

Literature Review: Selected Topics Related to Veterans' Disability Compensation

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Executive Summary

The Veterans Disability Benefits Commission (VDBC) has asked the CNA Corporation (CNAC) to assist it with a review of the disability benefits programs for disabled veterans and survivors. The primary goal is to examine the structure of the compensation program for disabled veterans to determine how well it is meeting the congressional intent to compensate disabled veterans for the average lost earnings capacity attributable to their service-connected disabilities. This literature review will inform analyses on a number of research questions identified by the VDBC and interested stakeholders. The review is not intended to cover all of the research questions in depth, but rather to focus most closely on providing information for those research topics that are least amenable to analytical methods using primary and secondary data sources.

Approach

Our approach is to provide a literature review of the quantitative and qualitative analyses of the impact of disabilities on earnings and quality of life. Within this overall strategy, we also examine a variety of unique issues that pertain to service-disabled veterans and their survivors. This will allow us to draw on our literature review to inform many of the VDBC's research questions regarding the impact that structural changes to the compensation program might have (e.g., offering a lump sum option, indexing some benefits that are currently fixed). Additionally, we will draw on this literature review to enhance our quantitative analyses of the impact of disabilities on earnings and quality of life.

Search methodology

To identify relevant citations, we used a variety of academic search engines. Additionally, we searched reports from key government agencies (e.g., the Department of Veterans Affairs (VA), Congressional Research Office, Health and Human Services) and leading analysis organizations as well as applicable Web sites. We

obtained programmatic and administrative details from government agency Web sites and a compilation of documents provided by VDBC and VA officials. Finally, we obtained relevant textbooks on the topics of disabilities (e.g., the Handbook of Disabilities, 2001). In specific, we searched the following key databases:

PubMed / Medline: A service of the National Library of Medicine, PubMed includes over 14 million citations for biomedical articles back to the 1950s. These citations are from Medline and additional life science journals. Medline contains nearly 11 million records from over 7,300 different publications from 1965 to today and is updated weekly.

HealthSTAR: This database contains citations to the published literature on health services, technology, administration, and research from 1975 to present. It focuses on both the clinical and non-clinical aspects of healthcare delivery.

JSTOR: This archive holds the complete digitized back runs of core scholarly journals. New titles and disciplines are being added regularly. Articles drawn from JSTOR are generally oriented to research in the social sciences.

CNAC Unclassified Document Search: This database provides access to unclassified technical reports generated by CNAC from the 1940s to present. The database also contains documents received from external organizations, such as RAND and the Department of Defense.

We also searched the Internet sites of many agencies and organizations, including the following:

- Agency for Health Quality Research (AHQR) <www.ahrg.gov>
- Department of Veterans Affairs, Office of Policy, Planning and Preparedness
<www.va.gov/OPP/organizations/progeval.htm>
- Congressional Budget Office <www.cbo.org>
- Government Accountability Office <www.gao.gov>
- Social Security Administration <www.ssa.gov>

- Bureau of Labor Statistics <www.bls.gov>
- Institute of Medicine (IOM) <www.iom.edu>
- National Bureau of Economic Research <www.nber.org>
- RAND <www.RAND.org>
- Urban Institute <www.urban.org>
- World Bank <<http://www.worldbank.org>>
- Organization for Economic Co-operation and Development <www.oecd.org>
- Government of Canada, Disability Policy Program bibliography Web site <www.sdc.gc.ca>
- Australian Centre on Quality of Life Web site <www.acqol.deakin.edu.au>
- Google Scholar <www.scholar.google.com>

Selection of topic areas

After examining the range of the VDBC's research questions, we organized our literature review into seven broad topics:

- Description of disability programs
- Disability and earnings literature
- Disincentives to work
- Disincentives to undergo therapy
- Impact of benefit on recruitment and retention
- Quality of life
- Lump sum option issues

We constructed a database of articles, reports, and books and entered information relevant to each topic, such as a summary of each document, a description of the program incentive or issue being examined, the data sources used for the study, and the estimated impact, as appropriate.

When possible, our searches were directed narrowly toward specific VDBC-identified research questions. For example, we conducted the search on the impact of disabilities on earnings narrowly because there is a significant amount of research in this area. In contrast, we found it necessary to expand our search criteria for some topics because we did not find much information available. There is very little literature that directly examines the impact of VA disability benefits on recruitment and retention, so for this topic we expanded our search to include documents examining the impact of post-separation benefits more generally. We also broadened our search criteria for our examination of the lump sum disability benefit option to draw on the literature examining the impact of demographic factors on the likelihood that an individual would accept a lump sum payment.

Brief overview of topic areas and key findings

We begin our literature review by describing the VA's disability compensation program. We also compare the VA's disability program to other government disability programs (federal and state), private disability programs, and disability programs in other western industrialized countries (focusing on veterans disability programs). Most of the government disability comparisons deal with the social security disability insurance program. In considering disability programs in other western industrialized countries, we found that several OECD countries make lump sum offers for part of their benefit package. The lump sum benefits offered often accrue to survivors and to veterans with low disability ratings. In addition, some of these countries have a more restrictive definition of service-connect disability than is true in the U.S. (e.g., the United Kingdom, Germany). The types of comparisons in this section include comparisons of costs of administration, eligibility, benefits, and satisfaction with the program.

Our next topic is the relationship between disability and earnings. In this section we focus on understanding how disabilities impact the labor productivity of individuals and how this lost labor productivity is valued in the market. A review of this literature leads us to a number of conclusions. First, disabled individuals tend to have low incomes. Second, the current VA disability benefits formula may not reflect the impact of technological change over

time on the labor market productivity of disabled individuals. The impact of technological change in our economy has resulted in a de-emphasis of physical ability and an emphasis on education in determining labor market productivity. The strong association observed between psychological disabilities and earning potential described in the literature is one illustration of the importance of this change.

Next we address the potential impact that the VA's disability program might have on disincentives to work. Unlike many other disability programs, the VA disability benefits are generally not limited if an individual is gainfully employed. Therefore, the major impact that the VA's disability program might have on the disincentive to work is through increasing the unearned income of veterans. We found numerous studies indicating that increases in income tend to result in a reduced incentive to work. These studies are largely based on evaluations of work incentives for segments of the non-disabled civilian population. None of the estimates were directly based on evidence from the work patterns of disabled veterans.

We also examine how program structure may influence the incentives to undergo therapy. There are some indications that, as compared to therapy financed by private disability programs, VA programs could be more oriented to vocational rehabilitation and to providing more incentives to return to work. The literature suggests that VA programs may not as effective as private programs are at implementing vocational rehabilitation processes. If VA programs are ineffective with respect to the vocational rehabilitation process, this may provide a significant disincentive to seek out and undergo therapy. In private programs, there is a strong focus designed to retrain individuals and get them back in the workforce as soon as possible, whether in a job related to their old employment or in a new work capacity.

Next we examine how the VA compensation program may be affecting recruitment and retention. The literature in this area tends to focus on the role of benefits in general in recruiting and retention issues. We did not find much evidence that directly addressed the concept of how VA compensation programs affect, or

do not affect, recruitment and retention. This is an area that may merit additional study and research.

The next broad topic examines the impact that disability has on individuals' quality of life. This section includes a summary of the literature that examines methodologies applied to measure quality of life. We also provide a catalogue of over 100 articles that measure quality of life for conditions that are common to disabled veterans (see Appendix A). A major finding was that the most common health-related QOL measure used was the SF-36 (35 articles out of 113 applied some variant of the SF-36). This is probably due to the status of this measure as one of the more objective measures of QOL. However, it is important to note that the focus of the SF-36 is on functional QOL measures rather than on perceptions of overall well-being.

Finally, we explore the literature pertinent to offering a lump sum benefit option as a form of disability payment. Because few studies directly examine this question, we have drawn from several studies that inform this question indirectly. We explore the probable influence of demographic factors on the propensity of individuals to accept a lump sum payment option. Our literature review draws on the military's experience in offering lump sum payments in their retirement system and civilian workers' history of acceptance of lump sum payments of accrued retirement accounts at employment separation, as well as a variety of consumer studies.

The literature suggests that younger, less educated, and lower ranking personnel would be more inclined to accept a VA lump sum offer; funds received in lump sum payments are often spent on consumer goods rather than on long-term investments; providing financial information does not have a large impact on the choice of whether or not to accept a lump sum payment; and the higher the settlement the more likely the recipient is to prefer a return over time to a lump sum payment. Additionally, the literature indicates substantial potential savings associated with a lump sum disability settlement both in terms of reduced debt cost and administrative burden. Several OECD countries offer a lump sum option to veterans with low disability ratings. However, several studies point to the fact that additional administrative cost may occur due to veteran's disability status being re-assessed at some future date.

In the next 7 sections of our literature review, we address each major topic in turn, exploring the issues and evidence we have found. For each topic, we provide a summarization of the main findings in the literature and identify any gaps in information. We also provide an annotated bibliography of our citations that contains a brief abstract of each source document. In the citations sections, our abstracts were drawn heavily from the authors' own abstracts, when they were available. If authors' abstracts were not available, we summarized the relevant material from the citation. We begin with an overview and discussion of disability compensation programs.

Chapter 1. Compensation programs for disabled persons

We begin our literature review by presenting a comprehensive list of disability programs designed to provide compensation to disabled individuals. We separate U.S. government programs into two broad categories: programs offered to disabled veterans with service-connected disabilities and programs offered by the federal government to those deemed unable to work. We provide general information for each available program. Additionally, we consider the nature of state workers' compensation programs and private disability insurance policies and make comparisons between the various programs. Next we consider and compare the scope and cost of disability compensation programs. Finally, we compare U.S. disability programs with those of other western/industrialized countries.

Department of Veterans Affairs (VA) health and disability compensation programs

This section provides a comprehensive description of health services, disability compensation, and other benefits programs offered to disabled veterans through the VA. Summaries of these benefits, the basis for eligibility, and the range of benefits can also be found in the Economic Systems literature review [1] and in Appendix I of a 1997 GAO report [2], which also includes comparisons of the VA disability program to other disability programs.

Veterans with an honorable or general discharge from active military service are generally eligible to receive VA benefits [3]. Active service means full-time service, other than active duty for training, as a member of the Army, Navy, Air Force, Marine Corps, Coast Guard, or as a commissioned officer of the Public Health Service, the Environmental Science Services Administration or the National Oceanic and Atmospheric Administration, or its

predecessor organization, the Coast and Geodetic Survey. Men and women veterans with similar service are entitled to the same VA benefits. Dishonorable and bad conduct discharges issued by general court martial may preclude a veteran from receiving VA benefits.

Table 1 lists the number of disability compensation or pension payments, by type of payment and age of beneficiary in 1995 and 2005. As exhibited in this table, the total number of veterans receiving disability payments increased by about 18 percent during this period [4]. It is of interest that the number of veterans younger than 65 in the 70 to 100 percent disability category increased by 144 percent between 1995 and 2005.

Table 1. Number of VA disability compensation payments (in 1,000s), by type of payment and age of beneficiary¹

Year	All Total	Service-connected			
		Under age 65		Aged 65 or older	
		Disability rating		Disability rating	
		Less than 70 percent	70-100 percent	Less than 70 percent	70-100 percent
1995	2236	1158	152	819	107
2005	2637	1421	371	677	168
% Change	17.9	22.7	144.1	-17.3	57.0

Veterans Health Administration (VHA) medical services

Perhaps the most visible of all VA benefits and services is healthcare. VHA's healthcare facilities provide a wide range of medical, surgical, and rehabilitative care [5]. Most veterans must enroll to receive healthcare benefits, although veterans with a service-

¹ Source: Report to the Secretary of Veterans' Affairs, "The Vocational Rehabilitation and Employment Program for the 21st Century Veteran," [6].

connected disability of 50 percent or more, and veterans seeking care for a service-related disability are not required to enroll. The enrollment process categorizes veterans by a variety of circumstances (e.g., service connection conditions, health needs, poverty) and assigns them to priority groups or categories 1 through 8. This prioritization assists VHA in managing healthcare services within budgetary constraints and ensuring quality care for those enrolled.

Veterans with service-connected disabilities receive priority access to care for hospitalization and outpatient care (priority groups 1 through 3). Veterans with no service-connected condition and who have income and asset levels above specified levels may enroll in priority group 8, the lowest priority group. However, at times further enrollment into priority group 8 may be frozen due to budgetary considerations.

Veterans Benefit Administration (VBA) programs

The VBA offers a wide range of programs to veterans of military service. The services offered fall under two broad categories: compensation and pension, and benefits programs. We provide a description of the missions and objectives of these programs in the following sections, examining programs designed for service-disabled veterans as well as programs for all veterans [3].

