Under	\$1,476-\$1,640	7
10-25% Under	\$1,230-\$1,476	6
50% Under	\$820-\$1,230	6
>50% Under	<\$820	11
<10% Over	\$1,640-\$1,804	3
10-25% Over	\$1,804-\$2,050	1
25-50% Over	\$2,050-\$2,460	2
>50% Over	>2,460	2
Unknown		9

* Data points included results of 45 facility interviews, with one providing both facility and VISN numbers, and one containing the written data required for this analysis.

It should be noted that none of the tables above reflect the full cost of providing home oxygen services, even contracted services, due to the absence of any measurable cost for VA direct labor, other direct costs, and overhead. While the above figures illustrate the necessary annual outlays to home oxygen vendors, these total costs cannot alone be considered when assessing VA contracting practices. To assess financial impact of home oxygen contracting more fully, it would be necessary for PSAS also to begin collecting and analyzing internal VA operational costs associated with this contracting function, from RFP development through monitoring and close-out of a given contract. Obtaining both of these data sets is important for identifying potential financial efficiencies to be gained through improvements to the current home oxygen contracting practices and program management.

Financial contract efficiencies can be gained by pursuing two primary ends:

- 1) Obtain better prices for home oxygen services contracted out by VA, and/or
- 2) Eliminate unnecessary burden and associated costs of VA contract administration.

A review of the sample contracts and contracting practices provides insight into the potential efficiencies to be gained in contract prices themselves (method #1). Financial efficiency or impact on VA may be affected by such factors as:

- General acquisition strategy (type of contract vehicle, pricing structure, use of option years, etc.),
- Level of competition in the available market for a given patient service area,
- Strength of pricing negotiation skills of VA personnel (affected by experience, specialization, or knowledge of services and market), and
- Potential volume discounts of pricing through expanded coverage or service area.

These factors are generally within the control of the VA, aside from market competition that has both controllable and non-controllable attributes. For instance, letting a restricted contract necessarily reduces competition and can be selected or not as part of acquisition planning and strategy. However, limitations on available vendors due to geographic or other challenges may not be a factor subject to VA's control.

Home Oxygen Contracts

In addition to those items listed above, there are economic factors that also remain entirely outside VA's control (inflation, industry advancement with equipment, or supply pricing impact, etc.), although the use of option years allows VA the choice of re-negotiating versus exercising an option against negotiated pricing schedules.

The application of method #2 (eliminating internal VA contract administration burden and associated costs) is impossible to quantify based on the interview and contract review results. However, some general guidelines can be followed. Recommendations in this arena are located in the "Recommendations" section of the report, under the subheading "Home Oxygen Costs."

Limitations of Data and Data Sources

- The average cost per patient per year is a high-level estimate only. Estimated variances among per-patient cost, based on differing health status or medical diagnosis, could not be determined without detailed information on the patient population.
- Because of the lack of a secondary source of cost data, it was not feasible to perform even a high-level validation of the data. However, it is assumed that PSAS' NPPD is a relatively reliable source of information for the purposes of this study, as it was developed and is actively managed and used by PSAS management in monitoring various aspects of the service.
- The initial cost data request included fiscal years 1998 through 2001. However, costs have risen rapidly over that period with a particularly significant spike between FY 2000 and FY 2001. Based on this trend, in conjunction with continuing anticipated increases in patients served, it was decided that the most recent data (FY 2001) would provide a more accurate estimate of the total cost of home oxygen contracting for VA than would an average of cost over the past four years. While this was the recommended approach, it should be noted that a single data point and the significant trend of increasing cost could result in a slight to moderate under-reporting of cost when looking toward future fiscal years.

A comparison of the pricing structure of home oxygen contracts revealed a similar approach, but with varying methods of application

Of the 16 sample contracts reviewed, all but two followed the same general pricing structure. The VA provided the contractor with an established structure of units, price per unit, and total price to submit as part of the proposal process. In each case the VA defines the unit and its components (if more than one). "Unit costs" may be inclusive of all costs associated with a broad service provided, or be segregated out into separate sub-components. For instance, in one contract, an *oxygen concentrator rental* may be defined as the cost of equipment rental fee alone, per month, with a separate *delivery* unit defined to capture delivery and set-up cost. In another instance, a unit titled *oxygen concentrator rental* may be defined to be inclusive of rental fees, delivery, and set-up, as well as all initial supplies and accessories. Regardless, the contractor is simply to complete the pricing schedule, compute total cost per contract year, and return as a bid estimate or fixed price bid.

