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VA AND DEFENSE HEALTH CARE

Increased Risk of Medication Errors for Shared Patients

GAO-02-1017

Contents

Abbreviations

ADE	adverse drug event
ASHP	American Society of Health-System Pharmacists
DOD	Department of Defense
CHCS	Composite Health Care System
CPOE	computerized provider order entry
CPRS	Computerized Patient Record System
FHIE	Federal Health Information Exchange
GCPR	Government Computer-Based Patient Record
IOM	Institute of Medicine
IHS	Indian Health Service
ISMP	Institute for Safe Medication Practices
JCAHO	Joint Commission on Accreditation of Healthcare Organizations
MTF	military treatment facility
PDTS	Pharmacy Data Transaction Service
P&T	pharmacy and therapeutics
VA	Department of Veterans Affairs

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United States General Accounting Office
Washington, DC 20548

September 27, 2002

The Honorable Daniel K. Inouye
Chairman
Subcommittee on Defense
Committee on Appropriations
United States Senate

Dear Mr. Chairman:

Adverse drug events (ADE), which include adverse drug reactions and preventable medication errors, have gained national attention in recent years. The risk of medication errors is an important issue for the Department of Veterans Affairs (VA) and the Department of Defense (DOD), in part because their large beneficiary populations receive many prescriptions—in fiscal year 2000, 86 million and 66 million, respectively. Each agency has recognized the significance of medication errors and has instituted practices to reduce them, such as making patients' medical records more accessible to providers and performing checks for drug interactions. Although each agency designed safeguards to protect its own patients, certain VA and DOD patients receive medications from both agencies—either because they are eligible for care under both systems or because they are referred from one agency to the other under VA-DOD health resources sharing agreements. Preventing medication errors for these shared patients presents an additional challenge.

VA and DOD estimate that about 800,000 beneficiaries are dually eligible for care from VA and DOD and an unknown number of additional beneficiaries receive care through sharing agreements.[1] Concerned about the effectiveness of medication safeguards for shared patients, you asked us to determine (1) from which agency shared patients obtain medications, (2) whether gaps exist in medication safeguards for shared patients, and (3) if gaps exist, how they are being addressed.

[1]VA and DOD could not provide us with the number of beneficiaries receiving care under sharing agreements. However, in our 2000 report, *VA and Defense Health Care: Evolving Health Care Systems Require Rethinking of Resource Sharing Strategies* (GAO/HEHS-00-52, May 17, 2000), six joint venture sites—sites where VA and DOD have pooled resources to capitalize on existing facilities or to build new ones—reported about 360,000 episodes of care under sharing agreements for fiscal year 1998.

To conduct our work, we reviewed VA's and DOD's processes for providing outpatient and inpatient medications to shared patients. To focus our review on locations with large numbers of shared patients, we examined VA and DOD's seven joint ventures, which have had experience working together under sharing agreements. At your request, we conducted an on-site review of pharmacy operations at the joint venture in Hawaii, where there is an agreement between Tripler Army Medical Center and the VA Medical and Regional Office Center. At this site, we observed how medications are provided to shared patients and evaluated these processes for gaps in medication safeguards. We also examined medication error reports and interviewed VA and DOD providers, pharmacists, patient safety personnel, and information systems personnel. We spoke by telephone with personnel in similar positions at the six other joint venture sites to identify procedures used to provide medications to shared patients and evaluated these procedures for medication safety gaps. We spoke with personnel at all joint venture sites about their medication safety programs, but we were not able to identify errors specific to shared patients because neither VA nor DOD tracks information in this way.

We also spoke with VA and DOD headquarters personnel knowledgeable about pharmacy, patient safety, formulary, and information technology issues.[2] In addition, we reviewed the literature on medication errors and consulted experts on patient safety and medication errors from the Joint Commission on Accreditation of Healthcare Organizations (JCAHO); the Institute for Safe Medication Practices (ISMP); and the Leapfrog Group for Patient Safety, a coalition of more than 100 public and private organizations that provide health care benefits. We conducted our work from February 2002 through September 2002 in accordance with generally accepted government auditing standards.

Results in Brief

Joint venture sites with inpatient facilities provide pharmacy services to shared inpatients in the same manner as they do for their own beneficiaries, that is, medications are ordered using the facility's guidelines and filled through the inpatient pharmacy at that facility. Although the process for providing medications to shared outpatients differs across sites, generally each agency expects its beneficiaries to use

[2]A formulary is a set of drugs that a health care organization prefers that its physicians prescribe.

its own, separate pharmacy for outpatient prescriptions, even when prescriptions are ordered by providers from the other agency. At one joint venture, a single DOD pharmacy provides medications for both VA and DOD outpatients. However, VA patients obtain only initial, short-term prescriptions at this DOD pharmacy; longer-term prescriptions and refills are obtained by mail from VA.

Shared patients face an increased risk of medication errors. Gaps in safeguards result primarily from VA's and DOD's separate, uncoordinated information and formulary systems. Providers and pharmacists at joint venture sites generally do not have access to shared patients' complete health information to aid in making medication decisions because information in one agency's electronic health record system is generally not accessible by the other agency. Also, providers of one agency generally cannot use computerized provider order entry (CPOE) to order drugs that are to be dispensed in the other agency's pharmacy. As a result, the potential for error is introduced when prescriptions are handwritten or re-entered into the other agency's pharmacy system. Moreover, automatic checks for drug allergies and interactions are not complete for shared patients because medications dispensed by the other agency will not be included in the check. VA's and DOD's separate formulary systems also complicate providing medications to shared patients because providers either prescribe from the other agency's formulary, which may contain unfamiliar drugs, or prescribe a limited supply of a drug, which may later be switched to comply with the formulary of the patient's home agency.[3] Such switching puts the patient at greater risk for an adverse drug reaction.

Joint venture sites have taken steps to address some of these safety gaps. For instance, all sites have made patient information more accessible by providing additional, although incomplete, access to the other agency's patient information system. Some sites have produced computer-printed, rather than handwritten, prescriptions or developed practices to collect information on medications that patients are using from other sources, for instance, those obtained from the other agency. In addition, some have addressed the problems created by separate formulary systems by having both agencies represented on the pharmacy and therapeutics (P&T)

[3]"Home agency" is used in this report to refer to the primary agency the patient relies on for care and "treating agency" for the other agency. For instance, VA is the home agency for VA patients referred to DOD for care, and DOD is the treating agency.

committee, the group that makes decisions about drugs included on the formulary, or by stocking nonformulary drugs used by the other agency. However, none of these practices fully addresses the safety gaps. In addition, the use of such practices varies by site.

We are recommending that VA and DOD improve procedures, especially relating to sharing of electronic information, for patients using both systems so that they are not at greater risk of medication errors than if they received their care from only one system. In its comments to our draft report, VA concurred with all our recommendations. DOD concurred with our recommendations to develop the capability for VA and DOD providers to access patient information in both agencies' patient information systems and to develop comprehensive drug interaction checks that include both VA- and DOD-provided drugs. DOD also agreed to require providers to use CPOE for shared patients where it is available. It disagreed with modifying the current systems as a way of extending this capability because both agencies have longer-term plans to upgrade or replace their pharmacy information system modules. However, because of the time it will take to upgrade or replace the system modules, shared patients continue to be at risk for medication errors. DOD also said that it did not concur with establishing a joint P&T committee at each joint venture site. We recommended the establishment of either a joint P&T committee or a similar working group, and DOD indicated support for such working groups.

Background

To encourage the sharing of federal health care resources, the Veterans Administration and Department of Defense Health Resources Sharing and Emergency Operations Act authorizes VA medical centers and DOD military treatment facilities (MTF) to enter into sharing agreements to buy, sell, and barter medical and support services.[4] Local VA and DOD officials have identified benefits that have resulted from such sharing, including increased revenue, enhanced staff proficiency, fuller utilization of staff and equipment, improved beneficiary access, and reduced cost of services.[5]

[4]Pub. L. No. 97-174, 96 Stat. 70 (1982) (codified to 38 U.S.C. § 8111 (2000)).