Programs for service-disabled veterans

A number of programs have been designed to assist veterans with a service-connected disability. These include a variety of compensation programs, vocational rehabilitation and employment programs, specially adapted housing, automotive allowances, service disabled veterans insurance, and mortgage life insurance.

Compensation programs

Veterans who are disabled by injury or disease incurred or aggravated during active military service are considered to have a service-connected disability status and are generally eligible to receive disability compensation. The primary mission of the disability compensation program is to provide monthly payments to veterans to compensate for the earnings limitations effects of

disabilities, diseases, or injuries incurred or aggravated during active military service, and to provide access to other VA benefits. The disability compensation program also provides monthly payments, as specified by law, to surviving spouses, dependent children, and dependent parents in recognition of the economic loss caused by the veteran's death during active military service or, subsequent to discharge from military service, as a result of a service-connected disability.

Vocational rehabilitation and employment program

The purpose of the Vocational Rehabilitation and Employment (VR&E) service is to deliver timely, effective vocational rehabilitation services to veterans with service-connected disabilities who have been honorably discharged [6]. The overarching goal is to assist veterans, through these services, to obtain suitable employment consistent with their aptitudes and interests, or to achieve independence in their daily living. VR&E helps veterans with service-connected disabilities to prepare for, find, and keep suitable jobs.

Eligibility is determined through an application process that includes a comprehensive evaluation. A veteran begins the process by meeting with a Vocational Rehabilitation Counselor (VRC). If an employment handicap exists as a result of a service-connected disability, the veteran will be deemed entitled to services. The VRC then works with the veteran to develop a plan to address the veteran's rehabilitation and employment needs. If a veteran is eligible for other services, the VRC helps them locate other resources, possibly through the state, to assist with rehabilitation and employment needs.

Specially adapted housing

The VA provides grant monies to construct specially adapted dwellings or to update existing dwellings to make them accessible to the needs of service-disabled veterans. The goal of the Specially Adapted Housing (SAH) Program is to provide a barrier-free, wheelchair accessible living environment for eligible veterans. VA's programs for specially adapted housing helped about 500 disabled veterans with grants totaling more than \$21 million in 2005.

Automobile allowance

Veterans and service members may qualify for an automobile allowance if they have a service-connected loss or permanent loss of use of one or both hands or feet, or permanent impairment of vision of both eyes to a specified degree.² Veterans and service members entitled to compensation for immobility of one or both knees, or one or both hips, also qualify for adaptive equipment for an automobile. VBA provides a one-time payment of not more than \$11,000 toward the purchase of an automobile or other conveyance. VBA may also pay for adaptive equipment and for repair, replacement, or reinstallation required because of disability, and for the safe operation of a vehicle purchased with VA assistance.

Service Disabled Veterans Insurance program (SDV-I)

VBA operates one of the largest life insurance programs in the world, directly administering six life insurance programs [7]. Established in 1951, the Service-Disabled Veterans Insurance (S-DVI) program was designed to meet the life insurance needs of veterans with service-connected disabilities, who might find difficulty in obtaining standard commercial life insurance policies. S-DVI is available in both permanent and term insurance plans. The maximum face amount of policies issued is \$10,000, and some veterans can qualify for a \$20,000 supplemental policy.

Veterans Mortgage Life Insurance (VMLI)

The VMLI program provides mortgage life insurance to severely disabled veterans who have received a Specially Adapted Housing Grant from VBA. It is designed to pay off home mortgages of severely disabled veterans in the event of their death. The specially adapted housing grant helps a disabled veteran build or modify a home to accommodate his or her disabilities.

VMLI provides up to \$90,000 mortgage life insurance payable to the mortgage holder (i.e., a bank or mortgage lender) in the event of

² If an eligible veteran cannot qualify to operate an automobile, an automobile or other conveyance may still be provided to that person under the circumstances that the automobile or conveyance is to be operated for the eligible veteran by another individual.

the veteran's death. The amount of coverage will equal the amount of the mortgage still owed, but the maximum can never exceed \$90,000.

Programs designed for service-connected disabled and other veterans

Veterans with a service-connected disability are also eligible for programs designed for wider categories of veterans. These include pension programs, home loan assistance, the aid and attendance allowance program, and survivors and dependents educational assistance.

Pension programs

Veterans with low incomes who are permanently and totally disabled (not through a service-connected disability) or age 65 or older may be eligible for monetary support through VBA's pension program. Additionally, spouses, children, and parents of deceased veterans may receive death compensation or pensions from VBA.

The veterans' pension program is designed to provide monthly payments, as specified by law, to low-income veterans who were on active duty during wartime and are permanently and totally disabled as a result of non-service-connected disability, or age 65 or older. The Pension Program also provides monthly payments to low-income surviving spouses and dependent children of deceased wartime veterans.

Home loan assistance

The VA began helping veterans purchase homes in 1944 under the original GI Bill. This program is designed to provide assistance to veterans to help them become homeowners by assisting them in obtaining home loan financing. Through January 2005, about 17.7 million VA home loan guarantees have been issued, with a total value of \$866 billion. In fiscal year 2004, the VA guaranteed 335,788 loans valued at \$44 billion.

Aid and attendance allowance

The VA housebound and aid and attendance allowance applies a disability criterion to provide grants for long-term care benefits.

Veterans and their surviving spouses who are disabled and need long-term care in the community are eligible for this assistance. Instead of providing homemaker person care and support services, the program provides cash grants.³

Survivors and dependents educational assistance

Eligible spouses and children of certain veterans may receive up to 45 months of full-time or equivalent educational benefits. Those eligible for benefits include the children or spouse of:

- A veteran who died or is permanently and totally disabled as a result of a service-connected disability
- A veteran with a service-connected disability who died from any cause while disabled
- A service member missing in action or captured in the line of duty by a hostile force
- A service member who had been forcibly detained or interned in the line of duty.

Cost indexing of VA benefits

Government program benefits are often indexed to reflect changes in inflation so that the value of those benefits does not erode over time. Inflation adjustments are usually limited to adjustment across time for most workman's compensation and retirement programs. On the other hand, cost-of-living adjustments for workers in general are often adjusted for locality. A detailed examination of cost-of-living adjustments is exhibited in Schultze and Mackie [8].

Whereas recipients of retirement benefits are not tied to any one location, employees must live near their workplace. Examples of federal employee wage adjustments that accrue both over time and across regions are the wage adjustment for federal workers and the Basic Allowance for Quarters (BAQ) included in military salary adjustments. Differences in the cost of living across locations are largely driven by differences in housing costs. This is because most

³ In 2001 a single veteran received \$518 per month in addition to the regular pension amount. See Stone, 2001 [26]

other consumed goods are tradable across locations. Thus, market forces dictate that the price differential should be small for the non-house portion of the cost of living.

Because retirees are not tied to any specific location, it seems reasonable to consider the precedent of other workers compensation and retirement programs in regards to inflation adjustments that don't reflect regional cost-of-living adjustments. Another issue to consider is the type of cost-of-living adjustment. Cost-of-living adjustments are usually based on a market basket of consumer goods or prevailing wages and benefits.

An example of a price index commonly used by government programs is the Consumer Price Index (CPI) published by the Bureau of Labor Statistics [9]. The CPI is a measure of the average change in prices over time in a fixed market basket of goods and services. The Bureau of Labor Statistics (BLS) publishes CPIs for two population groups: (1) a CPI for All Urban Consumers (CPI-U), which covers approximately 80 percent of the total population and (2) a CPI for Urban Wage Earners and Clerical Workers (CPI-W), which covers 32 percent of the total population. The CPI-W is designed to reflect the cost-of-living for urban wage earners and therefore reflects the consumption habits of more affluent consumers than does the CPI-U [8].

Both CPI indexes are based on prices of food, clothing, shelter, fuels, transportation fares, charges for doctors' and dentists' services, drugs, and other goods that people buy for day-to-day living. Prices are collected in 85 urban areas across the country and approximately 19,000 retail establishments, including department stores, supermarkets, hospitals, filling stations, and other types of stores and establishments. All taxes directly associated with the purchase and use of items are included in the index [10].

Prices of most commodities and services are collected every month in the five largest geographic areas and every other month in other areas. In calculating the index, price changes for the various items in each location are averaged together with weights that represent their importance in the spending of the appropriate population group. Local data are then combined to obtain a U.S. city average. Separate indexes are also published by size of city, by region of

country, for cross-classifications of regions and population-size classes, and for 29 local areas. Area indexes do not measure differences in the level of prices among cities; they only measure the average change in prices for each area since the base period.

The Social Security Act specifies a formula for determining the cost-of-living adjustment (COLA) for its disability benefits as well as retirement benefits, based on the percentage increase in the CPI-W. Examples of federal programs that are adjusted annually for inflation based on the CPI-U are the food stamp program and all programs whose eligibility and benefits are tied to the federal poverty line. Although not used in the calculation of benefits for federal programs, both the urban wage index and the urban consumer consumption index are available on a regional basis from BLS.

VBA adjusts disability payments as well as payments to surviving family members to reflect changes in the cost of living in the same way as does the Social Security Administration. VBA does not pay locality adjustments on its disability benefits. As described above, the Social Security Administration cost-of-living adjustment is based on the percentage increase in the CPI-W (see Specter [11] for a history for benefit adjustments). Several authors have criticized the CPI-W as well as the CPI-U on the basis that they are likely to overstate the true increase in the cost of living. Another criticism of these indexes is that they do not accurately reflect the cost of living of groups whose benefits are tied to them.

Several authors (see Boskin et al. [9], Jorgenson [10]) have criticized the CPI-W as a pure cost-of-living measure. Most notably, Boskin argues that the treatment of housing costs has resulted in a significant upward bias in the CPI-W (about 1 percentage point). On the other hand, other researchers point to problems associated with applying this wage index to groups whose consumption patterns are not well reflected in the sample of consumer expenditures that are used to construct the index. For example, Jorgenson [10] points out that for elderly people the CPI-W may understate the true cost of living. Jorgenson proposes an econometric method to construct price indexes that reflect the cost of living for specific communities of people. Such an approach

could be applied to construct a special cost-of-living index for disabled veterans.

Another approach to adjusting benefits would be to apply a cost-of-living adjustment that would reflect wage costs. This might make sense for the VA disability compensation program because the overarching mission is to replace lost wages. An example of a wage-based index is the Employment Cost Index (ECI). The ECI is a measure of the change in the cost of labor, free from the influence of employment shifts among different occupations and across and between industries (for more information, see <http://www.bls.gov/news.release/eci.tn.htm>). This index includes changes in wages and salaries and employer costs for employee benefits. This index also captures the value of the wage and non-wage benefits such as health insurance and sick leave.

In summary, the cost-of-living index currently used by the VA (the CPI-W) reflects the cost of living for urban wage earners. As described above, this index has been criticized for exaggerating changes in the cost of living for this group. On the other hand, it has also been criticized for understating the true cost of living for other groups. Finally, since the mission of the VA disability program is to replace lost wages, it might be reasonable to consider applying a cost-of-living index that reflects wages, such as the ECI.

Individual Unemployability (IU)

Veterans who do not meet the criteria for disability compensation at the 100 percent rating may qualify for additional compensation due to their inability to maintain gainful employment as a direct result of a service-connected disability [12]. They may do this by qualifying for the individual unemployability (IU) benefit. IU was developed to cover the situation in which a service-connected disability makes the veteran unemployable, based on particular circumstances faced by the individual. IU takes into account circumstances such as education and past employment history that are unique to the claimant.

Veterans may be eligible for this program if they are unemployable as a result of their service-connected disability. Veterans' regular disability compensation payments can be increased if VA

determines that the veteran is unemployable (not able to engage in substantially gainful employment) because of the service-connected disability. To qualify for unemployability benefits, a veteran must have a single service-connected disability of 60 percent or more or multiple disabilities with a combined rating of 70 percent or more, with at least one of the disabilities rated 40 percent or more. Additionally, VA can waive the minimum ratings requirements and grant unemployability benefits to a veteran with a lower rating; this process is referred to as an extra-schedular rating. Staff at VA's regional offices make virtually all eligibility decisions for disability compensation benefits, including IU benefits.

VA regional offices use nonmedical rating specialists to evaluate veterans' eligibility for these benefits. Upon receipt of an application for compensation benefits, the rating specialist typically refers the veteran to a VA medical center or clinic for an examination. Based on the medical examination and other available information, the rater must first determine which of the veteran's conditions are or are not service-connected. For service-connected conditions, the rater compares the diagnosis with the rating schedule to assign a disability rating.