Variances in the general approach to pricing also include the extent to which VA provides its own estimates in the pricing schedule. For instance, one contract may provide the number of patients per facility as one factor for vendors to utilize in computing total price. Another may define an estimated number of units for each unit description, requesting only unit cost and total price from the vendor. Any of these methods and variances (described above) is generally acceptable as an option for obtaining

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necessary pricing information; each would allow the facility to control what it determines to be the most significant cost drivers and to manage cost at a discrete unit level. The burden associated with this approach is dependent upon the manner in which the cost data is requested and tracked throughout the contract term.

Item costs requested among the various contracts included: per visit, per labor hour (e.g., for servicing, maintenance, or repair of equipment), per pound of oxygen, per job, per equipment rental, per equipment/supply purchase, per trip, per relocation of patient, per routine delivery, per emergency delivery or delivery outside normal delivery area. Where unit costs were inclusive of multiple cost components or sub-items, they were frequently organized according to rental, purchase, or VA-owned, and according to major type of equipment (concentrator, ventilator, etc.).

Item definitions varied in level of detail. In some cases, it was very difficult to ascertain the full scope of items and services required within a given item order/cost without referencing back to other sections of the proposal. In other cases, pricing and definition of items were well organized and could be clearly understood. These cases should generally provide for better alignment of stated VA requirements and expectations, as well as contractor performance and service.

Although, as noted above, this general item cost/pricing schedule approach was used in most of the contracts reviewed, two contracts contained minor but noteworthy variations on this general approach. The Boise, ID, home oxygen contract organized its pricing schedule according to a service line to be provided by the contractor. Service lines defined as items, for which cost was to be provided by the vendor, include:

- Monthly rental,
- Equipment return,
- Repair (hourly rate),
- Equipment set-up (CPAP, BIPAP, and Nebulizer are separate items),
- Equipment purchase (CPAP, BIPAP, and Nebulizer are separate items),
- Ventilator systems rental, and
- Set-up of VA-owned ventilators.

Each of these categories includes a description of who is to perform it, how it is to be performed, and what components are to be included in the total item cost and service to be performed. Several things are worth noting with regard to the Boise, ID, approach. First, the items defined generally represent actual types of *service units* (i.e., not merely equipment and labor hour items or units). This is critical for later matching cost to detailed SOW requirements, performance expectations, and eventually to patient outcomes. The listing of potential items is complete and presented in an orderly manner; it is written in a way that is easy to understand and respond to; and it does not request an overly burdensome effort to complete the pricing schedule format for VA. It results in a tool that is both easy to understand and to apply to contract management.

The second noteworthy adaptation of the general item cost/pricing structure approach is found in the VISN 3 contract. The VISN 3 contract organizes item costs into five major groups: oxygen concentrator and accessories, liquid oxygen systems and accessories, compressed oxygen systems and accessories, oxygen cylinders and systems, and positive airway pressure systems. Within each defined group, the

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contract includes every possible line-item cost associated with the defined services. For example, group one, the oxygen concentrator and accessories group, includes separate unit prices for oxygen concentrator units (both for buy and rental options), each type of acceptable cylinder, each possible accessory, the initial set-up fee, and a Helios System. The contractor must provide a fixed price per item for each of these sub-components. Using this approach, the VISN and its facilities can then order from the contractor any number of variable sets of potential services and items within a given group. This approach combines the cost control aspects of fixed price, with the flexibility of variable ordering. For major items, VISN 3 provides estimated quantity of units, whereas for smaller supply or accessory items, only unit prices are obtained. Then, the contract establishes a guaranteed range of total award amount by establishing minimum and maximum amounts per year.

With regard to pricing, several other minor items are worth mentioning. The review of the sample contracts identified the use of discounts (in the contract issued by Detroit, MI, for VISN 11) and the option of trade-in or percent discounts (in the contract issued by Denver, CO, for VISNs 19 and 21). Finally, the contract issued by Denver, CO, also provided a lease to purchase option for equipment, in addition to the traditional purchase or rental options. These potential financial opportunities might be considered for use with other vendors across the VA system, where available.