[5]U.S. General Accounting Office, *VA and Defense Health Care: Evolving Health Care Systems Require Rethinking of Resource Sharing Strategies*, GAO/HEHS-00-52 (Washington, D.C.: May 17, 2000).

Seven of these sharing agreements are joint venture agreements, which involve the sharing of physical space as well as health care services. These joint ventures range from a single, jointly staffed MTF serving both VA and DOD patients—as is the case with Mike O'Callaghan Federal Hospital at Nellis Air Force Base in Nevada—to more modest sharing in Key West, Florida, where VA and DOD share a building that houses their separate outpatient clinics. In addition to physical space, agreements at these sites usually provide for one agency to refer patients to the other for inpatient and/or outpatient care. As table 1 shows, DOD is most often the host agency, that is, the agency providing the majority of services.

Table 1: Description of Joint Venture Sites and Services as of August 2002

Joint venture	Host agency	General description of health care services shared
Alaska Elmendorf Hospital, Elmendorf Air Force Base Alaska VA Healthcare System and Regional Office	DOD	Air Force hospital serves DOD and VA inpatients. Air Force also provides certain outpatient specialty care for VA patients.
California David Grant Medical Center, Travis Air Force Base VA Northern California Health Care System	DOD	Air Force hospital at Travis Air Force Base serves DOD and VA inpatients. Air Force also provides certain outpatient specialty care for VA patients. VA hospital at Sacramento provides certain specialty outpatient care to DOD patients.
Florida[a] Key West Naval Branch Clinic VA Community Based Clinic	DOD	DOD provides outpatient pharmacy medications to both DOD and VA patients.[b]
Hawaii Tripler Army Medical Center Honolulu VA Medical and Regional Office Center	DOD	Army hospital serves DOD and VA inpatients. Army also provides certain outpatient specialty care for VA patients.
Nevada Mike O'Callaghan Federal Hospital, Nellis Air Force Base VA Southern Nevada Healthcare System	DOD	Jointly staffed Air Force hospital serves DOD and VA inpatients. Hospital also provides certain outpatient specialty care for both VA and DOD patients.
New Mexico United States Air Force Clinic, Kirtland Air Force Base New Mexico VA Health Care System	VA	VA hospital serves VA and DOD inpatients. VA also provides certain outpatient specialty care for DOD patients.
Texas William Beaumont Army Medical Center, Fort Bliss El Paso VA Health Care System	DOD	Army hospital serves DOD and VA inpatients. Army also provides certain outpatient specialty care for VA patients.

[a]The sharing agreement for these clinics is between the Naval Hospital Jacksonville and the Miami VA Medical Center.

[b]Pharmacy services are the primary focus of this sharing agreement, but VA also provides limited specialty care to DOD patients.

Source: VA and DOD joint venture site documents and officials.

In addition to referred patients, joint ventures, like other VA and DOD facilities, share dually eligible patients. Recent changes in VA's and DOD's health care programs have increased both the number of dual eligibles and the likelihood that they will obtain services from both systems. The

number of veterans, including all military retirees, eligible for VA health care was increased in fiscal year 1999 due to removal of statutory restrictions.[6] In addition, the number of military retirees eligible for DOD health care increased in 2001 when full eligibility was extended to retirees age 65 and over.[7] Furthermore, a February 2002 increase in VA's copayment for outpatient drugs—from $2 per prescription to $7 per prescription—has given dual eligibles who receive health care from VA more incentive to have their prescriptions filled at a DOD pharmacy.[8]

Medication Errors Pose Significant Risk

The Institute of Medicine (IOM) raised national awareness of the problem of medication errors with its 2000 study, *To Err is Human: Building a Safer Health System*.[9] As we reported in 2000, there is general agreement that medication errors are a significant problem, although the actual magnitude of the problem is uncertain.[10] Researchers and patient safety advocates have suggested certain measures to reduce the risk of medication errors, and VA and DOD have incorporated many of these measures as features of their health care systems. Figure 1 illustrates the typical process, including safeguards that VA and DOD use to provide medications to patients.

[6]Income restrictions were removed by the Veterans Health Care Eligibility Reform Act of 1996, Pub. L. No. 104-262, § 101, 110 Stat. 3177, 3179 (1996). VA's implementing regulations are found at 38 C.F.R. §§ 17.46, 17.47 (2001).

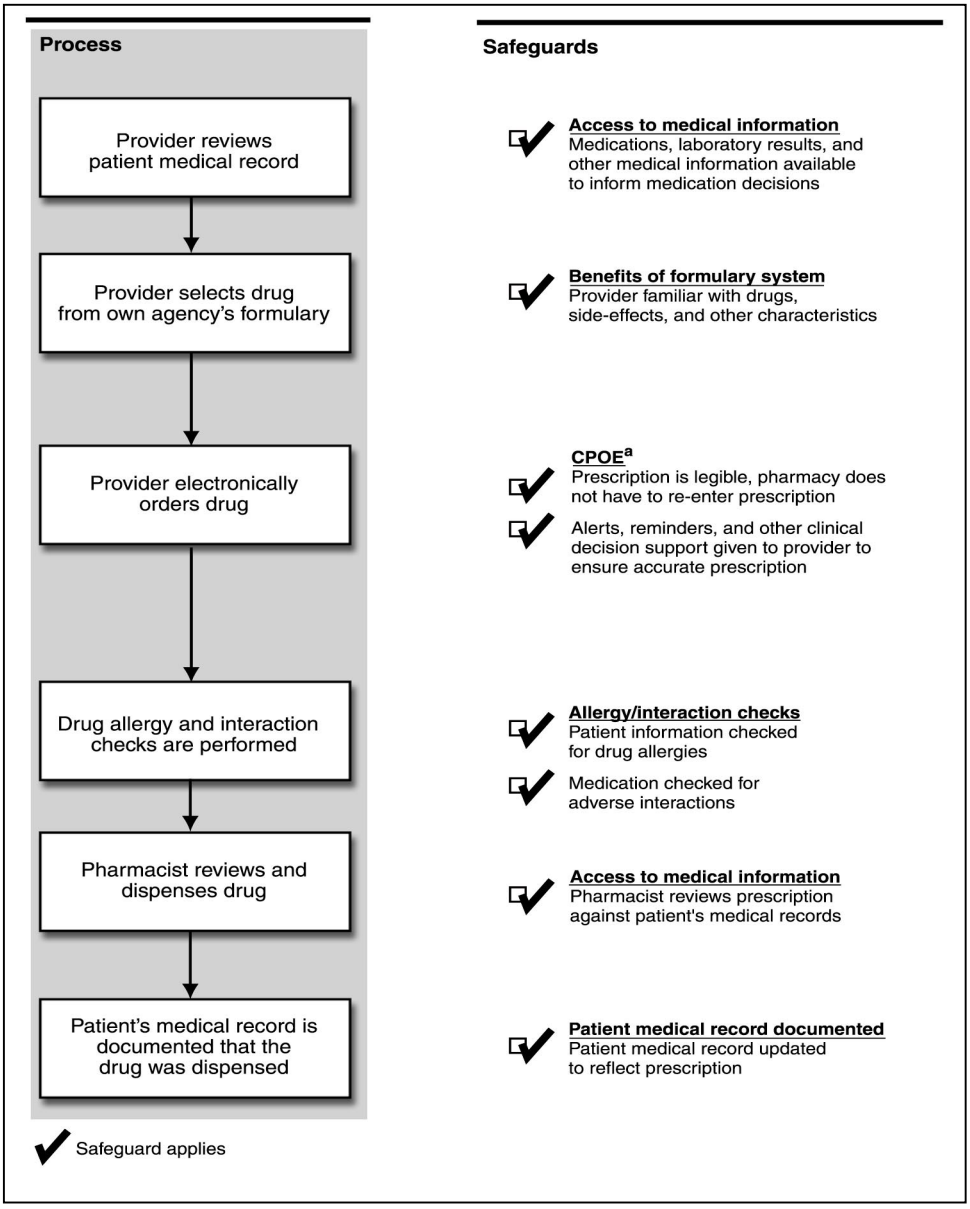
[7]Eligibility was expanded by the Floyd D. Spence National Defense Authorization Act for Fiscal Year 2001, Pub. L. No. 106-398, §§ 711-712, 114 Stat. 1654, 1654A-175, 1654A-176 (2000). Formerly, military retirees 65 and older were treated on a space-available basis.