As described in detail by GAO [13], along with medical records, raters may also obtain other records to evaluate an IU claim. The VA may require veterans to furnish an employment history for the 5-year period preceding the date on which the veteran claims to have become too disabled to work and for the entire time after that date. VA guidance also requires that raters request basic employment information from each employer during the 12-month period prior to the date the veteran last worked. In addition, if the veteran has received services from VA's VR&E program or Social Security disability benefits, the rater may also request and review related information from these organizations.

Once VA grants IU benefits, a veteran may continue to receive the benefits while working if VA determines that the work is only marginal employment rather than substantially gainful employment. Marginal employment exists when a veteran's annual earned income does not exceed the annual poverty threshold for one person as determined by the U.S. Census Bureau—\$9,827 for 2004. Furthermore, if veterans are unable to maintain employment

for 12 continuous months due to their service-connected disabilities, they may retain their IU benefits, regardless of the amount earned.

Generally VA disability compensation benefit eligibility is not impacted by employment. An exception occurs for those veterans who are receiving IU. It is conceivable that these veterans may not pursue employment options during the initial phase of the benefits because to do so would mean they could lose their IU benefit.

Department of Defense programs

The Department of Defense has two programs designed to provide compensation to disabled veterans who have at least 20 years of service [14]. These programs are discussed below.⁴

Concurrent Retirement and Disability Payments (CRDP) program

The CRDP provides a 10-year phase-out of the offset to military retired pay due to receipt of VA disability compensation for members whose combined disability rating is 50-percent or greater. In order to receive this benefit, the service member must be retired under disability provisions and have 20 years of service.

Combat-Related Special Compensation (CRSC)

The CRSC pays added benefits to retirees who receive VA disability compensation for combat-related disabilities and have 20 years of service. Some of the benefits and services for veterans, their dependents, and survivors include service-connected compensation, DIC, non-service-connected pension, burial and accrued benefits, guardianship, and public contact services.

⁴ In addition there are regulations and benefits that apply if the service member has less than 20 years of service. Involuntary separation before 20 years is compensated depending on circumstances. For a separation due to a disability rated less than 30%, the service member receives severance pay equal to 2 months of basic pay per year served. If the disability is rated 30 percent or more, the service member is retired with retirement pay and healthcare benefits, and receives full commissary and exchange access privileges.

Federal employee programs

The following programs are designed to provide monetary compensation to federal employees who are temporarily or permanently disabled. Although these are all federal programs, they determine eligibility and compensation levels in a variety of ways.

Federal Employees Compensation Act (FECA)

FECA (5 U.S.C. 8101-8193) is the workers' compensation law for federal employees. This law authorizes the government to compensate employees when they are temporarily or permanently disabled due to an injury or disease sustained while on the job. Benefits include wage replacement, payment for medical care, and where necessary, medical and vocational rehabilitation assistance in returning to work, and survivors' compensation. FECA receives financing from the Employees' Compensation Fund. Coverage extends to three million federal and postal workers for employment-related injuries and occupational diseases. The program has 12 district offices nationwide.

Federal disability retirement compensation

Federal disability retirement is administered under the Office of Personnel Management (OPM) to provide benefits to Federal employees who are unable to work because of long-term disability [15]. Employees are eligible for cash benefits to compensate for lost wages and may also elect to take a reduction in benefits to provide survivor's benefits. The benefit amount for wage loss is determined by the employee's age, length of service, and highest average salary over 3 years.

Federal Employees Retirement System (FERS)

FERS, the system for all federal workers who began work since 1984, provides disability benefits. Disability payments under FERS are offset by any Social Security disability payments an individual may receive. The FERS disability benefit must be reduced by 100 percent of any Social Security benefit payable for 12 months.

Social Security Administration compensation benefits

SEC. 216. (42 U.S.C. 416) of the Social Security Act defines “disability” as the “inability to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment which can be expected to result in death or has lasted or can be expected to last for a continuous period of not less than 12 months.” The programs outlined below are administered through the Social Security Administration (SSA) to individuals who meet the eligibility criteria set forth by the various programs [16].

Social Security Disability Insurance (SSDI)

SSDI is available to workers who become unable to work because of severe long-term disability. SSDI benefits include cash for lost wages, survivors and dependents’ benefits, eligibility for Medicaid, and vocational rehabilitation services. To be considered eligible, an adult must be disabled, either physically or mentally, and unable to work. There is no requirement that a disabling impairment be job-related, but the worker must have already worked for a minimum number of quarters of substantial employment (credits) to be eligible for SSDI. The number of credits required varies by age.⁵ The amount of the SSDI benefit is based on a formula established under the Social Security Act that is based on the earnings record of the insured worker. Benefits continue until death, until SSA determines that the individual is no longer eligible, or until Social Security retirement benefits begin at the age of 65.

Social Security Supplemental Security Income (SSI)

SSI is managed by SSA and provides financial support to individuals with low income who are 65 years or older, blind, or disabled [17]. The amount of SSI an individual is eligible for is limited by an assessment of the individual’s assets, including real estate, bank accounts, cash, stocks, and bonds. Basic SSI amounts are standard

⁵ Before age 24, qualification for SSDI requires a minimum of 6 credits earned in the 3-year period ending prior to the start of the disability. For those age 24 through 31, qualification requires credit for working half the time between age 21 and the time the individual became disabled. For age 31 or older, the number of required work credits increases to a maximum of 40 credits for those age 62 or older.

although individual states may add money to the basic benefits. SSI is not tied to previous employment or earnings.

State workers' compensation programs

Worker's compensation programs exist in all 50 states as well as the District of Columbia, with each state having the authorization to regulate the program based on state law [2]. The purpose of the program is to provide benefits to employees who suffer from work-related injuries or disease. These benefits can include cash compensation for lost wages or for permanent impairment, payment of medical expenses, and the possibility for vocational rehabilitation. The main criteria for eligibility are a work-related injury or illness or permanent impairment that has resulted in the loss of the person's ability to earn wages; the severity of the injury may also affect the amount and duration of the benefits.

Wage loss compensation is based on a percentage of wages lost because of the injury, whereas permanent impairment compensation is based on a schedule, which in turn is based on a specified percentage of the employee's usual wages. Most compensation programs designated are for a limited amount of time, though the employee may still be eligible to continue to receive compensation if he/she is unable to return to work after the time limit for the schedule of payments has been reached.

Private disability insurance policies

In their 2004 literature review, ESI summarized private disability insurance policies as being broader than workers' compensation programs, but not as broad as the VA disability program. Private insurance policies vary widely and are oftentimes specific to the scope of employment for which the policy is purchased. In other words, workers may have a private policy that protects them should they no longer be able to perform a specific job, regardless of whether they would be able to work in another position. Under private policies, workers are often able to collect disability compensation if their injury was sustained outside the scope of their employment as long as it limits their ability to perform their job requirements. Table 2 exhibits the number of employees covered

by disability insurance by type of insurance in 2003. The number of beneficiaries receiving compensation from private insurance was more than double the number receiving payments from state and federal funds.

Table 2. Workers' compensation benefits, and costs (2003)⁶

Estimated number of workers covered per month (millions)	Benefits paid during year (millions of dollars)							Cost of program as a percentage of covered payroll	Benefits as a percentage of covered payroll
	Total	Type of insurance			Type of benefits				
		Private carriers	State & federal funds	Employers' self-insurance	Medical & hospitalization	Compensation payments			
125.2	54,871	28,716	13,577	12,579	25,608	29,263	1.71	1.16	

Disability compensation program performance

We turn now to a discussion of the similarities and differences between the VA disability compensation program and other disability compensation programs offered to civilian employees. Much of the information contained in this section was derived from the previous literature review [1].

While many articles and reports discuss the effectiveness of the various disability compensation programs, the literature tends to focus on certain themes. The following themes emerged as relevant for this review: comparisons of program management and administration and efficiency (claims processing). These themes are well documented in the literature, and are explored below.

Disability compensation program comparisons

While there are similarities among programs designed to provide compensation and assistance to the disabled, there are many

⁶ Source: SSA's Annual Statistical Supplement, 2005, National Academy of Social Insurance estimates based on data received from state agencies, the Department of Labor, A.M. Best Company, and the National Council on Compensation Insurance

differences as well. Table 3 compares these programs using data collected by ESI [1] and official program handbooks and guides.

The GAO compared the VA's IU program with similar private unemployment insurance program [15]. The report pointed out that the IU program has increased in numbers despite the fact that changes in technology should have resulted in reductions in the number of IU beneficiaries. Furthermore, the report described how private insurance companies had successfully reduced the number of beneficiaries by including incentives to both undergo therapy and return to work.

Table 3. Comparison of disability program missions and benefits offered

Program/Policy	Program Description	Type of Benefits Offered	Target Population/Eligibility Criteria
Veterans Disability Compensation program	To compensate veterans for physical or mental conditions incurred or aggravated during military service resulting in loss of earnings capacity; compensation based on the average economic losses that are expected to result	Cash benefits for service-connected conditions; special monthly compensation for permanent loss or loss of the use of body parts or functions, or procreative organs; survivors' and dependents' benefits; priority eligibility for medical care in VA Medical Centers; vocational rehabilitation, including payment of stipends; allowances for special needs (e.g. clothing and attendants)	Veterans of military service with service-connected disabilities; based on the disability rating; initial eligibility is not contingent on veteran's ability to work, amount earned or earning capacity, or participation in vocational rehabilitation.
Supplemental Security Income (SSI)	Designed to provide benefits to disabled, blind, or aged individuals who have low income and limited resources; recipients are encouraged to return to work	Cash benefits vary based on marital status, income and asset screens, and other resources are considered; most programs are administered through individual states and include Medicaid eligibility with SSI eligibility; candidates are referred to state's vocational rehabilitation agencies	Provides benefits to the blind, people with disabilities, and the aged population with limited income, assets, and resources; recipients are encouraged to return to work; to be considered disabled an adult must be unable to engage in any substantial gainful activity due to a medically determinable physical or mental impairment expected to result in death or to last 12 months or longer

Program/Policy	Program Description	Type of Benefits Offered	Target Population/Eligibility Criteria
Social Security Disability Insurance (SSDI)	This program was designed to insure workers and their dependents against loss of income due to disability; payments are based on individual's lifetime average earnings covered by Social Security; spousal and children's benefits are subject to a family maximum	Cash benefits for wage loss; survivors' and dependents' benefits; eligibility for Medicaid or Medicare continued coverage after receiving SSDI for 24 months; candidates are referred to state vocational rehabilitation agencies	To receive SSDI, disabled adults must have sufficient SSDI-covered earnings history (required credits vary by age); must be covered under Social Security; there is no requirement that a disabling impairment be job related to be considered disabled, an adult must be unable to engage in any substantial gainful activity because of any medically determinable physical or mental impairment that can be expected to last 12 months or longer
Federal workers' compensation under FECA	This program provides benefits to federal employees who sustain work-related injuries or diseases; to limit employers' liabilities to workers' compensation payments; and to return the injured worker to the workforce	Cash benefits for wage loss are offered; scheduled awards (cash payments) for permanent impairments; loss or loss of use of body parts or functions; survivors' and dependents' benefits; payment of medical expenses for work-related injuries or illnesses; vocational rehabilitation; allowances for special needs, such as payment of an attendant	For cash benefits related to wage loss, the worker must have lost wages because of a work-related illness or injury; DOL determines whether vocational rehabilitation is required; to receive benefits for permanent impairment, the worker must have lost use of certain body parts or functions due to a work-related injury; workers may be eligible to receive cash benefits for both wage loss and permanent impairment for the same injury but not concurrently
Workers' compensation programs	Cash payments, rehabilitation services, and medical benefits provided by employers to workers who suffer work-related injuries or diseases and to their survivors (in case of fatality)	Cash benefits for wage loss; cash benefits for permanent impairments (schedule awards) for permanent loss or loss of use of body parts or functions; offers survivors and (in some programs) dependents benefits; payment of medical expenses for work-related injuries or illnesses; vocational rehabilitation	People who suffer work-related injuries and diseases or their survivors

Comparisons of program cost

Compensation levels vary according to differing sets of parameters. For example, under the Veteran disability program, benefits vary by disability rating and number of dependents. Social Security Disability benefits vary depending on past wages [18]. Costs (unless otherwise stated, these costs include the cost of benefits and administrative costs), basis for compensation, compensation limits, number of participants, and funding source are compared for the purpose of this analysis [18]. Table 4 depicts the differences across programs based on these categories.