Conclusions

Contract Characteristics

- Most contracts covered more than one facility. However, a fairly sizable portion of the contracts remain facility-specific. No significant problems have generally been reported with increased coverage, and VA operational costs (though not quantified during this study) would be decreased by reducing contract administration burden across the VA system.
- The vast majority of separate and distinct contracts were reported as being in the general category of fixed price, which usually offers a sound method of protecting against VA financial risk (i.e., unexpected fluctuation) and limited administrative burden (i.e., cost per deliverable agreed upon at time of award). Based on the data available, a distinction was made between firm fixed price and an IDIQ vehicle with firm fixed price provisions on a per item, component, or other unit basis. Only three contracts were time- and materials-based, which typically involves a higher level of risk but may provide needed additional flexibility in particularly challenging vendor markets or where patient population and their needs are much more difficult to define.
- The most common period of performance for the contracts evaluated was a base year plus three to four option years. This general structure occurred in almost every contract, with only slight variation in number of years (i.e., in some cases less than three to four, in some cases more). Only two instances of extension of existing contracts were identified. Sound contract management practices would generally warn against the use of extensions when the original contract already includes multiple years, as it can create a laxity on both the part of the government (e.g., by not re-assessing requirements/patient needs for contracted services as would be required for issuance of a new RFP) and of the contractor (e.g., there is a loss of healthy tension generated by requiring demonstrated performance standards to win the work and by creating the competitive bid environment).
- The scope of services requested under the sample contracts reviewed generally fell into two categories: (1) those requiring equipment and oxygen only, and (2) those requiring equipment, oxygen, and related patient care services. Variances were especially noted in the manner in which the requested services and associated requirements were developed and documented in the statement of work. Some contracts provided clear, up-front statements about scope of services, as well as well-organized and clearly articulated requirements and performance standards. Other contracts lacked an introductory statement of scope altogether and/or seemed to be inconsistent from their scope introduction and pricing to their detailed statement of work. While the vendor community may have little trouble understanding the requirements, especially when they have worked with the VA community in the past, it makes comparison and assessment of variances across contracts much more difficult. Similarly, the lack of consistency makes ongoing contract monitoring across the VA system more time-consuming and challenging.

Contractual Variances in Quality Standards

- At a minimum, all VA contracts reviewed require compliance with JCAHO standards, while most contracts specify that vendors must be JCAHO-accredited. Home oxygen vendors appear to be held accountable to JCAHO standards.
- There was little consistency in the level of specificity related to vendor requirements among the various contracts reviewed. Examples of these inconsistencies in requirements are listed below.

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- All contracts reviewed require vendors to provide basic patient and family education on safety and equipment management, yet not all contracts require provision of education on infection control and prevention.
 - All contracts included language related to routine servicing and maintenance requirements, yet the specificity of this requirement varied greatly among contracts.
 - All contracts required some level of inventory management for equipment, yet not all contracts required the documentation of equipment manufacturer, model, and serial number as part of inventory management.
 - There is variability in the contract language related to how often documentation of assessments and patient care are required to be submitted to VA. Not all contracts specify that reassessments are required, and some contracts that require reassessment do not specify how often.
- The majority of contracts reviewed require the vendor to provide 24-hour emergency service and back-up equipment, as well as a formal emergency preparedness plan. There is great variation in the timeframes required for vendor response to emergencies and in the timeframes required for provision of back-up systems. JCAHO requires that home oxygen suppliers provide 24-hour emergency services and emergency back-up systems, yet it does not specify limits for response time. Such inconsistencies within VA contracts may result in disparities in the timeliness of emergency services provided to veterans across the country.
 - Contractual requirements related to initial delivery and set-up times vary greatly within the review sample. Differences in how quickly a vendor is required to supply oxygen may impact patient care as well as patient satisfaction. Dramatically discrepant delivery time requirements may potentially lead to differences in the quality of care, unless the discharging hospital provides an adequate supply of temporary oxygen to the patient.
 - Several of the contracts reviewed did not specifically require the vendor to have a policy on Advance Directives. Although many contracts required vendor compliance to JCAHO standards, the contracts did not address the requirement that contractors discuss issues such as DNR options with patients.
 - The timeframes for submission and updates of patient care plans and service plans and the specificity of the detail required varied greatly among the contracts. Such differences may lead to increased risk for VA in maintaining vendor compliance to JCAHO standards.

Contractual Variances in Monitoring/Management

- The position of home oxygen coordinator is filled by staff from various disciplines, including clinicians, administrators, or administrative staff. Based on the background of the person filling this position, the scope and responsibilities differ accordingly, resulting in variations in the role of the home oxygen coordinator in the home oxygen program.
- QM/PI activities exist but vary in the level of implementation and frequency. Compliance to VHA standards for monitoring and evaluation of the vendor and quality indicators for vendor performance are inconsistent among facilities. VHA documents provide guidelines for the expected level of monitoring and evaluation of vendor performance by VAMCs. Non-compliance with these guidelines will increase the likelihood of JCAHO requirements for corrective action and JCAHO citations for non-compliance.
- There is significant variation in the frequency of VA visits to patients' homes. The directive requires VA staff to conduct home visits to 15 home oxygen patients per year. The new

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requirement was established in September 2001. However, VHA staff do not report a consistent understanding of this new requirement.