[8]This copayment is adjusted annually for inflation.

[9]IOM estimated that over 7,000 people in the United States die each year from medication errors. Institute of Medicine, *To Err is Human: Building a Safer Health System* (Washington, D.C.: National Academy Press, 2000).

[10]U.S. General Accounting Office, *Adverse Drug Events: The Magnitude of Health Risk Is Uncertain Because of Limited Incidence Data*, GAO/HEHS-00-21 (Washington, D.C.: Jan. 18, 2000).

Figure 1: Safeguards in Process Typically Used by VA and DOD to Provide Medications to Their Own Beneficiaries



[a]At most DOD MTFs, DOD providers lack the capability to electronically order medications for inpatients.

Source: VA and DOD headquarters officials and joint venture site documents and officials.

Medication safety experts have identified the following factors that can contribute to reducing medication errors.

Accessible Patient Medical Information

According to experts from organizations such as the American Society of Health-System Pharmacists (ASHP) and IOM, access to patient medical information is important to both providers and pharmacists in reducing medication errors. A study of adverse drug events conducted by Brigham and Women's Hospital found that the inaccessibility of patient information—such as information on the patient's condition, results of laboratory tests, and current medications—was a leading cause of prescribing errors.[11] The ASHP guidelines for preventing hospital medication errors state that prescribers should evaluate the patient's total status and review all existing drug therapy before prescribing new or additional medications. They also recommend that pharmacists and others responsible for processing drug orders should have routine access to appropriate clinical patient information—including medication and allergy profiles, diagnoses, and laboratory results—to help evaluate the appropriateness and efficacy of medication orders. One way to provide this ready access is a computerized medical record. A computerized medical record can improve health care delivery by providing medical personnel with better data access, faster data retrieval, and more versatility in data display than available with a paper record.[12]

Both VA and DOD are in the process of transitioning from paper-based to electronic systems for recording and accessing patient health information. VA's system, the Computerized Patient Record System (CPRS), captures a wide range of patient information, including progress notes, vital statistics, laboratory results, medications, drug allergies, and radiological and catheterization images. DOD's system, the Composite Health Care System (CHCS), captures similar, but less extensive, patient information. For

[11]Lucian L. Leape and others. "Systems Analysis of Adverse Drug Events," *The Journal of the American Medical Association*, vol. 274, no. 1 (1995).

[12]U.S. General Accounting Office, *Medical ADP Systems: Automated Medical Records Hold Promise to Improve Patient Care*, GAO/IMTEC-91-5 (Washington, D.C.: Jan. 22, 1991), and Institute of Medicine, *The Computer-Based Patient Record: An Essential Technology for Health Care* (Washington, D.C.: National Academy Press, 1997).

example, CHCS cannot capture or store progress notes or electronic images.[13]

Formulary Systems

JCAHO standards for hospitals and ambulatory health organizations require that organizations maintain formularies and direct that they must consider the potential for medication errors as a criterion for selecting drugs that will be stocked.[14] Although frequently considered a mechanism for controlling costs, patient safety experts maintain that formulary systems can also optimize therapeutic outcomes and facilitate medication safety.[15] According to IOM, a formulary system can help reduce adverse drug events because the drugs selected for the formulary are evaluated by knowledgeable experts and chosen based on their relative therapeutic merits and safety.[16] In addition, formularies limit unneeded variety in drug use—a practice supported by ISMP and the Institute for Healthcare Improvement—and assist in educating prescribers on safe and appropriate use of formulary drugs.

Both VA and DOD have formulary systems. VA's national formulary consists of about 1,200 pharmacy items, including over 1,000 drugs, and each of VA's 21 regional Veterans Integrated Service Networks can augment the national formulary. DOD's Basic Core Formulary consists of about 165 drugs, and an MTF can add other drugs based on the clinical services and scope of care provided by that facility.[17] Both agencies also have approval processes for prescribers to obtain nonformulary drugs for their patients when medically necessary. As part of their ordering systems,

[13]DOD is developing an enhanced health information system, CHCS II. Starting this year, this system will be deployed in installments over the next 6 years and will allow for capturing additional patient information and provide more capabilities, for instance, more clinical decision support, than CHCS currently has.

[14]JCAHO Sentinel Event Alert, Issue 19, May 2001.

[15]By formulary system, we mean not only the list of preferred drugs but also the associated processes used by organizations to select safe and efficacious drugs and to monitor and guide their use.

[16]Institute of Medicine, *Description and Analysis of the VA National Formulary* (Washington, D.C.: National Academy Press, 2000).

[17]In the National Defense Authorization Act for Fiscal Year 2000, Congress required DOD to implement a uniform drug formulary by October 2000, applicable to military pharmacies, retail pharmacies, and DOD's mail order pharmacy (Pub. L. No. 106-65 § 701 (a)(1), (2)(A), 113 Stat. 512, 677 (2000) (codified to 10 U.S.C. 1074g (a)(1), (2)(A) (2000)). DOD issued a proposed rule to establish a uniform formulary in April 2002, but this rule has not been finalized (67 Fed. Reg. 17948 (2002)).

some VA and DOD facilities have also developed electronic decision-making support related to their formularies, such as prompts to remind physicians to order specific laboratory tests prior to administering certain drugs or alerts related to the safe use of certain drugs.

Computerized Provider Order Entry

CPOE systems can reduce medication errors by eliminating legibility problems of handwritten orders and providing clinical decision-making support by sending alerts and instantaneous reminders directly to providers as orders are being placed.[18] For instance, as providers enter a medication order, they can be given a potential range of doses for medications ordered, alerted to relevant laboratory results, and prompted to verify which medication is being ordered when the drug sounds or looks like another drug on the formulary. Studies have shown computerized provider ordering reduced medication errors by 55 percent to 86 percent.[19] In light of this evidence, the Leapfrog Group for Patient Safety adopted computerized provider order entry as one of its initial safety standards. ISMP has also emphasized the need to take advantage of electronic ordering technology, calling for the elimination of handwritten prescriptions nationwide by 2003.

VA and DOD acknowledge the safety benefits of providers electronically ordering medications, and both CPRS and CHCS (for outpatient prescriptions only at most locations) have this capability.[20] VA established a goal in its 2002 Network Performance Plan for 95 percent use of CPOE (both inpatient and outpatient) by 2002, with 100 percent use planned for 2004.[21] While DOD officials told us that CPOE is encouraged and widely utilized, DOD has no written policy or goals related to its use.

[18]CPOE allows direct entry of medication orders by a prescriber into a system that electronically transmits these orders to the pharmacy for filling.

[19]David W. Bates and others, "Effect of Computerized Physician Order Entry and a Team Intervention on Prevention of Serious Medication Errors," *The Journal of the American Medical Association*, vol. 280, no. 15 (1998), and David W. Bates and others, "The Impact of Computerized Physician Order Entry on Medication Error Prevention," *The Journal of the American Medical Informatics Association*, vol. 6, no. 4 (1999).

[20]DOD is evaluating a new pharmacy package that would include inpatient ordering capability; however, officials were unable to provide us with an expected implementation date.

[21]Chemotherapy and total parenteral nutrition are excepted for inpatient ordering; narcotics, chemotherapy, and clinic-stocked items (such as immunizations) are excepted for outpatient ordering.