Table 4. Comparison of disability program costs (data is from 2002 unless otherwise noted)

Program	Costs	Basis for Compensation	Compensation Limits	Number of Participants	Funding Source
Veterans Disability Compensation program	Data available for those <65: \$8.3 billion	Based on disability rating assigned to the veteran's specific condition through application of VA's Schedule Rating Disabilities	No limit on the total dollar amount or time period over which veterans can receive compensation	Data available those for < 65: 1.3 million	Federal
SSA Supplemental Security Income (SSI)	Federal blind and disabled (all): \$25.0 billion (in 2005); state blind and disabled: \$3.0 billion	Amount of SSI benefit is determined by using the formula established under the Social Security Act	Benefits continue until death or SSA determines that the individual is no longer eligible for SSI; many states provide a supplement to the federal portion	Federal blind and disabled: 3.8 million people age 18-64	Federal and state fund supplement
SSA Social Security Disability Insurance (SSDI)	Benefits (excluding admin. costs): \$6.1 billion (\$938 monthly average); dependents: \$.5 billion	The amount of SSDI awarded to an individual beneficiary is determined from a formula established under the Social Security Act	Benefits continue until death; or SSA determines that the individual is no longer eligible for SSDI or until benefits are converted to Social Security retirement benefits at age 65	Disabled workers 6.5 million; 1.8 million children, 0.2 million spouses (in 2005)	Federal payroll taxes

Program	Costs	Basis for Compensation	Compensation Limits	Number of Participants	Funding Source
Federal Employees Compensation Act (FECA); the Office of Workers' Compensation Programs (OWCP) at the Department of Labor Manages FECA.	\$212 million for 2005, \$234 million budgeted for 2006 (FY 2007 Presidential Budget, Office of Management and Budget)	For wage loss, amount is based on a percentage (usually 66-2/3% without dependents) of the actual wages lost by the individual worker as a result of the work-related injury or illness	For wage loss, benefits can be paid for the duration of the disability; for permanent impairments (schedule awards), limits are placed on the maximum length of time benefits are payable and the total amount payable; workers may be eligible for wage loss benefits if they are still unable to work after the schedule award ends	Data not available online	Federal
Workers compensation programs	Cash: \$25.9 billion; medical: \$20.0 billion	For wage loss, amount is based on a percentage (usually 66-2/3% without dependents) of the actual wages lost by the individual worker as a result of the work-related injury or illness. For permanent impairments (schedule awards), amount is based on a percentage (usually 66-2/3% without dependents) of the worker's usual wages	For wage loss, benefits can be paid for the duration of the wage loss, but many states limit the maximum weekly compensation amounts. For permanent impairments (schedule awards), limits are placed on the maximum length of time benefits are payable and the total amount payable. Workers may be eligible for wage loss benefits if they are still unable to work after the schedule award payments are exhausted	No national beneficiary estimate; 126.6 million covered workers	Employer premiums (some self-insure)

Comparisons of U.S. disability programs with those of other western/industrialized countries

In conducting an analysis of the efficacy of government programming, it is appropriate to include a cross-cultural analysis to obtain external points of comparison. Although this is an important step in conducting a comprehensive analysis, the literature in this regard is not plentiful. Pertinent articles that discuss and analyze disability policies, including a description of the general approach, benefit levels, rehabilitation incentives, and economic cost-benefit considerations in select European jurisdictions are provided at the end of this section.

The most relevant study is a GAO report that directly compared veteran disabilities programs across nations [19]. The report is quite comprehensive in terms of programmatic comparisons. The report is slightly dated in that the analysis was generally drawn from 1990 data. Countries included in this comparison were the United States, Canada, United Kingdom, Australia, Finland, and Germany. The study provides the following programmatic comparisons:

- Availability of specific programs for disabled veterans
- Differences in range of disabilities covered
- Compensation reduction features for needs-based veterans programs
- Specific programs available to survivors of disabled veterans
- Methods of computing military disability retirement survivor benefits
- Differences among countries in the relationship of disability to military service
- Compensation for disabilities in 12 hypothetical cases

The study found that the VA's definition of service connection is more lenient than it is for veterans in other countries such as Germany, Italy, and the United Kingdom. Under the VA's definition, the disease or injury need not be incurred during a veteran's military tour of duty; it can be considered service-connected if a condition that was apparent prior to a military tour

of duty was subsequently aggravated by service. Almost all of the countries studied had stricter definitions of service-connected disability; typically the disability must be connected to military duties. Examples include: the United Kingdom, where disability must be directly connected to military duties; Finland, where, besides the military duty connection to disability, the injury must occur in a location set aside for performing military duties; and Germany, where a causal relationship is required between the military service and disability.

Additionally, we reviewed articles that compare non-veteran OECD disability programs:

- Notably a comprehensive comparison of disability programs in the Netherlands, Germany, Sweden, and the United Kingdom can be found in Aarts [20].
- Self-reported work disability is analyzed in the U.S., the UK, and the Netherlands in Banks et al. [21].
- Alonso et al. [22] compare quality of life of disabled people in Belgium, France, Germany, Italy, the Netherlands, and Spain.
- Sims [23] summarizes testimony GAO on lessons that could be learned by the United States from other OECD countries' disability programs. The study adds more information to the GAO studies in regards to Germany and Sweden.
- Hvinden [24] compares disability policy in OECD countries and reports that policies are becoming more similar across time.
- Prinz [25] provides an overview of disability policies in OCED countries. Included in this study are tables describing the typical income and benefits of disabled people cross nationally.

Some countries are in the process of making changes to their veterans disability programs, including Great Britain and Canada. In some cases, the benefits are divided into one continuing payment for loss of earnings varied by severity of disability and a lump sum payment for quality of life impact also dependent upon severity. In Great Britain the Armed Forces Compensation Scheme (AFCS) is

being phased in to replace the current Armed Forces Pension Scheme. The AFCS may provide a lump sum payment for pain and suffering, compensation for lost earnings capacity, and income for family members in the event that the veteran dies (<http://www.mod.uk/DefenceInternet/AboutDefence/Issues/Pensions/AfcsYourCompensationSchemeExplained.htm>). Canada has a plan to offer a lump-sum payment of up to \$250,000, pro-rated by level of disability, in place of a monthly pension (http://www.ctv.ca/servlet/ArticleNews/story/CTVNews/20060401/vets_benefits_060401/20060401?hub=Canada).

Literature reviewed

Below, we provide summaries of the literature that describes the disability benefits and compensation offered through the VA compensation program, the federal government, state programs, and private insurers. We provide an annotated bibliography of our citations for the description of disability programs, containing a brief abstract of each individual source document. These abstracts were drawn heavily from the authors' own abstracts, when they were available. If authors' abstracts were not available, we summarized the relevant material.

Cited literature

[1] Economic Systems Inc., *VA Disability Compensation Program Literature Review, December 2004*

This comprehensive literature review was completed at the request of the Department of Veterans Affairs' Office of Policy, Planning, and Preparedness in an effort to create a compendium of key studies and other documents relevant to the VA Disability Compensation Program. The majority of the studies presented in this review address the effectiveness of the VA disability compensation programs; however, they do not address the efficiency of the programs. Our literature review borrows heavily on the research gathered in this review and provides further analysis of studies designed to address the efficiency of disability programs at the federal, state, and local levels.

[2] U.S. Government Accountability Office, VA Disability Compensation: Comparison of VA Benefits With Those of Workers' Compensation Programs, GAO Report HEHS-97-5, 1997

This report was prepared at the request of the Chairman of the former Subcommittee on Compensation, Pension, Insurance, and Memorial Affairs. The report compared the criteria used by the VA disability compensation program and federal and state workers' compensation programs; and to determine the compensation individuals with selected work-related injuries and diseases would receive under VA's disability program and under FECA. The authors reviewed program policies, literature, and other data compiled on the VA, federal, state, and District of Columbia programs, in order to determine the difference between criteria used to determine compensation between the programs. The discussion of the federal workers' compensation program in this report refers to FECA only.

[3] Federal Benefits for Veterans and Dependents, Department of Veterans Affairs, Washington, DC

This pamphlet describes federal benefits available to veterans and their dependents as of Jan. 1, 2005. Changes may occur during the year as a result of legislative or other requirements. The Department of Veterans Affairs (VA) World Wide Web pages (<http://www.va.gov>) are updated throughout the year to present the most current information. The VA home page contains links to sections on compensation and pension, healthcare, burial benefits, home loan guarantees, and other programs. It also includes information on how individuals can establish their eligibility for different services.

[4] Social Security Administration. *Annual Statistical Supplement to the Social Security Bulletin*. Washington, D.C.: Social Security Administration, 2005

This annual report provided a comprehensive overview and statistical information regarding the benefits and services managed by the Social Security Administration.

[5] U.S. Government Accountability Office, *VA Disability Benefits and Healthcare: Providing Certain Services to the Seriously Injured Poses Challenges*, GAO-05-444T, Washington, DC, 2005

More than 10,000 U.S. military service members, including members of the National Guard and Reserve, have been injured in conflicts in Afghanistan and Iraq. Those with serious physical and psychological injuries are initially treated at the Department of Defense's (DOD's) major military treatment facilities (MTFs). The VA has made provision of services to these injured service members a high priority. This testimony focuses on the steps the VA has taken and the challenges it faces in providing services to seriously injured individuals and highlights findings from three recent GAO reports that addressed the VA's efforts to provide services to seriously injured service members. These services include vocational rehabilitation and employment (VR&E) and healthcare for those with post-traumatic stress disorder (PTSD). In the three previous reports, GAO made recommendations including that the VA:

- Reach an agreement with DOD on access to data
- Develop policy and procedures to keep contact with seriously injured service members and
- Determine the total number of veterans receiving PTSD services.

VA and DOD generally concurred with GAO's recommendations.

[6] Report to the Secretary of Veterans' Affairs: The Vocational Rehabilitation and Employment Program for the 21st Century Veteran

This report presents results of an independent examination, evaluation, and analysis of the VR&E Program. The report makes recommendations aimed at providing veterans with service-connected disabilities information on the opportunities and services that can enable them to obtain and maintain suitable employment.

[7] VA Life Insurance Programs for Veterans and Service Members
[Http://www.insurance.va.gov](http://www.insurance.va.gov)

This site provided information regarding Service-Disabled Veterans Insurance (S-DVI) and Veterans Mortgage Life Insurance (VMLI).

It contained extensive information regarding life insurance programs offered through the Department of Veteran's Affairs.

[8] Schultze, Charles; Mackie, Christopher, "At What Price? Conceptualizing and Measuring Cost-of-Living and Price Indexes," *National Academy Press*, Washington DC, 2002

Material in this book outlined the theory and application of price indexing. The focus of the book was the construction of the Consumer Price Index.

[9] Boskin, Michael, Jorgenson, Dale, "Implications for Overstating Inflation for Indexing Government Programs and Understanding Economic Progress", *The American Economic Review*, Vol. 87, No. 2, *Papers and Proceedings of the Hundred and Fourth Annual Meeting of the American Economic Association*. May 199), pp. 89-93

The article describes an analysis of the validity of the Consumer Price Index. Most notably the analysis suggests that this index overstates increases in the cost-of-living by about one percentage point due to mishandling of the house cost component of the index.

[10] Jorgenson, Dale, "Indexing Government Programs for Changes in the Cost of Living." Mimeograph, Harvard University, Cambridge, MA, 2006

The article examines the validity of the Consumer Price Index as a measure as it relates to subgroups of people. The author concludes that the Consumer Price Index may underestimate true cost-of-living changes for elderly groups. The paper also provides a method to construct cost of living indexes for subgroups of populations. This approach applies an econometric method to perform these adjustments.

[11] Specter, Arlen, "Veterans Compensation Cost-of-Living Adjustment Report." Committee on Veterans' Affairs, U.S. Senate, 2004

This document contains descriptions of a bill that specifies the method used to adjust benefits for the VA Disability Benefit to reflect changes in the cost-of-living. The document specifies that these benefits are to be tied to cost-of-living changes included in the

Consumer Price Index. The document also lists a history of past changes in overall benefit levels.

[12] U.S. Government Accountability Office, *VA Benefits: Other Programs May Provide Lessons for Improving Individual Unemployability Assessments*, GAO/06-207T, Washington, DC, 2005

The VA provides disability compensation to veterans disabled by injuries or diseases that were incurred or aggravated while the veterans were on active military duty. Under Individual Unemployability benefit regulations, a veteran can receive increased compensation at the total disability compensation rate if the VA determines that the veteran is unemployable because of service-connected disabilities. The VA has seen substantial growth of IU benefit awards to veterans over the last 5 years. This study found that the VA's Individual Unemployability decision-making practices lag behind those used in the private sector.