- Satisfaction surveys varied by method and frequency. Several facilities only conducted surveys at the beginning of the home oxygen contract, which doesn't address the ability to collect information from patients regarding the services provided by the contractor over time.
- A few sites do not have a formal process in place for complaint resolution and incident reporting. Several sites have a process but no system to track complaints/incidents on an aggregate level to identify trends. The lack of a formal process by which to track patient complaints restricts the ability to monitor these complaints over time.
- Vendor documentation is reviewed but there are inconsistencies in the types of reports reviewed and the frequency of these reviews throughout the VHA. At some sites, licensure review of vendor staff occurs only at the beginning of the contract. This poses potential risk to VA, as it is the VA's responsibility to monitor vendor performance and maintain vendor compliance to JCAHO standards.

Home Oxygen Costs

- Average cost per patient per year for overall home oxygen contracted services was determined to be approximately \$1,640, based on national PSAS data sources.
- Individually reported average cost at the facility level showed a significant variance from facility to facility. Factors in cost variance may include: economic factors (uncontrollable by VHA — e.g., NYC has cost of living generally in excess of 200% greater than the average large American city); differences in type of contract and pricing structure; differences in vendor market availability (e.g., in rural sectors); and other similar factors. More detailed information on patient health status would be especially critical in understanding cost variances and their drivers.
- VHA can positively affect the performance of its home oxygen services by making changes in contracting practices and discipline. However, it also should consider assessing its internal operations and the correlation between efficiency of internal operations and cost performance (for "hidden" costs).
- Almost all of the sample contracts reviewed included a similar structure for their pricing schedules but with varying levels of clarity, organization, and detail. Pricing schedules were not always clearly linked with the SOW requirements and performance expectations. Two contracts included unique variations on the general approach to pricing, and two others included unique features such as discounts, trade-in values, or a lease-to-purchase option for major equipment pricing.

Recommendations

The majority of sites interviewed demonstrate some level of compliance with the *VHA Handbook*, *VHA Directive*, and JCAHO standards. An important caveat regarding our evaluation is that there was significant variability in respondents' positions, backgrounds, responsibilities, and knowledge about the home oxygen program. Our findings, conclusions, and recommendations are based on the information provided by respondents, however we recognize there is potential that that factor may have influenced the accuracy of some respondents' replies.

General

- ***Use a cooperative approach to develop SOWs, with experts in both home oxygen services and acquisition practices.*** In addition to the obvious impact on quality of the contract itself, cooperative development of the SOW between experts in home oxygen and acquisition can help manage and reduce risk of contract costs. Clear and comprehensive contract language is critical in ensuring that services requested and services received are well aligned. This affects more than quality of patient care or service. It also helps avoid the risks of later having to modify an existing contract to accommodate different understandings of the stated requirements - or alternately - having to obtain undefined services from other sources without benefit of existing contract management controls. Contract modification can be a costly and time-consuming endeavor for both the VA and the contractor. Cooperation also may assist in defining units to be procured, discretely enough to allow better negotiation of cost and expected delivery as the pricing schedule is developed and agreed upon.
- ***Ensure strong training and professional development of PSAS representatives.*** Acquisition management should be performed by experts in the field with the requisite skills, experience, and knowledge. To achieve this goal, a more detailed assessment of training and professional advancement of PSAS staff who are active in the development and monitoring of home oxygen contracts may be necessary. Where appropriate, specialization in home oxygen and similar contracted services or vendor markets is advisable. While varied training is already provided by OA&MM to its acquisition staff, the variation in overall structure, format, and organization of the contracts reviewed indicates a lack of standardization across other VA personnel who have a role in managing home oxygen contracted services. This in turn may translate to a lack of and need for some standardized training (new or refresher) for OA&MM personnel. This type of training would improve understanding of the appropriate selection of contract type, determination of contract structure and period of performance, use of tested methods for effectively managing financial risk and liability, and other *controllable* aspects of contracting for home oxygen services.
- ***Share information and contracting opportunities across PSAS.*** Perhaps one of the most straightforward, yet critical, findings of our contract review is the wide variation in the overall look and feel of the sample home oxygen contracts. They differ in organization, structure, level of detail, degree of clarity, and general ease of understanding. This makes evaluation across contracts much more difficult as a means of supporting PSAS service management. In addition, it indicates that there is an opportunity for improvement, through better sharing of information across the service. Each contract has clearly been written separately and appears to have been individually developed. While certain differences based on types of services requested and the nature of the vendor and patient populations may be justified, many areas simply state similar requirements in very different ways, with very different levels of clarity and comprehensiveness. Identification of strong contract "models" is one method of correcting the unnecessary disparities,

while simultaneously reducing workload associated with new SOW and contract development by each location responsible for obtaining home oxygen contracted services.