Automatic Checks for Drug Interactions and Allergies

Both VA's and DOD's electronic ordering systems perform automatic checks for potential adverse reactions due to drug allergies and interactions. VA's CPRS performs checks for drug allergies and interactions between all medications ordered and dispensed by a VA facility, including those sent from VA's mail order center. Although medications dispensed for the same patient at another VA facility are generally not included in the check, VA officials told us that they are exploring methods to broaden their drug interaction capability.[22] DOD's system for drug interaction checking is more comprehensive than VA's system. CHCS checks for drug allergies and interactions between drugs prescribed or dispensed at the MTF, and DOD's Pharmacy Data Transaction Service (PDTS) aggregates information from CHCS with other points of service—other MTFs, network pharmacies, and DOD's mail order pharmacy—to perform a complete drug interaction check.[23]

Automatic electronic checks for drug interactions, commonly available in retail drug stores, have been shown to greatly minimize medication errors.[24] For example, one study found that an automated review of prescriptions written for 23,269 elderly patients produced 43,007 alerts warning about potential medication problems—24,266 of which recommended a change in drug or dosage.[25] Professional groups such as ASHP and ISMP have also acknowledged the value of these systems.

[22]VA officials told us that about 14 percent of VA patients have prescriptions filled at more than one VA facility. Although VA providers have the ability to remotely view patients' records in other facilities, this systemwide information is not included in automatic drug checks.

[23]Although DOD lacks computerized provider order entry for inpatients at most locations, this automatic check occurs when inpatient medication orders are entered into CHCS by pharmacy staff.

[24]Such services are often provided by pharmacy benefits managers, organizations that manage the prescription drug benefit on behalf of the benefit sponsor, which may be a health plan, a health maintenance organization, a union, or an employer.

[25]Mark Monane and others, "Improving Prescribing Patterns for the Elderly Through an Online Drug Utilization Review Intervention: a system linking the physician, pharmacist, and computer," *The Journal of the American Medical Association*, vol. 280, no. 14 (1998), p. 1249(1).

Shared Patients Obtain Inpatient Drugs from the Treating Agency but Generally Return to Home Agency for Outpatient Drugs

At the six joint venture sites where inpatient services are provided, all patients referred for inpatient care receive medications from the inpatient facility providing the care.[26] Processes used to provide and record inpatient medications to referred patients are the same as those used for the host agency's own beneficiaries. Inpatient medications are ordered using the host facility's formulary guidelines and filled through the inpatient pharmacy. Initial supplies of discharge medications (usually 30 days or less) are also typically provided, although patients are expected to return to their home agency pharmacy for longer-term supplies.

In contrast, the process for providing medications to shared outpatients differs across sites. At six of the joint venture sites, each agency maintains a separate outpatient pharmacy. As a general rule, each agency expects its beneficiaries to use its pharmacy for outpatient prescriptions, even when providers from the other agency order the prescription. For instance, in Hawaii, both the Tripler Army Medical Center and the VA outpatient clinic next door maintain outpatient pharmacies. VA patients who are referred to Tripler for outpatient specialty care are expected to return to the VA clinic pharmacy to have their prescriptions filled. Even though this is the general rule at most sites, we noted that exceptions occur. For instance, at David Grant Medical Center on Travis Air Force Base, DOD supplies oncology medications to VA patients. Another exception is that all joint venture inpatient facilities provide weekend and after-hours emergency room care to patients of the other agency and, generally, medications are also supplied if needed. In contrast to the general rule, at the DOD facility in El Paso, referred VA patients are not expected to return to their home agency for their initial prescriptions but rather are allowed to obtain an initial supply of drugs from the DOD pharmacy. Subsequent prescriptions for these patients (renewals or refills) must be filled by their VA pharmacy.

At the seventh site, Key West, only DOD maintains a pharmacy. It serves both VA and DOD patients. However, VA patients receive only initial, short-term prescriptions (up to 30 days) from this DOD pharmacy and obtain longer-term prescriptions and refills via mail from the VA Medical Center in Miami.[27]

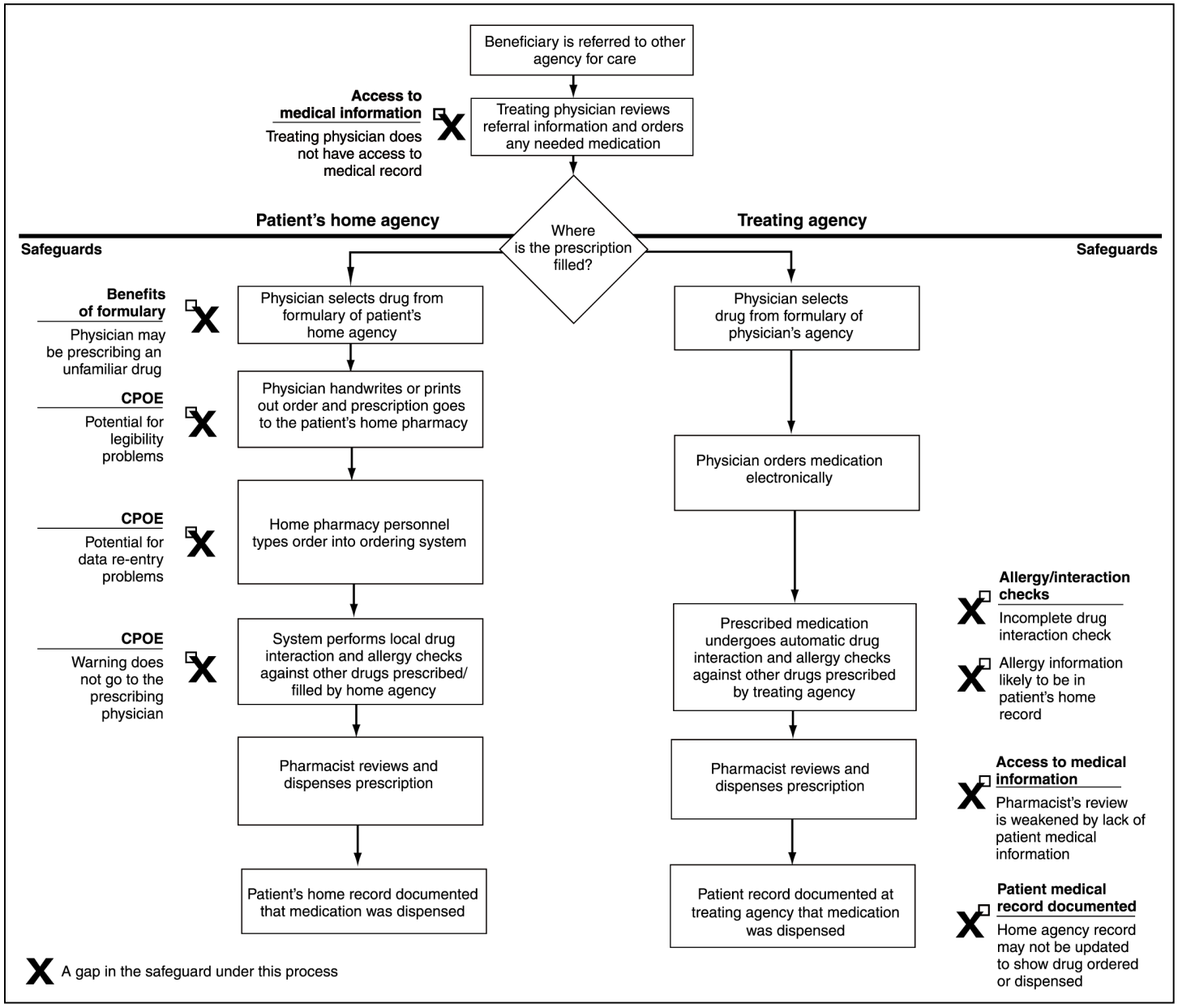
[26]Neither agency has an inpatient facility at Key West.

[27]Homeless veterans in Key West obtain all their medications through the DOD pharmacy.