[13] U.S. Government Accountability Office, *Other Programs May Provide Lessons for Improving Individual Unemployability Assessments*, GAO-06-207T, testimony before the Committee on Veterans' Affairs, U.S. Senate

This report provided a detailed description of the VA Individual Unemployability (IU) benefits and compared it to civilian programs. The study documented a large increase in the IU benefit. The Department of Veterans Affairs (VA) provides disability compensation to veterans disabled by injuries or diseases that were incurred or aggravated while on active military duty. Under IU benefit regulations, a veteran can receive increased compensation at the total disability compensation rate if VA determines that the veteran is unemployable because of service-connected disabilities. The study found that VA's Individual Unemployability decision-making practices lag behind those used in the private sector.

[14] Department of Defense, "DOD Programs Addressing the Issue of Concurrent Receipt." Memorandum, Washington D.C., 2004

This memorandum outlined the Department of Defense's programs for combat related compensation.

[15] Office of Personnel Management, *FERS: Information for FERS Annuities*, Washington, DC, 2000

This document provides detailed information regarding the operation, management, and eligibility for the FERS program.

[16] Social Security Administration, *2005 Red Book: A Summary Guide to Employment Support for Individuals with Disabilities Under the Social Security Disability Insurance and Supplemental Security Income Programs*, Washington, DC, 2005

This is a comprehensive guide to the overall program structure, benefits, eligibility, and methods for allocating funds.

[17] Social Security Administration, *Annual Report of the Supplemental Security Income Program*, Washington, DC, 2005

This report contains summary data of the Supplemental Security Income program pursuant to section 231 of the Personal Responsibility and Work Opportunity Reconciliation Act of 1996.

[18] Wittenburg, David, and Melissa Favreault, "Safety Net or Tangled Web? Programs and Services for Adults with Disabilities." *Occasional Paper, Number 68*, The Urban Institute, Washington, DC, 2003 (report published as part of the Urban Institute's Assessing the New Federalism project, with support from the Annie E. Casey, Robert Wood Johnson, W. K. Kellogg, John D. and Catherine T. MacArthur, and Ford Foundations.

This paper examined the role that government safety net programs play in the lives of low-income adults with disabilities. The authors provide background information on health conditions inherent in low-income populations and identify the economic issues faced by many adults with disabilities. Using data from the National Survey of America's Families (NSAF), the authors found that there is a great deal of overlap with regard to issues that affect the disabled and low-income populations. In addition, the authors summarized the programs and policies that assist low-income adults with disabilities. The study identified several issues associated with program access, including difficulties in meeting disability eligibility requirements, reduced program options for certain groups, and work disincentives. It also examined some potential policy options for addressing each of these issues, including ongoing efforts by some state and federal agencies.

[19] U.S. Government Accountability Office, *Disabled Veteran Programs: U.S. Eligibility and Benefit Types Compared with Five Other Countries*, GAO/HRD-94-6, Washington, DC: 1994

This report reviewed the benefits other countries provide to disabled veterans and provided a comparison to the U.S. The report stated that the VA's definition of service connection is more lenient than is the case for veterans in other countries such as Germany, Italy, and the United Kingdom. Under VA's definition, the disease or injury need not be incurred during a veteran's military tour of duty; it can be considered service-connected if a condition prior to a military tour of duty was aggravated by military service. Almost all of the other countries studied in this report had more strict definitions of service-connected disability; typically the disability must be directly connected to military duties. Examples include United Kingdom where disability must be directly connected to military duties; Finland where besides the military duty connection to disability, the injury must occur in a location set aside for performing military duties; and Germany where a causal relationship is required between the military service and the disability.

[20] Aarts, Leo, "European Experiences with Disability Policy," In *Disability Cash Work and Benefits*, Edited by Marshaw, Jerry L., Reno, Virginia, Burkhauser, Richard, and Berkowitz, Monroe, W. E. Upjohn Institute of Employment Research, pp. 129-166, 1996

The authors provided a cross-sectional comparison of the disability policies in four European nations (Netherlands, Germany, Sweden and the United Kingdom), demonstrating the impact of public policy on the incidence of disability benefit receipt. Among the comparisons included in the chapter are benefits levels, qualifying conditions, maximum duration, funding contributors, and administration. Permanent and temporary programs were compared. Comparisons to the United States included public expenditures on labor market measures of disabled and on cash benefits as a percentage of GDP, and disability transfer recipients' participation rates by age group. Other issues discussed in the chapter were common features, social welfare provisions, underlying philosophies, accessibility, public provision of disability services, and employment policies.

[21] Banks, James; Kapteyn, Arie, Smith, James; Soest, Arthor, International Comparisons of Work Disability, Discussion Paper No. 1118, The Institute for the Study of Labor (IZA), Bonn, Germany, April 2004

Self-reported work disability was analyzed in the U.S., the UK, and the Netherlands. Different wording of the questions led to different estimated work disability rates. But even if identical questions had been asked, cross-country differences were estimated to remain substantial. Respondent evaluations of work limitations of hypothetical persons described in vignettes were used to identify the extent to which differences in self-reports between countries or socio-economic groups were due to systematic variation in the response scales. Results suggest that more than half the difference between the rates of self-reported work disability in the US and the Netherlands could be explained by response scale differences. A similar methodology is used to analyze the reporting bias that arises if respondents justify being on disability benefits by overstating their work limiting disabilities.

[22] Alonso, J., Angermeyer, M., Bernert, S., Bruffaerts, R., Brugha, T., Bryson, H., Girolamo, G., Graaf, R., Demyttenaere, K., Gasquet, I., Haro, J., Katz, S., Kessler, R., Kovess, V., L-pine, J., Ormel, J., Polidori, G., Russo, L., Vilagut, G., Disability and Quality of Life Impact of Mental Disorders in Europe: Results from the *European Study of the Epidemiology of Mental Disorders (ESEMeD)* project. *Acta Psychiatr Scand* 2004; 109 (Suppl. 420): 38–46

This study examined the impact of mental health state and specific mental and physical disorders on work role disability and quality of life in six European countries (Belgium, France, Germany, Italy, the Netherlands, and Spain) among individuals aged 18 years and over who were not institutionalized and were eligible for an in-home computer-assisted interview. Common mental disorders, work loss days (WLD) in the past month, and quality of life (QoL) were assessed, using the WMH-2000 version of the CIDI, the WHODAS-II, and the mental and physical component scores (MCS, PCS) of the 12-item short form, respectively. The presence of chronic physical disorders arthritis, heart disease, lung disease, diabetes, and neurological disease were also assessed.

Multivariate regression techniques were used to identify the independent association of mental and physical disorders while controlling for gender, age, and country. The results of this study indicate that, in each country, WLD and loss of QoL increased with the number of disorders. Most mental disorders had approximately 1.0 SD-unit lower mean MCS and lost three to four times more work days, compared with people without any 12-month mental disorder. The 10 disorders with the highest independent impact on WLD were neurological disease, panic disorder, PTSD, major depressive episode, dysthymia, specific phobia, social phobia, arthritis, agoraphobia, and heart disease. The impact of mental vs. physical disorders on QoL was specified, with mental disorders impacting more on MCS and physical disorders more on PCS. Compared to physical disorders, mental disorders had generally stronger cross-domain effects.

[23] Sim, Joann, "Improving Return-to-Work Strategies in the United States Disability Programs with Analysis of Program Practices in Germany and Sweden," *Social Security Bulletin*, 1999, Vol. 62, Issue 3

The GAO has made recommendations for improving the disability programs by citing practices that have been successful in Germany, Sweden, and the private sector. GAO points out that the estimated lifetime savings for removing an additional 1 percent of the disabled beneficiaries from the rolls of the SSDI and the SSI programs each year would ultimately reach \$3.0 billion. GAO cited three specific practices as showing the most promise for returning the disabled to work. They are (1) intervening as soon as possible after a disabling event to promote and facilitate return to work, (2) identifying and providing necessary return-to-work assistance and managing cases to achieve return-to-work goals, and (3) structuring cash and health benefits to encourage people with disabilities to return to work. This article examined these suggestions to improve the rehabilitation rate of disabled workers using research by experts on return-to-work practices in Germany, Sweden, and the United States.

[24] Hvinden, Bjorn, “Convergence in Disability Policies in Western Europe?” Department of Sociology and Political Science, Norwegian University of Science and Technology, Trondheim, Norway, 2002

This article compared disability programs across several Western European countries (all OECD countries), including an evaluation using data from two of these countries (the United States and the Netherlands). The study finds that a significant part of the observed difference in reported work disability between the countries lies in the fact that residents of the two countries use different response scales in answering the standard questions on whether they have a work disability. Essentially, for the same level of actual work disability, Dutch respondents have a lower response threshold in claiming disability than American respondents. To reach this conclusion, the study applies a vignette survey technique. Respondents were asked to rate the extent of that disability. Especially in the important and more subjective health domains of pain and emotion, the evidence is quite strong that American respondents use a “tougher” standard when assigning a work disability status. While explaining these different standards is an important research question in itself, based on this research, there seems little question that they exist. While one may question the specific assumptions in each of the modeling approaches outlined in the paper, the similarity of their implications for explaining international differences in work disability is striking.

[25] Prinz Christopher, “Disability Programs in Need of Reform,” *Policy Brief, OECD, March, 2003*

This article provided a summary and brief discussion regarding the rise of disability claims and showed an analysis of variance across countries. The article also provided recommendations for improving workforce participation amongst the disabled population.

[26] Stone, Robyn, “Providing Long-Term Care Benefits in Cash: Moving to a Disability Model,” *Health Affairs, Volume 20, number 6, 2001.*

This article discussed the VA’s use of cash payments in lieu of formally provided homemaker personal care and other supports to veterans and their surviving spouses who are disabled and need

long-term care in the community. Stone noted that the cause of patient autonomy is served by cash benefit programs, although challenges were also noted.

Other literature

Budin, Richard and Kapur, Kanika. *An Analysis of Military Disability Compensation*, The RAND Corporation, Santa Monica, California, 2005

This report reviewed the goals and effectiveness of current policies for compensating veterans with service-connected disabilities. It identified trends in veterans' disabilities, compared the military disability system with that used by civilian firms, and described the effect of military disability on civilian labor market outcomes.

Burkhauser, Richard V., Butler, J. S., Kim, Yang, and Weathers Robert R. "The Importance of Accommodation on the Timing of Disability Insurance Applications: Results from the Survey of Disability and Work and the Health and Retirement Study." *The Journal of Human Resources*, Vol. 34, No. 3, Summer 1999, pp. 589-611

Using data from the 1978 Survey of Disability and Work and the 1992 Health and Retirement Study, the authors tested the importance of accommodation and other policy variables on the timing of applications for Social Security Disability Insurance benefits following the onset of a work-limiting condition.

Burkhauser, Richard V., and Daly, Mary, "Policy Watch: U.S. Disability Policy in a Changing Environment." *The Journal of Economic Perspectives*, Vol. 16, No. 1, Winter 2002, pp213-224

This article provided the historical backdrop/context of disability legislation and discussed the efficacy of disability policy in terms of achieving its desired outcome.

Burkhauser, Richard V., Daly, Mary, Houtenville, Andrew J, Navgis, Nigan, "Self-Reported Work-Limitation Data: What They Can and Cannot Tell Us." *Demography*, Vol. 39, No. 3, August, 2002, pp.541-555

In this study, the authors examined the Current Population Survey (CPS) and the National Health Interview Survey and provided an

analysis of what the CPS data can and cannot be used for in disability research. Specifically, the authors postulated that the CPS could be used to monitor trends in outcomes of those with disabilities and indicated that the decline in the employment of people with disabilities during the 1990s is not an artifact of the data.

Congressional Budget Office, *Options for Social Security: Budgetary and Distributional Impacts*, Statement of Douglas Holtz-Eakin, Director before the Committee on Finance, United States Senate, May 25, 2005

This transcript of Director Holtz-Eakin's testimony focuses on the spending side of the Social Security program, as requested by the Chairman of the Finance Committee. Several options for curtailing the growth of outlays are discussed, and their effects on the system's finances and on different types of beneficiaries are compared. CBO has also prepared a more comprehensive menu of options for changing scheduled benefits or revenue, which is included as an attachment to this document.

Gerber, David A., "Disabled Veterans, the Experience of Disability in Western Societies, 1914-1950." *Journal of Social History*, 2003

This article discussed group formation and collective identity among disabled veterans of military service. Specifically, the article explored the meaning of collective orientation and examined the similarities and differences between able-bodied and disabled veterans as well as their civilian counterparts. The article supported the view that collective orientation is influential in determining a group's collective identity and examined how this identity affects efforts to receive compensation.

Selin, Opein, and Stapleton, David. *The Effect of Social Security Reform Proposals on Social Security Disability Insurance, Supplemental Security Income, and Private Disability Insurance*, Mimeo, The Public Institute, AARP, Washington, DC, 2001

In this report, the authors examined several Social Security reform proposals and investigated the possible effects of the proposed reform measures for Social Security Disability Insurance (SSDI), Supplemental Security Income (SSI), and private disability insurance benefit levels. The report focused on those proposals that

might affect individual accounts due to the potential impact on SSDI benefit levels.