Contractual Variations in Quality Standards

- **PSAS Strategic Healthcare Group should develop a contracting template for home oxygen.** VHA's home oxygen contracts should require vendors to maintain the standards required by JCAHO. At a maximum, these standards may be detailed within the contract, to promote compliance with each standard. The PSAS Strategic Healthcare Group should develop a contracting template for home oxygen, similar to that developed for Orthotic and Prosthetic Appliances, which includes all JCAHO requirements. This template may be used as a guideline, in which these requirements may not be altered but the level of service sought or other conditions may be individualized, based on facility/VISN need or preference. Additional guidelines for the development of this template are detailed in some of the recommendations that follow.

Incorporating leading practice: We recommend that VA create this template by reviewing the SOW developed for VISN 11 contract, as it incorporates many of the relevant JCAHO standards within the contract language.

- **All home oxygen contracts should include language referencing the requirement to maintain JCAHO standards.** Additionally, patient education requirements should specifically include the provision of education on infection control and prevention. Such education is particularly salient in the home oxygen patient population, given the propensity for infection in high-risk environments such as humidified equipment and ventilators. Provision of patient and family education on infection control is a JCAHO requirement.
- **Contract language should specify detailed requirements of vendors for equipment management and documentation.** Sufficient evidence of vendor servicing and maintenance of equipment is key to complying with JCAHO requirements. Potential risk in this area may be managed by detailing specific requirements in the contract language. Contracts should specify that such maintenance is performed, documented, and submitted to VA on a periodic basis. "Periodic" is currently defined in VA contracts as monthly, bi-monthly, or quarterly. We recommend that vendors provide equipment maintenance and servicing monthly, to minimize risk to veterans. Contract language should specifically require vendors to provide documentation of equipment manufacturer, model, and serial number. VA should promote this direction by including this requirement in the home oxygen template to be developed. This can then serve as a checklist for all VA contracting staff and will clarify the level of detail needed in each home oxygen contract.
- **VA should determine, at a national level, an appropriate range for emergency response timeframes.** For coverage areas that are widespread, VA may consider requiring vendors to provide a backup system at time of initial set-up, in the event that the vendor is not able to respond in a reasonable timeframe. JCAHO requires that home oxygen suppliers provide 24-hour emergency services and emergency back-up systems, yet it does not specify limits for response time. Such inconsistencies within VA contracts may result in disparities in the timeliness of emergency services provided to veterans across the country.

Incorporating leading practice: Requirement of vendors to provide back-up systems to all patients at time of initial delivery and set-up

- ***As part of the home oxygen contract template to be developed at a national level, VA should include a specific requirement that vendors discuss patients' rights to advance directives with all patients.*** This stipulation should be included under the listing of JCAHO standards required by VA for their vendors. The contract requirement should further stipulate that contractors include this information during patient education and obtain signed evidence from the patient that such education was provided. This should then become part of the patient record, so that VA can confidently report that all veterans have been told of their right to formulate advance directives. Patients receiving long-term oxygen therapy should be provided information on their right to advance directives. These patients may be dependent on ventilators or may be prescribed oxygen as palliative therapy. They should be fully informed on their rights to advance directives. Suppliers of home oxygen services are required by JCAHO to provide patients with the right to formulate advance directives.
- ***Contract language should specifically detail the information required in both patient care plans and service plans.*** The language should specify how often they are to be updated and how frequently/quickly they should be submitted to VA.

Incorporating leading practice: The contract developed by VISNs 19 and 21 includes a section on Plan of Care/Service Development that specifies timeframes for submission and revision.

Leading practice: We recommend that PSAS review and incorporate Iowa City's "Home Oxygen Contract Roles and Responsibilities" matrix, which defines the scope of services required in the contract, responsibilities of VAMC staff and roles and responsibilities of the contracted provider. (see Appendix C)

Contractual Variances in Monitoring/Management

Those sites that do not meet the requirements stated in VHA documents will be cited by JCAHO. The following recommendations apply to those facilities not in compliance with contract monitoring and management for the Home Oxygen Program.

- ***PSAS should provide additional training and education related to the newest directive for the Home Oxygen Program.*** This may involve a distribution of a pamphlet or an email newsletter alerting PSAS representatives to the requirements related to vendor management. The VHA Directive was updated in September 2001 to amend the requirement for VA visits to home oxygen patients. Site visits and telephone interview results indicate that some VA representatives were unaware of this amendment. This effort should incorporate a reinforcement of requirements related to incident reporting/sentinel events, complaint resolution, and emergency preparedness.
- ***VHA should conduct periodic "mock surveys" of the Home Oxygen Program.*** VHA should validate internal compliance by conducting periodic unscheduled "mock surveys," reviewing various aspects of the program. These areas can include:
 - Requirements in the Directive and Handbook,
 - Documentation of visits to patient homes, vendor sites, truck and license inspections, and patient record reviews, and

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- Documentation of meetings and teleconferences with the vendor, especially the meetings where QM/PI are discussed.