Shared Patients Experience Gaps in Medication Safety Measures

VA's and DOD's separate, uncoordinated information and formulary systems result in gaps in medication safeguards for shared inpatients and outpatients. Lacking coordinated information systems, providers and pharmacists at joint venture sites often cannot access shared patients' complete health information, including prescribed medications, nor can providers from one agency use electronic ordering to prescribe drugs that are to be dispensed by the other agency's pharmacy. Because information systems are uncoordinated, checks for drug allergies and interactions for shared patients are based on incomplete information. In addition, separate formulary systems introduce complications for shared patients because providers must either prescribe from the other agency's formulary, which may contain drugs unfamiliar to providers, or prescribe a limited supply of a drug, which may later be switched to comply with the formulary of the patient's home agency. These gaps are illustrated in figure 2.

Figure 2: Gaps in Medication Safeguards for Shared Patients



Note: This figure depicts the general process for shared inpatients and outpatients. However, an additional gap exists for shared inpatients that is not illustrated in the figure. Shared patients who are taking medications at the time of admission may have those drugs switched to comply with the agency's formulary at the inpatient facility.

Source: VA and DOD joint venture site documents and officials.

Providers and Pharmacists Have Incomplete Access to Health and Medication Information on Shared Patients

Ready access to pertinent clinical information is an important feature of medication safety; while VA's and DOD's patient information systems are capable of serving this function for each agency's own beneficiaries, gaps exist for shared patients. VA and DOD providers and pharmacists have ready access to health records of their own beneficiaries, largely through CPRS and CHCS, respectively. However, when agencies refer patients for care, the treating agency's providers and pharmacists have incomplete access to patients' health and medication information. Although referrals will usually be accompanied by some explanation of patients' medical conditions, the bulk of their electronic health and medication information, which resides in the health information system of their home agency, will often not be available to providers and pharmacists in the agency where they are referred for care. Access for pharmacists and treating providers to patient information in the referring agency's information system varies by location. For example, at four joint venture sites, pharmacists filling prescriptions for shared patients have no access to the other agency's patient information system. At another site, pharmacy access is restricted—at Tripler Army Medical Center in Hawaii, access to VA's CPRS is available in the inpatient pharmacy, but only one pharmacist has access. Providers at a few facilities have broader access. For example, at the David Grant Medical Center at Travis Air Force Base in northern California, CPRS is installed on every network computer that has CHCS, and providers in certain departments have been granted CPRS access.

VA and DOD pharmacists and providers we spoke with noted that lack of relevant patient health information could be a problem for shared patients. One example given to us was a VA provider treating a dual-eligible patient for diabetes. Certain drugs cannot be safely prescribed for diabetics without monitoring through laboratory tests. If the patient receives care from a VA physician but has prescriptions filled at a DOD pharmacy, the pharmacist would be unable to access the patient's medical record to review these laboratory results.[28] Without this access, the pharmacist must call VA to ensure these laboratory values are within normal limits. In addition, pharmacy personnel at Tripler in Hawaii, where a single inpatient pharmacist has CPRS access, told us that additional pharmacists need CPRS access to facilitate after-hours medication needs of VA patients when this pharmacist is unavailable.

[28]While physicians have initial responsibility for making drug decisions, pharmacists also play a role in ensuring the safety of medication orders.

Providers Generally Cannot Electronically Prescribe Drugs for Shared Patients

Computerized provider ordering of medications increases safety by assisting with medication decisions, providing alerts for drug interactions and allergies, and obviating handwriting legibility and transcription problems. However, prescriptions for shared patients are less likely to be ordered electronically by providers. Although both VA and DOD providers have outpatient electronic ordering capabilities when prescriptions are dispensed at their own pharmacies, patients referred from one agency to the other for care are typically expected to return to their home pharmacy to get prescriptions filled.[29] With the exception of DOD providers in Hawaii, none of the joint venture sites have the capability for providers to electronically order medications through their own computer systems for drugs that are to be dispensed by the other agency's pharmacy, nor do they typically have access to the other agency's electronic ordering systems to issue medication orders. Consequently, providers either handwrite medication orders for shared patients or give them printed copies that must be retyped into the patients' home agency's pharmacy system. Both situations introduce risks unique to shared patients.

We also found situations where providers had the capability to avoid handwriting prescriptions but continued to handwrite them. In Key West, for example, where all drugs are dispensed from the DOD pharmacy, VA providers have access to DOD's electronic ordering system, CHCS; but, for the most part, they handwrite prescriptions. These providers record patient care and medications in VA's CPRS, and if they were to electronically order medications, it would necessitate entry into a second system. They told us that using CHCS was slow and cumbersome, and ordering the medications using it took too much time.[30] A VA provider in Hawaii told us that, for these same reasons, providers sometimes handwrote prescriptions for dual eligibles to have filled at the DOD pharmacy when only one or two medications were being ordered.

Finally, although VA patients benefit when providers electronically order medications in VA hospitals, they generally lose this benefit when referred to DOD hospitals. Providers in VA hospitals have electronic ordering capability for inpatient medications, but this capability is not generally

[29]Dual eligibles face a similar situation when they use VA providers but have their prescriptions filled by DOD or vice-versa.

[30]In a demonstration of CHCS and CPRS, we observed that CPRS was more user-friendly. Navigating the system was easier because, unlike CHCS, which requires most commands to be typed in, most CPRS commands are selected with a mouse.

available in DOD hospitals. VA patients referred to DOD hospitals, like DOD's own beneficiaries, usually have their prescriptions handwritten by the provider, and then manually entered into CHCS by pharmacy personnel. Thus, these patients are subjected to the risks associated with handwritten prescriptions, such as illegible orders and transcription errors.

Incomplete Record of Patient Medications Hinders Automatic Checks for Drug Interactions and Allergies

Shared patients also do not get the full benefit of VA's and DOD's automatic checks for drug allergies and interactions. VA and DOD patients who receive all their medications through only one health care system will have comprehensive medication histories stored in either CPRS or CHCS (in conjunction with PDTS). When the medication is ordered, CPRS or CHCS/PDTS will perform automatic checks for drug allergies and interactions. However, if patients are taking medications obtained from both agencies, neither agency's record of patient medications is complete at any joint venture site. Thus, when interaction checks are done, they will be incomplete for shared patients because the checks are restricted to the information available within each system. Likewise, providers may be unaware of drug allergies. For example, when a patient who routinely gets health care at the VA clinic in El Paso is referred to the Army Medical Center for outpatient specialty care, the DOD pharmacy will fill a prescription for up to 30 days of medications. However, when the pharmacy performs its automatic checks, drug allergies may not be detected because information on drug allergies is likely to be in VA's CPRS where the bulk of the patient's clinical information is stored, not in CHCS/PDTS where the drug check will occur. In its interim report, the President's Task Force to Improve Health Care Delivery for Our Nation's Veterans stated that the instances of adverse drug events might be substantially reduced for shared patients through use of a comprehensive screening tool like PDTS and plans further analysis in this area for its final report.[31]

Uncoordinated Formulary Systems Also Introduce Risks

Because VA and DOD each has its own formulary system, providers who treat referred patients sometimes prescribe from the referring agency's formulary and sometimes from their own facility's formulary, depending on where the prescription will be filled. Unless the prescribed drug is

[31] *President's Task Force To Improve Health Care Delivery For Our Nation's Veterans Interim Report*, July 2002.

common to both formularies, each situation limits the medication safety benefits of a formulary system, such as increased provider familiarity with drugs prescribed and the added safety net provided by clinical decision support. The President's Task Force to Improve Health Care Delivery for Our Nation's Veterans noted that a joint VA/DOD formulary could combine the clinical expertise of both VA and DOD and improve patient safety.