Social Security Administration, *Your Retirement Benefit: How It Is Figured*, Washington, DC, 2005

This handbook, which is issued by the Social Security Administration, lists information regarding benefit eligibility and application procedures for the Social Security benefits program.

Social Security Administration, *How Workers' Compensation and Other Disability Payments May Affect Your Benefits*, Washington, DC, 2005

Issued by the Social Security Administration, this handbook describes how workers' compensation affects other government provided benefits.

Social Security Administration, *A Guide to Supplemental Security Income for Groups and Organizations*

This document provides guidance to groups and organizations regarding the benefit structure and eligibility requirements for SSI and SSDI.

Social Security Administration, *Retirement Benefits*

This report provides guidance to citizens regarding their retirement benefits and eligibility.

RAND Corporation, *Self-Reported Work Disability in the U.S. and the Netherlands*, RAND, *Labor and Population working paper series*, November 2004

This document analyzed self-reported work disability in the U.S. and the Netherlands. The raw data showed that Dutch respondents much more frequently report that they have a work-limiting health problem than is the case for respondents in the U.S. The difference remains even when controlling for demographic characteristics and observed onset of health problems. Respondent evaluations of work limitations of hypothetical persons described in vignettes are used to identify the extent to which the differences in self-reports between countries or socioeconomic groups are due to systematic variation in the response scales. A model that assumes the same response scales for different health domains is compared with a model that allows for domain-specific response scales. Results of

both models suggest that about half of the difference between the self-reported rates of work disability in the U.S. and the Netherlands can be explained by response scale differences.

Gjesdal, Sturla, Bratberg, Espen, “The Role of Gender in Long-Term Sickness Absence and Transition to Permanent Disability Benefits: Results from a Multi-register Based, Prospective Study in Norway 1990-1995”, *European Journal of Public Health*, 2002; 12; 180-186

The aim of this study was to identify predictors for the transition from long-term sickness absence into disability pension status with a special focus on gender. The authors determined that the annual cumulative incidence of long-term sickness absence was higher for women than men (6.5 percent compared to 4.9 percent, respectively).

U.S. Government Accountability Office, *Federal Disability Assistance: Wide Array of Programs Need to Be Examined in Light of 21st Century Challenges*, GAO-05-625, Washington, DC, 2005

This report was commissioned under the Comptroller General's authority as part of a continued effort to help policy makers better understand the extent of support provided by federal programs to people with disabilities. The report provided information and recommendations regarding how these programs could be better aligned to more effectively meet the needs of individuals with disabilities in the 21st century. Specifically, this report identified (1) the wide array of federal programs that serve people with disabilities and (2) the major challenges these federal programs face in the 21st century. GAO presented factors policy makers and program administrators should address in assessing whether, and how, current compensation programs could be transformed to better meet the needs and challenges of individuals in the 21st century.

Alonso J., Angermeyer M.C., Bernert S., Bruffaerts R., Brugha T.S., Bryson H., Girolamo G., Graaf R., Demyttenaere K.; Gasquet I., Haro J.M., Katz S.J., Kessler R.C., Kovess V., Lépine J., Ormel J., Polidori G., Russo L.J.; Vilagut G., “Disability and Quality of Life Impact of Mental Disorders in Europe: Results from the European Study of the Epidemiology of Mental Disorders (ESEMeD) Project, *Acta Psychiatr Scand* 2004; 109 (Suppl. 420): 38-46; Blackwell Munksgaard, UK

This manuscript examined the impact of mental health status and specific mental and physical disorders on work role disability and quality of life in six European countries.

Burkhauser, Richard V., “Post-ADA: Are people with Disabilities Expected to Work?” *Annals of the American Academy of Political and Social Science*, Vol. 549, *The Americans with Disabilities Act: Social Contract or Special Privilege?* January, 1997, 71-83

This study presented the argument that the unprecedented growth in the younger disability-transfer population is counter to the goal of integrating working age people with disabilities into mainstream employment. The authors presented the view that the onset of a disability need not result in a swift and inevitable movement onto the disability rolls for most people, and that work-based policies in the spirit of the Americans with Disabilities Act (ADA) can substantially increase employment. Specifically, the authors advocate a shift in public opinion/consciousness that focuses on encouraging individuals with disabilities to return to work rather than perpetuating the individual’s dependency on government programs.

Autor, D. and Duggan, M., “The Rise in the Disability Rolls and the Decline in Unemployment,” *Quarterly Journal of Economics* 118(1), 157-206, 2003

In this study, the authors examined the dramatic increase in the number of non-elderly adults receiving benefits from SSDI and SSI programs between 1984 and 2000. The authors explored the implications of these changes for the level of labor force participation among the less skilled and their employment responses to adverse employment shocks. According to the authors, the “liberalization” of federal disability programs appears to have induced labor force exits among the low-skilled unemployed.

Bound, J., Self-reported versus Objective Measures of Health in Retirement Models, *Journal of Human Resources* 26(1), 106-138, 1991

This article examined the effect of self-reported health measures on the validity of labor supply models. When self-reported measures are used, health seems to play a larger role and economic factors a smaller one than when more objective measures are used. While this may indicate biases inherent in using self-reported measures, there are reasons to be suspicious of more objective measures as well. The authors found that statistical models incorporating both self-reported and objective measures of health showed the potential biases involved in using either measure or in using one to instrument the other. Specifically, this study questions the validity of the Retirement History Survey and the National Longitudinal Survey of Older Men.

U.S. Government Accountability Office, *Veterans' Disability Benefits: VA Could Enhance Its Progress in Complying with Court Decision on Disability Criteria*, GAO 06-46, Washington, DC, 2006

In 2002, the VA found that about 61percent of the joint and spine disability examination reports prepared by VA medical centers did not provide the information required for VA's joint and spine disability decisions to comply with DeLuca v. Brown, 8 Vet. App. 202 (1995). GAO was asked to determine the progress VA has made since 2002 in ensuring that joint and spine exam reports prepared by VA medical centers provide VA regional office claims adjudicators with the medical information that DeLuca requires for disability decisions.

U.S. Government Accountability Office, *SSA and VA Disability Programs: Re-Examination of Disability Criteria Needed to Help Ensure Program Integrity*, GAO 02-59, Washington, DC, 2002

This report reviewed the extent to which DI, SSI, and VA's disability criteria have been updated based on scientific advances, including medical and technological innovations, and labor market changes, including the growth in service- and knowledge-based industries over manufacturing-based industries. The implications of incorporating these advances and changes into the programs were also discussed. The report included a comprehensive review of agency documents including SSA's advisory board reports and completed interviews with agency officials and experts in the field.

U.S. Government Accountability Office, *SSA Disability: SGA Levels Appear to Affect the Work Behavior of Relatively Few Beneficiaries, but More Data Needed*, GAO Report 02-224, Washington, DC, 2002

This report examined the effects of the SGA on the work patterns of Disability Insurance beneficiaries and the effects of the SGA on Disability Insurance program entry and exit rates. A comprehensive review of economic and disability literature related to the effects of the SGA was conducted, as well as an analysis of SSA's Disability Insurance program data. The analysis included data from the Continuous Work History Sample (CWHHS) over the period 1985 through 1997.

U. S. Government Accountability Office, *VA Disability Compensation: Disability Ratings May Not Reflect Veterans' Economic Losses*, GAO HEHS-97-9, Washington, DC, 1997

This report was completed in response to the request for information to assess the need for a comprehensive study of the economic validity of VA's rating schedule. Specifically, the report provides information regarding the basis for the disability ratings assigned to conditions in the current schedule; the socioeconomic changes that have occurred since the original version of the schedule was developed that may have influenced the earning capacity of disabled veterans; the results of a previous study that examined the validity of ratings in the schedule; VA's efforts to help ensure that the ratings do reflect disabled veterans' average impairment in earning capacity; and the advantage of basing ratings in the schedule on actual loss in earnings, along with approaches that could be used to estimate this loss.

U.S. Government Accountability Office, *Major Management Challenges and Program Risks*, GAO-01-255, Washington, DC, 2001

This report addressed the major performance and accountability challenges facing the VA as it seeks "to care for him who shall have borne the battle and for his widow and his orphan," stated in words adopted from Abraham Lincoln's Second Inaugural Address. It included a summary of actions that VA has taken and that are underway to address these challenges. It also outlined further actions that GAO believed were needed.

U.S. Government Accountability Office, *VA and DoD Healthcare: VA Has Policies and Outreach Efforts to Smooth Transition from DoD Healthcare, but Sharing of Health Information Remains Limited*, GAO-05-1052T, Washington, D.C, 2005

This statement is based on a previous GAO study regarding the notion of a “seamless transition” in the provision of healthcare services to veterans. The report focused on identifying the policies and outreach efforts that the VA has instituted to provide timely access to healthcare to service members, and the extent to which individually identifiable health information is shared systematically between DOD and VA. Since GAO’s work is still in the early stages of review, the statement is limited to the information available at the time this statement was published.

U.S. Government Accountability Office, *Homeless Veterans: Job Retention Goal Under Development for DOL's Homeless Veterans' Reintegration Program*, GAO-05-654T, Washington, DC, 2005

The VA has estimated that as many as 250,000 veterans may be homeless on any given day. Many other veterans are also considered at risk for homelessness because of poverty, lack of support from family and friends, and precarious living conditions in overcrowded or substandard housing. One federal program designed to help these veterans is the Department of Labor’s (DOL) Homeless Veterans’ Reintegration Program (HVRP)—a grant program that provides funding for employment and training services for homeless veterans. GAO was asked to assist the subcommittee with its consideration of HVRP reauthorization by providing information on DOL’s (1) expenditures on HVRP grants and (2) measures and goals for assessing the effectiveness of HVRP. GAO reviewed VA and DOL documentation that included the amounts DOL expended for HVRP as well as information on HVRP grantees and performance goals. GAO also interviewed DOL program officials.

Burkhauser, Richard V., “The Early Acceptance of Social Security: An Asset Maximization Approach,” *Industrial and Labor Relations Review*, Vol. 33, No. 4, July, 1980, pp. 484-492

This article presented the importance of economic factors in the decision of male workers to take social security (OASI) benefits at age 62. The authors pointed out that while previous studies of this decision have concentrated on the flow of pension benefits available

to the worker in a single year, this study emphasized the asset nature of such benefits. The potential loss in the market earnings when OASI benefits are accepted is weighed against the change in the total potential value of private pension and OASI benefits if retirement is postponed. The present value of the entire potential stream of benefits emerged as more important theoretically and empirically than the value of annual benefits immediately available to the worker.

Engstrom, L.G., and Eriksen, T., “Can differences in benefit levels explain duration and outcome of sickness absence?” *Disability and Rehabilitation*, 2002; Vol. 24, No. 14, pp.713-718

The aim of this study is to examine the long- and short-term economic incentives inherent with respect to sickness and unemployment insurances. In particular, the report addressed how the differences in, for instance, benefit levels between the two systems affected the duration and outcome of long-term sickness for the unemployed.

U.S. Government Accountability Office, *Disability Insurance: SSA Should Strengthen Its Efforts to Detect and Prevent Overpayments*, GAO Report 04-929, Washington, DC, 2004

This report was completed at the request of the Senate Committee on Finance to determine the amount of overpayments in the DI program (particularly those attributable to earnings or work activity) and identify any vulnerabilities in SSA’s processes and policies for verifying earnings that may contribute to work-related overpayments.

U.S. Government Accountability Office, *SSA Disability Redesign: Actions Needed to Enhance Future Progress*, GAO/HEHS-99-25, Washington, DC, 1999

This report was completed at the request of the Chairman of the Subcommittee on Social Security, House Committee on Ways and Means. The Chairman asked the GAO to assess the Social Security Administration’s (SSA) efforts to redesign its disability claims process and to identify actions that SSA could take to better ensure future progress. Recommendations for improving the efficiency of the SSA claims process are made.

U.S. Government Accountability Office, *Veterans' Disability Benefits: Improved Transparency Needed to Facilitate Oversight of VBA's Compensation and Pension Staffing Levels*, GAO-06-225, Washington, DC, 2006

This report was completed at the request of the Chairman, Subcommittee on Disability Assistance and Memorial Affairs, House Committee on Veterans' Affairs. The Chairman asked the GAO to submit a statement for the record with regard to their examination of the Veterans Benefit Administration's (VBA) fiscal year 2005 budget justification. The report included an assessment of VBA's determination and justification of claims processing staffing levels, the role of productivity in such determinations, and the VBA's projections of future claims workload and complexity. Specifically, the GAO recommended that VBA provide additional information on the impact of claims processing improvement initiatives; claims processing productivity and plans to improve productivity; and the impact of changes in claims complexity.