In addition to documentation reviews, such surveys should query staff (PSAS, respiratory, QM, Clinics, and Biomedical), vendors, and patients about processes for incident reporting/sentinel events, complaint resolution, and emergency preparedness. Their answers should reflect what is written in VA documents, policies and procedures, and vendor contracts at each facility. This exercise would not only ensure staff familiarity with internal and external requirements but also provide information about potential deficiencies against JCAHO standards.

- **VHA should use leading practices to address areas of concern in contract management.**

Several facilities have elements of monitoring activities in place but are not complete in their monitoring and management processes of particular areas, e.g., the complaint handling process. Within VA, there are models of complete systems from VAMCs that have scored in the high 90s to 100 in recent JCAHO surveys for the Home Oxygen Program; VA should use their internal “leading practices” as starting points for those VAMCs needing assistance. This strategy might well be successful in addressing the following examples of variations noted in the survey:

- Many VAMCs are able to describe how complaints are handled, but some do not have a tracking system or tools to review and monitor complaints in aggregate,
- Some VAMCs conduct vendor site visits but do not include vendor delivery trucks/vans,
- Several VAMCs review vendor licenses only at the beginning of the contract, and
- Several VAMCs perform satisfaction surveys but in a relatively “hit or miss” fashion.

- **VA should reevaluate the September 2001 Directive requiring 15 home visits per year to home oxygen patients.**

The current requirement to “conduct home visits to 15 home oxygen patients per year” does not take into consideration the great variability in the number of home oxygen patients at each medical center across the country. Presently, facilities with a low volume of home oxygen patients that are conducting the required 15 home visits, are visiting 10% to 18% of its home oxygen patient population. In contrast, facilities with a high volume of home oxygen patients may potentially visit a markedly smaller percentage of its patient population. For example, Detroit, MI, reports to having 1,300 home oxygen patients and currently conducts 30 home visits, which is 2.3% of the home oxygen patient population.

We recommend that the home visit requirement be revised to reflect the great variation in the number of home oxygen patients at each medical center. For example, VA may choose to require a set percentage or set number of home visits, depending on the size of the medical center’s home oxygen patient population. VA may require medical centers with over 200 home oxygen patients to conduct home visits to at least 5% of its home oxygen patient population. VA may consider requiring medical centers with less than 200 home oxygen patients to conduct a minimum of 10 home visits per year.

VISN Prosthetic Representatives should work with VAMC PSAS Chiefs to identify the total number of home oxygen patients at each facility and establish the target for home visits for each year. VAMCs may choose to conduct more home visits than the established minimum standard. However, each VISN Prosthetic Representative should work with VAMC PSAS Chiefs to ensure that the minimum requirement is met annually.

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- **VA should evaluate the role of home oxygen coordinator and consider the following questions:**
 - DO VAMCs with large volumes of home oxygen patients need a dedicated, full-time home oxygen coordinator to effectively manage the home oxygen program?
 - Is there a significant difference in the quality and delivery of services in programs coordinated by a clinician (such as an RT, or RN specializing in pulmonary services) versus those coordinated by an administrative staff member?

VA may consider certain factors when evaluating the role of the coordinator, such as high volume of home oxygen patients at a given medical center, high cost of home oxygen program, large number of medically complicated home oxygen patients, difficult vendor management relationships or history of noncompliance with JCAHO requirements. Medical centers facing these issues may be well served by establishing a dedicated home oxygen coordinator position. We identified leading practices within VA that have established dedicated fulltime home oxygen coordinator positions, which are filled by clinicians. Various staff at these facilities indicated that such a position provides for greater continuity of care as well as improved patient and program management.