Providers who use the other agency's formulary in prescribing for shared patients and find that the drug they would normally prescribe is not listed are disadvantaged in several ways. First, according to formulary system principles endorsed by the American Medical Association, ASHP, and others, one characteristic of a formulary system should be that the pharmacy and therapeutics committee educates providers about drugs on the formulary. A senior official from ISMP told us that provider drug knowledge is also reinforced by a formulary system because formularies limit the number of drugs providers need to be knowledgeable about. Consequently, providers should be less likely to make mistakes in drug selection or dosage when prescribing formulary drugs. Second, when prescribing a drug that is not on their formulary, providers may lose the clinical support capabilities that may be built into their agency's CPOE system. For example, the medication error prevention committee at Tripler in Hawaii evaluates Tripler's formulary drugs for safety problems and designs safeguards into CHCS, such as distinctive lettering to alert providers to drug names that look alike or sound alike. However, DOD providers typically try to prescribe for VA outpatients using VA's formulary. Consequently, this safeguard is lost to the shared patient.

Providers usually prescribe from their own facility's formulary for a referred patient if the prescription is to be filled at their facility's pharmacy. For instance, at all joint venture sites, referred inpatients receive short-term supplies of discharge medications at the host facility's pharmacy. If patients need longer-term supplies of medications or refills, they typically are expected to return to their home pharmacy. This situation can also put patients at risk if the original medication is not on the formulary at their home pharmacy. For instance, in Key West, VA physicians write VA patients two different prescriptions: one for their initial supply to be filled at the joint venture's DOD pharmacy and a second for a longer-term supply that is mailed from the VA Medical Center in Miami. One VA physician told us that when a VA formulary drug he wants to prescribe is not on the DOD formulary, he prescribes an equivalent drug carried by the DOD pharmacy for the short term and orders the VA formulary drug from Miami to use on a long-term basis. Experts agree that such interchanging of drugs in a therapeutic class may

sometimes cause problems because differences in individual physiology make some people react differently to a very similar therapeutic agent. Although such interchange is an accepted practice in formulary systems, when physicians are able to avoid switching drugs, they reduce the risk that an adverse reaction will occur.

Safety Gaps Remain Despite Efforts to Address Them

Recognizing these risks for shared patients, joint venture facilities have undertaken efforts intended to address these safety gaps. However, none of these efforts fully solve the problems that exist, nor are they all used at any site.

All joint venture sites have taken steps to increase access to patient information. For example, at Tripler in Hawaii, VA and DOD recently added VA's CPRS to computers in the DOD hospital so that VA physicians monitoring the care of VA inpatients would have electronic access to patients' VA health records. However, at the time of our visit, most DOD physicians were unaware that the capability to access CPRS existed, and DOD officials at Tripler had no plans to promote its use or to provide training. Similarly, some physicians at all other joint ventures have access to both systems; but, as in Hawaii, this access is generally limited in the number of computers that have this capability and the number of providers who have been authorized to use it. For instance, access to both systems is available at some locations in the Mike O'Callaghan Federal Hospital in Nevada, but VA pharmacy officials at the VA outpatient clinic in this joint venture told us that the lack of such access in the clinic presented a major problem. They told us that not having access to such patient information as test results and physician notes made it difficult for them to research questions about patients' medications. Only two sites have pharmacies with access to the other agency's patient information system; access is very limited at one of those sites—at Tripler, only one pharmacist has been authorized to use CPRS. Furthermore, medical personnel who had access told us that its use is hindered by their lack of familiarity with the other agency's system and by the difficulties of accessing separate, dissimilar systems.

Recognizing the increased risks associated with handwriting prescriptions rather than using CPOE, two joint venture sites have devised ways to minimize this risk for shared patients. In Hawaii, VA providers have worked out an agreement with the DOD pharmacy that they will provide dual beneficiaries a computer-printed copy of the electronic order, called an "action profile," which the pharmacy will accept in lieu of a handwritten order. In Hawaii—at the time of our visit—and northern

California, a printer for DOD's CHCS had been installed in the VA pharmacy so that medication orders from DOD providers could be printed out in the VA pharmacy. VA pharmacy personnel then re-enter orders into CPRS to dispense the medications. While these efforts remove the potential for misreading handwritten prescriptions, they fall short of the full benefits of electronic ordering and filling because re-entering information into CPRS introduces the potential for transcription errors. In August 2002, information technology personnel in Hawaii implemented an electronic link that allows outpatient medication orders entered into CHCS for VA patients to be transmitted directly into CPRS, eliminating the need for manual re-entry in the VA pharmacy. Officials involved in the Hawaii project told us that this link is working well and that this technology was developed with the intent of transferring it to other sites. They also told us that the project was developed with the ultimate intent of two-way—or bi-directional—communications, so that with some additional modification a link could be established allowing VA physicians to send CPRS medication orders to CHCS at Tripler for processing and filling.

Three joint venture sites have taken steps to compensate for problems associated with drug interaction checks for shared patients. For example, VA physicians in Hawaii told us that when they provide prescriptions for dual eligibles to be filled at DOD's pharmacy, they also enter them into VA's CPRS and mark them "hold" so that they will not be dispensed by the VA pharmacy. Thus, checks for interactions with other drugs prescribed by VA can be performed by CPRS, and the patients' medication information will be updated to reflect the medication orders. In Texas, VA adds information to CPRS about care and medications provided to referred patients by DOD physicians. This information is recorded in a special section of CPRS. When VA physicians subsequently access patients' records, CPRS alerts them that new information has been added to this section of the record, but the information is not included in automatic drug checks. The VA clinic in Anchorage, Alaska, uses a different approach to address the problem of incomplete medication records. Officials there told us they have developed software to supplement information in the CPRS record by capturing and displaying information about drugs obtained from DOD and other non-VA sources, including herbal supplements and over-the-counter drugs. Thus, providers and pharmacists have additional information that might help them prevent adverse drug interactions. However, information collected in this way may not be accurate or complete because it depends on patient recall and is entered manually. In addition, this information is not accessed by CPRS's

automatic drug checks because it is a supplement to, not a part of, the CPRS record.

Finally, five joint ventures have instituted practices to address safety problems related to separate formularies. For example, the Mike O'Callaghan Federal Hospital at Nellis Air Force Base in Nevada has a combined P&T committee that includes both VA and DOD representatives who select the medications that will be included on the hospital's inpatient formulary. In addition, the committee approved nearly 50 VA formulary medications to be stocked in the hospital pharmacy for use by VA inpatients at this facility. All measures taken to improve medication safety, such as entering reminders or alerts into CHCS to safeguard against medication mistakes, also apply to VA drugs stocked in the pharmacy. Other sites have undertaken less comprehensive measures to address problems arising from separate formularies. For instance, pharmacies at two sites stock drugs commonly prescribed for the other agency's patients, but neither host agency's P&T committee has representatives from both agencies. At two other sites, representatives from both agencies are on the host agency's P&T committee. While these efforts are helpful in overcoming difficulties associated with separate formularies, none is a complete solution.

Conclusions

As VA and DOD strive to improve efficiency and access to care through greater collaboration and sharing of resources, it is likely that the number of patients who receive care from both systems will increase. Consequently, the safety of shared patients merits continuing concern. While our findings are based on the joint venture sites, they may have relevance wherever patient care is shared between VA and DOD.

Some joint ventures have taken steps to address medication safety problems for shared patients, but these steps are partial solutions and gaps remain. For example, facilities have provided only limited access to the other agency's patient medical information system and have not always provided training in its use. Therefore, providers do not have adequate access to patient medical information for shared patients, and lacking the comprehensive capability afforded by a system like PDTS, they can perform only incomplete checks for drug interactions and allergies. In addition, when shared patients return to their home agency to have prescriptions filled, providers give them handwritten or computer-printed prescriptions, rather than electronically ordering medications, creating risk for legibility or transcription errors. Furthermore, separate P&T committees may be unable to effectively overcome problems that arise

from separate formularies. The measures already taken by some joint ventures show that risks that shared patients face can be addressed. VA and DOD could develop systemwide rather than local solutions to address the needs of shared patients nationally as well as at the joint venture sites.