U.S. Government Accountability Office, *Veterans' Disability Benefits: Claims Processing Challenges and Opportunities for Improvements*, GAO-06-283T, Washington, DC, 2006

This report was completed at the request of the Chairman, Committee on Veterans' Affairs, U.S. House of Representatives, who asked the GAO to report on the claims processing challenges and opportunities facing the VA disability compensation and pension program. These concerns include long waits for decisions, large claims backlogs, inaccuracy/inconsistency of decisions, and significant discrepancies in average disability payments from state to state. According to the report, the VA's current disability determination process is outdated and does not consider the relationship between impairments and work capacity and should consider recent medical and technological advancements.

U.S. Government Accountability Office, *Veterans' Benefits: Further Changes in VBA's Field Office Structure Could Help Improve Disability Claims Processing*, GAO-06-149, Washington, DC, 2006

This report was completed at the request of the Chairman, former Chairman, and Ranking Minority Member, Senate Committee on Veterans' Affairs. The GAO was asked to review the VBA's efforts to realign its compensation and pension claims processing field

structure to improve performance. This report (1) identified the actions VBA has taken to realign its compensation and pension claims processing field structure to improve performance and (2) examined whether further changes to its field structure could improve performance. The authors recommend that VA direct the Under Secretary for Benefits to undertake a comprehensive review of VBA's field structure for processing disability compensation and pension claims. The review should address staff deployment, opportunities for consolidating disability compensation and pension claims processing, and human capital and real property issues. As a result of this study, the VA established a task force to thoroughly explore potential areas for consolidation.

U.S. Government Accountability Office, *Veterans' Disability Benefits: Claims Processing Problems Persist and Major Performance Improvements May Be Difficult*, GAO-05-749T, Washington, DC, 2005

This report was completed at the request of the Chairman, Committee on Veterans' Affairs, U.S. Senate. The GAO was asked to testify on the current state of VA's disability claims process and to identify and address the factors that may impede VA's ability to improve performance. Specifically, the GAO was asked to examine persistent concerns such as long waiting periods for decisions, large claims backlogs, and the accuracy of decisions. As stated in the report, "in January 2003, GAO designated federal disability programs, including VA's compensation and pension programs, as a high-risk area because of continuing challenges to improving the timeliness and consistency of its disability decisions, and the need to modernize programs."

U.S. Government Accountability Office, *VA Disability Benefits: Board of Veterans' Appeals Has Made Improvements in Quality Assurance, but Challenges Remain for VA in Assuring Consistency*, GAO-05-655T, Washington, DC, 2005

This report was completed at the request of the House Subcommittee on Disability Assistance and Memorial Affairs. The GAO was asked to determine what the VA has done to correct previously reported weaknesses in methods used by the Board to select decisions for quality review and to address the potential for inconsistency in decision-making at all levels of adjudication. This testimony updated actions VA has taken to implement

recommendations from the GAO's 2002 report, in which GAO recommended that VA take steps to (1) correct the weaknesses in the Board's sampling and accuracy rate calculation methods and (2) establish a system for assessing the consistency of decision-making at all levels of adjudication in VA, including VA's regional offices and the Board.

U.S. Government Accountability Office, *Disabled Veteran Programs: U.S. Eligibility and Benefit Types Compared with Five Other Countries*, GAO report: GAO/HRD-94-6, Washington, DC, 1993

This report reviewed the benefits other countries provide to disabled veterans and provided a comparison to the U.S. The report stated that VA's definition of service connection is more lenient than it is for veterans in other countries such as Germany, Italy, and the United Kingdom. Under VA's definition, the disease or injury need not be incurred during a veteran's military tour of duty; it can be considered service-connected if a condition held prior to a military tour of duty was aggravated by military service. Almost all of the countries studied in this report have more strict definitions of disability; typically disability must be connected to military duties. Examples include: United Kingdom – Disability must be directly connected to military duties; Finland – Besides the military duty connection to disability, the injury must occur in a location set aside for performing military duties; Germany – A causal relationship is required between the military service and disability.

U.S. General Accountability Office, *Other Programs May Provide Lessons for Improving Individual Unemployability Assessments*, U.S. Senate: Government Accountability Office report, GAO-06-207T, Testimony before the Committee on Veterans' Affairs, U.S. Senate

The report provided a detailed description of the VA Individual Unemployability benefits as well as comparing the program to civilian programs. The study documented a large increase in the IU benefits and pointed out how incentives to undergo therapy as well as work incentives might reduce the number of veterans receiving IU benefits.

Wilson, Mike, Perry, Shelley, Helba, Cynthia, Hintze, Wayne Wright, Mareena, Lee, Kimya, Greenlees, James, Rockwell, David, and Deak, Mary Ann. “2001 National Survey of Veterans (NSV) Final Report,” Department of Veterans Affairs Web site, March 30, 2006.

The report gives results of 2001 Veterans Survey. It includes demographic characteristics of Veterans with and without disabilities.

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Chapter 2. Disability and earnings

The VDBC is charged with evaluating the benefits that are provided to veterans and their survivors for disabilities and deaths attributable to military service. One of their primary tasks is to determine whether the current veterans' disability compensation system is both effective and equitable at compensating disabled veterans for their average lost earnings capacity due to their service-connected disabilities. The VDBC is asked to advise Congress and the President about veterans' disability payments — specifically, how fair and effective they are in compensating disabled veterans for the loss of potential earnings.

We provide information to address this question through summarizing the results of studies that examine the association of disability with labor force performance.⁷ Our goal in this section is to understand the direct relationship between disability and labor force performance rather than consider the impact of incentives embedded in disability compensation programs on labor force outcomes. In doing, so that we have searched for articles that relate to either a disability index or relate the actual disability to earnings. These articles relate the impact of various measures of disability on wages and labor force participation.

We begin by describing studies that examine the VA disability program. Next, we present the results of several studies that examine the impact of disability more broadly on labor market outcomes. Finally, we present studies that examine the impact of disability on mortality.

⁷ Notably, the Economic Systems, Inc. report [1] of 2004 includes a comprehensive review of key documents relevant to the VA's rating schedule.

VA disability rating and earnings

As reported in Economic Systems Incorporated (ESI) 2004 review of the literature [1], since the end of World War II and the implementation of the 1945 VA disability rating schedule, there have been only two comprehensive studies of the VA disability rating schedule. The President's Commission on Veterans' Pension, referred to as the Bradley Commission, produced an extensive report in 1956 (President's Commission Bradley [2]). The second report, referred to as the "Economic Validation of the Rating Schedule" study (ECVARS [3]), was submitted to the Committee on Veterans Affairs, House of Representatives on July 20, 1971. The ECVARS study was reviewed by GAO in 1997 [4] and by ESI in 2004.

More recently, the VA conducted a survey in 1983 of VA disability compensation administrators to gauge the adequacy of the VA disability compensation system [5]. Finally, Macklin and Darling [6] studied the impact of VA disability compensation on earnings for veterans drawing retirement pay.

ESI [1] carefully reviewed the Bradley Commission Report [2]. Two sections of the Bradley report pertained specifically to the appraisal of the VA rating system that was put in place in 1945. The first section was related to a medical appraisal of the rating system (Volume II part B). The second section (Volume II part C) was related to an examination of the rating system as it relates to earnings.

The Bradley Commission examined how earnings data related to the disability ratings. The Commission engaged the U.S. Bureau of the Census to survey veterans to obtain information on earnings. The Census Bureau surveyed 8,000 veterans from the general population of veterans and 13,000 veterans from those receiving disability benefits. The goal was to obtain representation for each 10-percentile disability rating (about 1,000 cases for each of the sampling strata). Using these data, the Commission conducted extensive tabular analysis of disabled veterans in relation to factors such as age, education, occupation, post-service training, and disability rating.

The Bradley Commission report, based on these tabulations, concluded that the association between disability rating and earnings was neither uniform nor close except at the 100 percent rating. ESI did further analysis of their data and found that lost earnings grew as the disability rating increased. In specific, ESI found overcompensation occurred in the ratings from 50 – 90 percent. However, the largest level of under-compensation occurred at the 100 percent disabled level. For these individuals, their earnings combined with their disability compensation only gave them on average 90 percent of what non-disabled veterans earn.

In the aggregate, however, ESI found that the earnings and disability compensation of service-connected disabled veterans averaged across all ratings groups combined exceeded that of the comparison group of non-disabled veterans by 15 percent. Although they found that the combined earnings and disability compensation put some rating groups above and others below the average earnings of non-disabled veterans, they generally found that the level of disability compensation was roughly in line with the lost earnings. In testing with 1955 data, ESI found that the correlation between median cell earnings and disability compensation levels was $-.83$, indicating a tight relationship between lost earnings and disability compensation.

ESI performed an analysis of the relationship between earnings and disability compensation using regression and found a similar result. The regression analysis indicated that the 1955 VA disability compensation levels of veterans were about 25 percent less than the loss in earnings. The ESI concluded that Congress was justified in subsequently increasing the benefits of the 100 percent disability category in response to the Bradley Commission report. For this category, Congress increased the annual level of compensation by 41 percent.

The second major review of the VA disability compensation program is the 1971 ECVARS report [3]. This study was examined in depth in ESI's review of the literature. The ECVARS study included an analysis of a survey of 485,000 veterans receiving disability compensation. The comparison group was 14,000 veterans not receiving disability benefits. In the study, economic loss was measured as the difference between median income of veterans

with a service-connected disability and veterans without a disability, holding constant for comparable educational attainment, age, and place of residence. In contrast to the Bradley Commission study, the ECVARS study included data collection to measure some 700 diagnostic codes. The ECVARS report presented wage losses and compensation paid by diagnostic codes and the VA rating schedule. The report used 1967 earnings to calculate the loss for disabled veterans compared to non-disabled veterans of similar age, education, and area of residence.

The results of the study did not lead to an adjustment of the VA disability rating system. As reported by ESI, the report's recommendations were not adopted because the VA believed that Congress would not support it. One interesting result of the ECVARS study was that mentally ill veterans suffered a greater earnings loss than amputees. The implication of the ECVARS study findings would have been to give mentally ill veterans a higher disability rating and amputees a lower rating than they were currently receiving. Overall, 200,000 physically handicapped Vietnam veterans would have lost significant benefits if the report recommendations had been adopted.

In a critique of the ECVARS [3] study, the GAO [4] reported that disability compensation exceeded economic loss for 330 of 700 diagnostic codes in the ECVARS study and it was less than the economic loss for 75 diagnostic codes. Based on this, the GAO report concluded that the rating schedule recommended in the ECVARS study was not accurate. ESI's report [1] also presented critiques of the GAO study. To do this, ESI constructed a correlation coefficient using data presented in the ECVARS report. The results of this analysis supported the finding of the ECVARS study and contradicted the GAO findings.

The GAO report [4] also pointed out that, even if ECVARS [3] or the actual VA rating system were accurate at the time, it is likely that both are out of date. When commenting on changes to the rating system that have occurred, GAO concludes that they were made primarily in response to improvements in the measurement of disability rather than to account for how new treatments and changes in the workplace may have altered the earning of the disabled.

For example, the report states that the original VA disability measure was constructed in 1945 and designed to reflect how disability impacted physical labor. This made sense at the time since physical labor was the predominant form of employment. Under this approach, disabilities that impact physical ability tend to receive higher ratings in the VA rating system. However, the GAO study [4] pointed out that our economy has moved from being dominated by manufacturing-based physical labor to a predominantly skill- and service-based economy. In support of this, data show that the goods producing sector of the economy (mining, construction, and manufacturing) declined from about 44 percent in 1945 to 21 percent in 1994. This change has been so large that the Census Bureau manufacturing changed the way work was characterized in 1990, emphasizing service-based measures over manufacturing-based measures. Furthermore, the report pointed out that advancements in technology, including computers and automated equipment, following World War II and the Korean conflict had reduced the need for physical labor skills. Another important consideration that the GAO report [4] highlighted was that technology impacted the effectiveness of treating disabilities as well as providing more workplace accommodations for the disabled. This process was likely further accelerated with the passage of the American with Disabilities Act in 1990.

Another study of the VA rating system described in the ESI literature review [1] was conducted in early 1980s by the VA [5]. As part of this study, a survey was given to 58 regional offices regarding the adequacy of the VA rating benefits program. Of the 53 offices responding, 45 percent expressed the opinion that VA compensation replaced the income lost by veterans due to their service-connected disabilities while 32 percent did not agree. In narrative remarks, nearly half of the respondents reported that they felt that lower ratings were overcompensated. These findings are only suggestive of the true association between disability rating and income since they are not based on actually earnings data but only on the views of VA administrators.