Home Oxygen Costs

- **Expand contract coverage within manageable limits.** Expanded coverage will generally provide efficiencies simply due to the lack of repetitive contract activities across multiple facilities and/or VISNs. Since labor cost (which involves direct salary, benefits, training, communication, etc.) is invariably the most significant cost driver for any major function or activity, targeting reduction of labor cost will generally provide the greatest potential savings or efficiency within the arena of internal VA operational costs. However, this must be determined in conjunction with an assessment of such issues as: variances in patient and vendor populations across expanded coverage area; potential impact of standardization on quality of care; and differences in internal processes, policies, and systems for financial and contract management. Similarly, the materiality of internal operations costs to total home oxygen related contract costs must drive a decision to undertake the effort of consolidating contract administration processes and functions for home oxygen services, across an entire VISN or multiple VISNs.
- **Evaluate discrepancies in cost data.** For validation purposes, further evaluation of the discrepancy in total home oxygen costs between NPPD and CDR should be performed to assess average cost. This will particularly necessary for any future use of cost data in effectively managing the home oxygen service component of PSAS.
- **Develop detailed data reports for Home Oxygen.** PSAS should have the capability to distinguish between patients with different diagnoses or between different contract service orders. Although it is not cost-effective to distinguish between every possible patient scenario, PSAS might consider identifying several basic categories for this purpose and designing a report to more easily associate average cost per patient with each major category.
- **Integrate required performance with pricing schedules.** Contracts should provide greater integration of required performance with pricing schedule information to ensure that item costs and resulting services obtained under the contract are comprehensive and meet VA and patient expectations. Some simplification of pricing structure would help facilitate this process, as would establishment of a clear link between the SOW and items or units defined on the pricing schedule.

Leading practice: Review pricing schedule formats developed for the VISN 3 and Boise, ID contracts. Evaluate benefits to each facility of modifying pricing approach to obtain the benefits of better aligning VA requirements and expectations with contractor performance and services, thus providing sound balance of cost control and flexibility in ordering.

Appendix A: List of medical centers interviewed and contracts reviewed

VISN	HOSPITAL	TITLE OF INTERVIEWEE	CONTRACT REVIEWED
1	Providence, RI [†]	VPR for VISN 1, COTR for Home Oxygen	✓
1	White River Junction, VT	VAMC Chief	
1	Manchester, NH	PSAS Chief	
2	Bath, NY [†]	PSAS Representative	✓
2	Buffalo/Syracuse, NY	COTR – Home Oxygen	
3	NY Harbor Health – VISN 3: [†] Bronx Brooklyn Castle Point Montrose NY Harbor Health Northport East Orange Lyons	VISN 3 Home Oxygen/RT Coordinator, COTR	✓
4	Philadelphia, PA	PSAS Chief	
5	Martinsburg, WV	PSAS Chief, COTR	
5	Washington, DC	Contract Review Only	✓
5	Perry Point, MD VA MD HCS Baltimore, Fort Howard	Facility Service Line Manager for PSAS	
6	Durham, NC	COTR – Home Oxygen	
6	Richmond, VA	Contract Review Only	✓
7	Charleston, SC	VAMC COTR	
7	Atlanta, GA [†]	Network COTR	✓
7	Birmingham, AL	*Program Manager and COTR	
8	Gainesville VAMC	PSAS Chief	
8	Miami, FL [†]	PSAS Chief	✓
9	Memphis, TN [†]	*Home Oxygen Coordinator RT, and PSAS Chief	✓
9	Louisville, KY	PSAS Chief	
10	Cleveland, OH	Administrative Officer for Medical Services	
10	Chillicothe, OH	PSAS Chief, COTR	
11	Battle Creek, MI [†]	Contract specialist	✓
11	Detroit, MI [†]	Prosthetic Representative	✓
12	Madison, WI	PSAS Representative, COTR	

*Interview was done with 2 people with 2 different titles

[†]Contract review and telephone interview done for this facility

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VISN	HOSPITAL	TITLE OF INTERVIEWEE	CONTRACT REVIEWED
12	Hines, IL	*Purchasing Agent and Prosthetics Program Manager	
15	St. Louis, MO	Prosthetic Program Manager	
15	Kansas City, MO	VPR for VISN 15	
15	Leavenworth, KS	Contract Specialist	
15	VISN 15	Contract Review Only	✓
16	Muskogee, OK	Lead RT, COTR	
16	Biloxi, MS: VA Gulf Coast System (2 hospitals: Biloxi and Gulf Port)	Adm. Officer, PSAS, COTR	
16	Shreveport, LA	PSAS Chief	
17	San Antonio, TX*	PSAS Chief, COTR	✓
18	Albuquerque, NM	PSAS Chief, COTR	
18	Amarillo, TX	*Contract Specialist and Home Oxygen Coordinator	
19	VA Montana HCS, Fort Harrison, MT	Chief Patient Admin Services, Administrator for Home Ox Program for VISN 19	
19	Denver, CO	Contract Review Only	✓
20	Boise, ID*	PSAS Chief, COTR	✓
20	Puget Sound (Seattle)*	Clinical Coordinator in PSAS	✓
20	Walla Walla, WA (Jonathon M. Wainwright Memorial VAMC)	*VISN Prosthetic Representative and Contracts	
20	Alaska HCS/Regional Office, Anchorage, AK	*PSAS Chief and Prosthetics Purchasing Clerk	
21	San Francisco, CA	PSAS Chief	
21	Honolulu, HI	Chief of Acquisition/Prosthetics	
22	Greater LA HCS, West Los Angeles, CA	COTR Home Oxygen	
22	Loma Linda, CA	Home Oxygen Coordinator	
23	Omaha, NE (was VISN 13 & VISN 14)	PSAS Chief for Nebraska	
23	Fargo, ND	PSAS Chief, COTR for Home Ox	
23	Black Hills VAMC, SD (Fort Meade and Hot Springs)	Supervisor RT, COTR	
23	Iowa City, IA (integrated health system), Des Moines & Knoxville*	VPR for old VISN 14	✓