Recommendations For Executive Action

To better protect shared patients at the joint ventures, we recommend that the Secretary of Veterans Affairs direct the Under Secretary for Health and that the Secretary of Defense direct the Assistant Secretary of Defense for Health Affairs to

- develop the capability for VA and DOD providers to access patient medical information relevant to medication decision making, regardless of whether that information resides in VA's or DOD's information system and provide training to physicians and pharmacists who need to use this access;
- develop the capability to perform a comprehensive, automatic drug interaction check that uses medication information from all VA and DOD facilities and mail order operations and DOD's network pharmacies, and evaluate the potential for DOD's PDTS to be used for this purpose;
- require providers to use computerized order entry of medications for shared patients where it is available and implement system modifications that will enable providers to electronically order medications to be dispensed at the other agency's pharmacies; and
- establish a joint VA and DOD pharmacy and therapeutics committee, or similar working group, at each joint venture site to determine how best to safely meet the medication needs of VA and DOD shared patients and to overcome obstacles associated with separate formularies.

Agency Comments and Our Evaluation

The Department of Veterans Affairs and the Department of Defense provided written comments on a draft of this report. These comments are discussed below and reprinted in appendix I and appendix II, respectively. VA concurred with all our recommendations, while DOD concurred with two of our recommendations, partially concurred with one, and did not concur with one.

Both VA and DOD concurred with our recommendation to develop the capability for VA and DOD providers to access patient medical information in both CPRS and CHCS. In their comments, both agencies discussed longer-term solutions, such as the joint VA-DOD Federal Health

Information Exchange (FHIE) initiative.[32] While we support long-term efforts that would lead toward a more seamless sharing of information between VA and DOD, we believe that a number of joint venture sites have demonstrated that interim steps, such as giving providers access to and training on the other agency's system, are both warranted and feasible.

Both agencies also concurred with our recommendation regarding the development of comprehensive, automatic drug interaction checks, including the evaluation of PDTS for this purpose. VA stated that this capability would be accomplished with the second phase of the VA-DOD joint plan, called Health**e**People (Federal), which VA expects to be implemented in fiscal year 2005. Although agreeing to evaluate the cost benefit of adopting PDTS, VA said that, based on VA and DOD workload data, a relatively small number of veterans had been treated in both systems in the period from October 2001 through May 2002 (240,716 unique patients, or 29.6 percent of all dual eligibles) and raised the issue of whether the cost of PDTS was justified for so few cases. We believe this almost quarter of a million patients represents a significant opportunity for adverse drug events to occur, especially since, based on the prescription patterns of a typical VA patient, this group received an estimated 4 million prescriptions in this 8-month period.[33] Furthermore, the number of patients potentially at risk is larger than the dual eligible group. It includes an unknown number of patients who receive care and medications from both agencies under VA-DOD resource sharing agreements. While we agree that cost is an important factor, we believe the large number of prescriptions for these patients justifies an evaluation of PDTS that considers both cost and patient safety.

[32]The mission of FHIE, formerly known as the Government Computer-Based Patient Record (GCPR) project, is to enable the electronic exchange of selected health information between VA and DOD. Begun in 1998, GCPR was intended to provide for the sharing of clinical patient data among VA, DOD, and the Indian Health Service (IHS). Initial plans for GCPR called for deployment in October 2000, but, as we reported in 2001, the project suffered from expanding time frames and cost estimates and was refocused. For further details see U.S. General Accounting Office, *Computer-Based Patient Records: Better Planning and Oversight by VA, DOD, and IHS Would Enhance Health Data Sharing*, GAO-01-459 (Washington, D.C.: Apr. 30, 2001).

[33]VA filled 100 million prescriptions and treated 3.8 million unique patients in fiscal year 2001 for an average of 26 prescriptions per person for the year.

VA concurred and DOD partially concurred with our recommendation on CPOE. VA said it has already planned for its providers to use computerized order entry for all orders, including medications, by fiscal year 2004. It also made reference to the Hawaii pilot project discussed earlier in this report as a way of extending this capability for shared patients but said that a more robust bi-directional capability would be included as a systems requirement in the Health**e**People (Federal) effort. DOD also agreed to require that providers use CPOE for shared patients where available; however, it did not agree with system modifications as the approach for extending this capability. Instead, DOD advocated the joint procurement of a commercial off-the-shelf pharmacy information system. It said that this approach would provide greater economic returns and system interoperability since both agencies are pursuing plans to upgrade or replace their pharmacy information system modules. We agree with this approach as a longer-term solution. However, agency officials told us that neither agency has plans to upgrade or replace its system until fiscal year 2005 at the earliest, leaving shared patients at continued risk for medication errors until the new system is operational. System modifications already accomplished in Hawaii indicate that interim steps toward reducing these risks are possible.

VA concurred with our recommendation on establishing a joint P&T committee or similar working group at each joint venture site and said it would pursue this recommendation via the VA/DOD Executive Committee, a working group for VA/DOD collaboration issues. DOD did not concur with establishing a joint P&T committee at each site; however, we recommended the establishment of a joint VA-DOD group, either a P&T committee or a similar working group, that would determine how best to safely meet the medication needs of shared patients at each site. DOD expressed support for the already-established working groups, but, as we have noted, only three joint venture sites have such collaborative groups.

We are sending copies of this report to the Secretary of Veterans Affairs, the Secretary of Defense, and other interested parties. Copies will also be made available to others on request. In addition, the report is available at no charge on the GAO Web site at http://www.gao.gov. If you or your staff

have any questions about this report, please contact me at (202) 512-7101. Other contacts and major contributors are listed in appendix III.

Sincerely yours,

Cynthia A. Bascetta
Director, Health Care—Veterans'
Health and Benefits Issues

Appendix I: Comments from the Department of Veterans Affairs

THE SECRETARY OF VETERANS AFFAIRS
WASHINGTON

September 13, 2002

Ms. Cynthia A. Bascetta
Director, Health Care—Veterans'
Health and Benefits Issues
U. S. General Accounting Office
441 G Street, NW
Washington, DC 20548

Dear Ms. Bascetta:

The Department of Veterans Affairs (VA) has reviewed your draft report, ***VA AND DEFENSE HEALTH CARE: Increased Risk of Medication Errors for Shared Patients*** (GAO-02-1017) and agrees with your findings and conclusions and concurs with your recommendations. VA is pleased to report that actions are already underway to implement them through collaborating with the Department of Defense (DOD).

Of paramount importance to VA is continued excellence in providing needed health care to our nations veterans. Part of providing quality health care is the assurance that prescribed medications be safe as well as efficacious. As VA expands its joint ventures with DOD, VA will work closely with its DOD colleagues to assure the continued level of safety to all patients the Department serves as well as the veterans the DOD serves through its health care systems.

Thank you for the opportunity to comment on your draft report.

Sincerely yours,

Anthony J. Principi

Enclosure

Enclosure

THE DEPARTMENT OF VETERANS AFFAIRS
COMMENTS TO GAO DRAFT REPORT,
VA AND DEFENSE HEALTH CARE: Increased Risk of Medication Errors for Shared Patients
(GAO-02-1017)

GAO recommends that I:

- **Develop the capability for VA and DOD providers to access patient medical information relevant to medication decision making, regardless of whether that information resides in VA's or DOD's information system and provide training to physicians and pharmacists who need to use this access;**

Concur - The Departments of Veterans Affairs (VA) and Defense (DOD) have developed a close collaborative partnership, under the titles of the Federal Health Information Exchange (FHIE) and Health**e**People (Federal). Under this partnership, the agencies are exchanging data and developing a common health information infrastructure and architecture comprised of standardized data, communications, security, and high performance health information systems.

VA and DOD are jointly implementing a plan that will result in computerized health record systems that ensure interoperability between DOD's CHCS II (Composite Health Care System) and VA's Health**e**Vet strategy for VistA (Health**e**Vet-VistA) by FY 2005. Using clinical decision support applications, providers of care in both Departments will be able to access and use the relevant medical information to aid them in making medication decisions for their patients regardless of whether that information resides in VA's or DOD's information systems. Because the providers will use the information systems that they use within their own institutions on a routine basis, no significant additional training will be necessary to access this relevant information.