*Interview was done with 2 people with 2 different titles

*Contract review and telephone interview done for this facility

Appendix B – Telephone Interview and Contract Review Tool*

<u>Contract Review/Interview Questions</u>	
1	Interviewee/position & date
2	Station name
3	Station number
4	VISN
5	Facility or VISN-wide contract?
6	For facility, considered urban, rural or urban fringe?
7	Method of solicitation
8	Optional years
9	Type of negotiation: sole source/competitive bid
10	How is SOW/contract developed? Who has input?
11	How many facilities are covered by the contract?
12	Who is responsible for oversight of contract?
13	Type of contract: fixed price, T&M, cost?
14	Number of vendor awards?
15	Period of performance of current contract
16	Status of extensions, if any
17	Non-performance clauses?
18	Level of service provided: Equipment only (E), Oxygen only (O), Patient Care (P) or combination
19	How many home oxygen patients?
20	How many CPAP patients
21	How many BiPAP patients?
22	Routine servicing/maintenance/inspection of equipment? (specify frequency)
23	Equipment manufacturer, serial number, model, etc is documented
24	Delivery of service/equipment for initial set-up (specify timeframe)
25	Delivery of service/equipment for emergencies (specify timeframe)
26	Emergency service available to patient 24 hours a day?
27	Provision of backup equipment so as not to threaten patient's life/disrupt patient service?
28	Does your contract require the vendor to have an Emergency preparedness plan?
29	Contract specifies qualifications of contracted providers?
30	Communication requirements before initial set-up? (specify timeframe)
31	Contract requires that emergency contact information be provided to patient?
32	Evidence of Contractor quality assessment/improvement activities submitted to VA?
33	Requires vendor to do safe home assessment? (safe outlets/ safe access/ power wattage, etc)
34	Contract requires JCAHO accreditation of vendor?
35	Patient instruction must be provided in writing?
36	DNR policy?
37	Patient care plans?
38	Does contract require vendor to provide VA with documentation of contract performance? If so, what is it, and what's the frequency?

Home Oxygen Contracts

<u>Contract Review/Interview Questions</u>	
39	Contract requires vendor documentation of patient assessments?
40	Contract requires periodic reassessment of patient?
41	License of providers is verified
42	Patient and caregiver are educated on equipment, and such education is documented
43	Patient and caregiver are educated on infection control
44	Incident Reporting system?
45	Patient record included adequate information to identify patient and documents care and service provided
46	Invoicing specifics included?
47	Cost per patient/Any cost information in the contract that we can use to compare between contracts?
48	Perform site visits to vendor? If so, how often
49	Does VA facility check vendor trucks or vans?
50	Non-compliant vendor performance implications in contract?
52	Indemnification and medical liability information
53	Any Type I recommendations from JCAHO? If so, for what and what was the corrective action plan?
54	Visits by VA to patient homes? (frequency/number of patients a year?)
55	Any communication with patient on patient satisfaction of contractor performance? (surveys, letters, calls? - specify type and frequency)
56	Who monitors the contract? Specify position
57	Does VA meet with vendor monthly/quarterly for QA type meetings to resolve issues, f/u about patient care issues and complaints?
58	How often are contracts re-negotiated?
60	Is there a PSAS staff member dedicated to Home Oxygen services?
61	What is the process of resolving patient complaints?
62	Does the VA facility have a formal quality improvement/quality management plan for home oxygen?
63	Are there any issues with contractors/contract management specific to your region?
64	What was the cost to the facility for home oxygen services for FY01? What did this cost represent - equipment and oxygen only or patient care/clinical services as well?
65	How are costs tracked? Who is responsible for tracking costs?
66	Is there anything that works particularly well in your home oxygen program or with regards to home oxygen contracting that you would like to share?
67	Anything unique or of note in the contract?

* Questions in bold face asked in telephone interview; unbolded questions apply to contract review