- **Develop the capability to perform a comprehensive, automatic drug interaction check that uses medication information from all VA and DOD facilities and mail order operations and DOD's network pharmacies, including an evaluation of the potential for DOD's Pharmacy Data Transaction Service to be used for this purpose;**

Concur - When the second phase of the joint plan – Health**e**People (Federal) – is implemented in FY 2005, VA and DOD will have the capability to perform comprehensive automatic drug interaction checks using medication information from all VA and DOD facilities and mail order operations and DOD's network pharmacies. This will be possible by providing interdepartmental access, when

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Enclosure

THE DEPARTMENT OF VETERANS AFFAIRS
COMMENTS TO GAO DRAFT REPORT,
VA AND DEFENSE HEALTH CARE: Increased Risk of Medication Errors for Shared Patients
(GAO-02-1017)
(Continued)

appropriate, to medical information residing in the two departmental data repositories.

This interoperability will provide the two Departments the capability to perform checks on drug-drug interactions and duplicate drug class orders that are available in DOD's Pharmacy Data Transaction Service. It will allow the Agencies to perform the clinically important drug allergy and drug adverse event checks as well.

During the interim period before full implementation of the proposed joint health information systems, VA will continue to work closely with DOD in identifying feasible opportunities to maximize mutual access to patient medical information. It should be noted, however, that the cost benefits of any supplemental approach must be carefully considered. Recent information compiled from VA and DOD workload databases identify 240,716 patients (29.6 percent of all dual eligible patients) who received prescriptions from both VA and DOD between October 1, 2001, and May 31, 2002. Of the approximately 3.5 million unique veterans who receive prescription benefits from VA, only 6.8 percent are dual eligible. This represents a relatively small number of veterans treated in both systems, and raises the issue of whether a costly partial solution could be justified for so few cases, especially when there are no data presented to indicate that out-of-line medication errors have been reported for the shared patients. VA will explore the cost benefit of adopting DOD's PDTS. Nevertheless, even in this system, it is possible to correctly prescribe and dispense a drug without being able to access important information about allergies or previous adverse events. Any robust clinical system, such as the proposed DOD Clinical Data Repository and VA Health Data Repository, should have these capabilities.

- **Require providers to use computerized order entry of medications for shared patients where it is available and implement system modifications that will enable providers to electronically order medications to be dispensed at the other agency's pharmacies;**

Concur - VA has already planned for providers to use computerized order entry for all orders including medications by FY 2004.

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THE DEPARTMENT OF VETERANS AFFAIRS
COMMENTS TO GAO DRAFT REPORT,
VA AND DEFENSE HEALTH CARE: Increased Risk of Medication Errors for Shared Patients
(GAO-02-1017)
(Continued)

VA is conducting a pilot project in Honolulu that allows outpatient prescriptions entered at Tripler Army Medical Center to be electronically transferred to the VistA system at Spark Matsunaga VA Medical Center. These orders undergo the same order checks as any other VistA order, and are included for display on the patient's VistA profile. Production testing is underway at these facilities now, and so far the results are very favorable.

A similar but more robust bi-directional capability will be included as a systems requirement in the HealtheePeople (Federal) effort now underway between VA and DOD.

- **Establish a joint VA and DOD pharmacy and therapeutics committee or similar working group at each joint venture site to determine how best to safely meet the medication needs of VA and DOD shared patients and to overcome obstacles associated with separate formularies.**

Concur - VA will pursue this recommendation via the VA/DOD Executive Committee. Since VA has successfully established a comprehensive national formulary system, which includes the VISN formularies as well as the VA National Formulary, VA proposes that VA's national formulary be the model for the joint formulary at each venture site. The formulary could be augmented with DOD-specific medication requirements that can be addressed through a joint local pharmacy and therapeutics committee.

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Appendix II: Comments from the Department of Defense

HEALTH AFFAIRS

THE ASSISTANT SECRETARY OF DEFENSE

WASHINGTON, D. C 20301-1200

SEP 17 2002

Ms. Cynthia A. Bascetta
Director, Health Care-Veterans' Health and Benefits Issues
U. S. General Accounting Office
Washington, DC 20546

Dear Ms. Bascetta:

This is the Department of Defense (DoD) response to the General Accounting Office (GAO) draft report GAO-02-1017, "VA AND DEFENSE HEALTH CARE: Increased Risk of Medication Errors for Shared Patients," dated August 19, 2002 (GAO Code 290163).

GAO Recommendation: To better protect shared patients at the joint venture sites, develop the capability for Veterans Affairs (VA) and DoD providers to access patient medical information relevant to medication decision making, regardless of whether that information resides in VA's or DoD's information system and provide training to physicians and pharmacists who need to use this access.

DoD Response: The Department concurs with the recommendation. Initiatives such as the Federal Health Information Exchange (FHIE) are already providing various patient health data to the VA. This is scheduled to include pharmacy data by 2nd Quarter Fiscal Year 2003. For the long-term, DoD and VA are working to establish interoperability between their respective electronic health information systems to further enhance the exchange of patient health information thereby improving the effectiveness of the health care delivery at joint venture sites. Before this can be implemented, issues such as credentialing, privileging, reimbursement for goods and services, security (including background checks on personnel), and Health Insurance Portability & Accountability Act (HIPAA) privacy requirements must be addressed.

GAO Recommendation: Develop the capability to perform a comprehensive, automatic drug interaction check that uses medication information from all VA and DoD facilities and mail order operations and DoD's network pharmacies, including an evaluation of the potential for DoD's Pharmacy Data Transaction Service to be used for this purpose.

DoD Response: The Department concurs with both aspects of the recommendation at joint venture sites, i.e., to develop an automatic interaction check to include information from all VA and DoD dispensing facilities, mail order operations, and DoD's retail network pharmacies; and, concur with an evaluation of the potential for the VA to use DoD's Pharmacy Data Transaction service for this purpose.

GAO Recommendation: Require providers to use computerized order entry of medications for shared patients where it is available and implement system modifications that will enable providers to electronically order medications to be dispensed at the other agency's pharmacies.

DoD Response: The Department concurs with the recommendation to require all DoD/VA providers to use computerized order entry (CPOE) for medications for shared patients where CPOE is available. However, the Department non-concurs with the recommendation to implement systems modifications as the approach for resolution of accepting CPOE medication requests by each Department. It is the Department's opinion that such an approach would waste resources and falls short of providing total interoperability of both agencies' pharmacy operations. Since both Departments are pursuing upgrades or replacements to their respective Pharmacy information system modules, a joint procurement strategy for a commercial off-the-shelf (COTS) pharmacy information system provides greater economic returns and total interoperability independent of whichever CPOE system is used to transmit the medication order.

GAO Recommendation: Establish a joint VA and DoD pharmacy and therapeutics committee, or similar working group, at each joint venture site to determine how best to safely meet the medication needs of VA and DoD shared patients and to overcome obstacles associated with separate formularies.

DoD Response: The Department non-concurs with establishing joint VA and DoD pharmacy and therapeutics committees at each site, since VA formulary management is controlled at the VISN and National level, and DoD is in the process of implementing the provisions of 10 U.S.C. 1074g that directs the Department to implement a Uniform Formulary. The Department does concur with the recommendation to continue the established working groups at each joint venture site to continue exploring collaborative opportunities that ensure the appropriate and safe use of medications for VA and DoD shared patients and to overcome obstacles associated with each Department maintaining separate formularies.

My point of contact on this action is Colonel William Davies, at (703) 681-0039.

Sincerely,

William Winkenwerder, Jr., MD

Appendix III: GAO Contacts and Staff Acknowledgments

GAO Contacts

Deborah L. Edwards, (202) 512-7101
Keith E. Steck, (202) 512-9166

Acknowledgments

In addition to those named above, the following staff members made key contributions to this report: Irene J. Barnett, Linda Diggs, Mary W. Reich, Karen Sloan, and Thomas Walke.

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