One study that directly examined the relationship between VA disability ratings and earnings is by Mackin and Darling [6]. Although the focus of the study was to examine the impact of military retirement on earnings, the study also examined the

relationship between VA disability rating and earnings among retired veterans as well as self-reports of disability in the civilian workforce on earnings. The data used in the study were drawn from the 2003 Survey of Retired Military and the March 2003 Current Population Survey.

In regards to the disability rating system, the study indicated that the rating tends to overcompensate at the low end of the disability scale and under compensate at upper end. Furthermore, the study concluded that the main impact of the disability rating was to affect the decision to work full-time rather than the level of earnings. The report also quantified the high share of military retirees with some disability. Nearly two-thirds of all military retirees had a VA disability rating. About 25 percent had a rating of 60 percent or higher. Other key findings of the study included the following:

- VA ratings of 20 percent or lower did not have a significant effect on earnings.
- Retirees with VA ratings of 30 percent or higher had lower post-service earnings.
- Enlisted retirees with 30 to 50 percent disability earned about 8 percent less than similar non-rated retirees, while officer retirees with the same rating earned 25 percent less.
- There was no significant earnings effect for enlisted retirees with a VA rating of 60 to 80 percent disabled. However, officer retirees in that category earned 23 percent less than non-disabled retirees.
- Enlisted retirees with a 90 to 100 percent rating earned substantially less than their counterparts; their earnings were about 32 percent lower.
- Officer retirees with the highest disability ratings (90 to 100 percent) had earnings about 79 percent lower than those of non-disabled retirees.
- VA disability ratings varied significantly by age. Both enlisted and officer retirees under the age of 55 were least likely to have a VA rating. Retirees age 65 and over were most likely to have a rating of 60 to 100 percent.

- Full-time workforce participation was lower for retirees with disability ratings over 20 percent. However, part of the decline in participation across disability groups might be attributed to the high correlation between age and disability.
- Earnings declined with higher disability ratings for officer retirees. Median annual earnings for officer retirees with no VA rating were \$75,000 compared to only \$57,000 for retirees in the highest rating category. However, earnings varied little by VA rating among enlisted retirees.

Disability and labor force participation

In this subsection, we summarize studies that relate disability to labor force performance. These studies either directly estimate the relationship between disability and labor force performance or simply identify the fact that disabled individuals tend to be in lower income groups than their non-disabled counterparts. We pay particular attention to studies examining the impact of disabilities related to mental illness. We do so because these studies yield important insights into the special role that mental illness plays in labor force participation.

Findings from California's disability system

One of the most comprehensive studies of a disability compensation program was Reville's study of California's permanent partial disability (PPD) system [7]. Although the California PPD system is not the same as the VA disability rating system, this evaluation does inform us on the likely impacts of disabilities. In particular, this study highlights the large impact that mental disability has on earnings.

Similar to the results of a study of the VA disability benefits program reported by Mackin et al. [6], on average, the California rating system (prior to State Bill 899) appeared to function reasonably well in terms of targeting higher benefits to workers with higher proportional losses. However, another important objective of a rating schedule is to ensure that the ratings are distributed equitably among impairments. The study reports that by this measure California's PPD program performed badly. For example,

the authors reported that the overall positive relationship between earnings losses and disability ratings masked considerable differences in the distribution of benefits across impairments to different body parts. They reported that for the lowest disability rating group (ratings of 1-5 percent), back injuries have the highest estimated loss, about 4.6 percent, while knee injuries have the lowest, about .09 percent. The study also indicated that for all other rating groups, shoulder injuries had substantially higher proportional earnings losses than all other types of injury and that knee injuries had the lowest earnings loss on average, although the loss of gripping power seemed to have the lowest percentage of loss for the highest rating category. They also noted that these disparities were even more pronounced if psychiatric impairments were considered.

An important finding of the report was that all psychiatric claims, regardless of rating, had substantial earnings losses, exceeding 38 percent on average. For example, even low-rated psychiatric claims had a higher percentage of loss in earnings than all but the highest-rated claims for the remaining impairment types. Critically, these findings indicated that earnings strongly correlated with not only the severity of the disability but the type of disability, and that mental disabilities were particularly detrimental to job performance.

The link between disability and earnings

A number of other studies examined the impact of disability on labor market performance. Pelowski and Berger [8] examined the dynamic impact of short and long-term disease on earnings. Charles [9] examined the impact of disability over the lifetime of workers. He reported that disabled men experienced sharp drops in earnings that predated the measured date of onset, but that earnings recovered rapidly soon after onset, with much of the immediate reduction made up in the first two post-injury years. He also found that a modest downward trend followed, resulting in significant long-term losses in expected annual earnings of about 12 percent per year.

McNeil [10] found that in 1997, employment rates among those with non-severe disability were 64 percent, while those with severe disability had employment rates of 48 percent, and those with a

disability but with no reduced availability of employment had an employment rate of 80 percent. Baldwin and Johnson [11] performed a decomposition of wage differentials between disabled and non-disabled workers, finding that wage discrimination associated with disability resulted in lost employment. Yelin [12] also examined the relationship between disability and employment.

Delaire [13] reported that disabled Americans are a large and economically disadvantaged group. For example, in 1990 more than 10 percent of working age (18-64) men reported a disability; only 59 percent of these men worked while 95 percent of working age men without disabilities worked. Burkhauser, Haveman, and Wolfe [14], reported that the proportion of the U.S. male poverty population that was accounted for by men with disabilities increased from about 14 to 17 percent over the decade of the 1980s. They also reported that the risk of a disabled man of working age being poor by the end of the 1980s was about 170 percent of that experienced by a non-disabled man of working age.

The Haveman et al. [15] study focused on lost earnings capabilities that were attributable to the actual limitation associated with disability. Based on this measure of earnings, the authors estimated that the total loss of earnings was \$131 billion in 1973; this figure represented 5.3 percent of aggregate earnings capabilities (in 1988 dollars).

Accounting for endogenous disability measurement

Three studies specifically examined the impact of endogenous disability measurement on biases associated with the estimate of the relationship between disability and earnings. Endogenous disability measurement arises if reports of disability are related to other factors that in turn act to impact labor market performance.

Stern [16] reported that disability was strongly related to employment. He reported that endogenous disability measurement did not introduce a large bias in the association between disability and employment. However, Krieder [17], applying a more comprehensive methodology than Stern,

reported that bias associated with endogenous measurement of disability was large.

Bound [18] examined the impact of disability on labor force participation and mortality. To account for the possibility that incentives inherent in the SSI program resulted in reduced labor force performance (rather than the underlying disability resulting in reduced labor force performance), the author compared the labor force experiences of men who received disability payment to labor force outcomes for men applied for disability payments but did not receive them. Based on this comparison, he concluded that a significant portion of the poor labor force performance of disabled workers could be attributed to their disability rather than endogenous measurement of disability.

Technology and labor market performance

One study examined the impact of technology on labor market performance. Recall that we have already addressed the impact of technology on labor market performance in earlier sections ([4], [3]). This study, by Krueger and Kruse [19], examined labor force outcomes for individuals with a combination of spinal cord impairment and computer skills, compared to individuals with spinal cord impairment but without computer skills. They found that individuals with the combination of spinal cord impairment and computer skills did not face an earnings loss after the onset of disability, but that those with spinal cord impairment and no computer skills experienced substantial disability-related earnings losses.

Psychological disabilities and labor market performance

Along with Reville [7], we examined several studies that superficially examined the link between mental illness and labor force participation. Conti, Burnt, and Frank [20] examined the direct impact of depression on applications for disability insurance. First, the study reported that depression had a large impact on earnings and disability rating. Second, they found that a life altering shock, such as the death of a spouse, had a much larger impact on earnings and disability rating outcomes if the surviving spouse was

depressed before the shock occurred. This last finding may be applicable to surviving spouses of veterans.

Dremsa et al. [21] investigated the extent to which common psychological conditions contributed to lost work among individuals with musculoskeletal and ill-defined conditions. The analytical approach applied data from a cross sectional health- and work-related survey evaluating Gulf War veterans seeking DOD healthcare for Gulf War- related health concerns. The analysis showed an independent effect of both psychological conditions and musculoskeletal conditions.

Savoca et al. [22] used a nationally representative survey of Vietnam-era veterans to study the contribution of psychiatric health towards explaining the differences in the post-service civilian wages, hours worked, and employment probabilities among male veterans. The study found that PTSD significantly lowered the likelihood of working and, for those veterans who were working, a diagnosis of PTSD also lowered their hourly wages. Similarly, Murdoch et al. [23] reported that, among a nationally representative cross-section of veterans who applied for VA disability benefits for PTSD between 1994 and 1998, overall 42 percent reported low-income (defined as household income \leq \$20,000 per year).

Comparisons to other western industrialized countries

Two studies compared earnings of disabled people in Europe to earnings of disabled people in the U.S. These studies suggested that disabled people in Europe generally fared better than those in the United States.

In specific, Wittenburg and Favreault [24] reported that disabled individuals in many European countries were much better off economically than those in the U.S. Additionally, Burkhauser, Haveman, and Wolfe [14] reported that the disabled in many European countries were much better-off economically than those in the United States. The combination of substantially higher earnings replacement rates in the income support programs of European countries (up to 80 percent), in combination with extensive in-kind benefits (including both health insurance and housing assistance) explained their findings.

Disability and mortality

We also examined studies that indicated that disability was associated with decreased life span. Two studies specifically examined the impact of disability on mortality.

Bye and Gerald [25] followed the cohort of 18,782 people who were awarded benefits and enrolled in the Social Security Disability Insurance Program in 1972. As exhibited in the study, nearly 13 percent of this cohort died within 2 years, while only 5.3 percent recovered. The 2-year mortality rates rose as a function of age at entry.

The study also indicated that there was a wide variance of death rates by diagnostic group. For example, about 65 percent of those who were disabled by cancers (neoplasms) died within 2 years of admission to the disability insurance program. High mortality rates were also associated with genitourinary and digestive conditions: 25 and 22.5 percent, respectively, died within 2 years.

People whose disabilities were caused by traumatic injuries had the lowest mortality rate (2.6 percent), followed by musculoskeletal impairments (2.7 percent). Disabled beneficiaries whose limitations were caused by infectious diseases and traumatic injuries reported the highest recovery rates (23.3 and 22.1 percent) respectively. Overall these findings indicate that many of the disabilities associated with military service may not result in increases in mortality rates. However, the 2-year evaluation window of the study might result in an underestimate of the impact of disability on mortality.

Bound [18] examined the impact of disability on labor force participation and mortality. He reported that successful applicants to the disability insurance program experienced higher death rates than those of non-disabled people.

Literature reviewed

We provide an annotated bibliography of our citations containing a brief abstract of each individual source document. The abstracts were drawn heavily from the authors' own abstracts, when they were available. If authors' abstracts were not available, we summarized the relevant material from the citation.

Cited literature

[1] Economic Systems Inc, "VA Disability Compensation Program, Literature Review, "submitted to VA Office of Policy, Planning, and Preparedness, December 2004

This literature review included an extensive summary of the literature as it pertains to the analysis of the VA disability compensation program as well as to the impact of disabilities more generally on earnings. ESI presented a critique of the Bradley Commission report and the ECVARS study as well as the GAO review of that study.

[2] The President's Commission on Veterans' Pensions, *A Report on Veterans' Benefits in the United States, The Administration of Veterans' Benefits: A Study of the Interrelationship of Organization and Policy*, Staff Report No. VI, 84th Congress, 2d Session, House Committee Print No. 260, Volume II. Washington, DC: U.S. Government Printing Office, 1956

The Bradley report examined various aspects of the VA disability compensation program that were in place prior to 1945. The first section of the report was related to a medical appraisal of the rating system (Volume II part B). The second section (Volume II part C) was related to an examination of the rating system as it related to earnings.

The Commission obtained earnings data and related them to the disability ratings. The Commission engaged the U.S. Bureau of the Census to survey veterans regarding their earnings. They surveyed 8,000 non-disabled veterans and 13,000 veterans receiving disability benefits. The goal was to obtain representation for each 10-percentile-disability rating (about 1,000 cases for most of the sampling strata). Using these data, the Commission conducted

extensive tabular analysis of disabled veterans in relation to factors such as age, education, occupation, post-service training, and disability rating. The report concluded that the association between disability rating and earnings is neither uniform nor close.

[3] Committee on Veterans Affairs, *Veterans' Administration Proposed Revision of Schedule for Rating Disabilities*, submitted to the Committee on Veterans' Affairs U.S. Senate, UB373 A45 1973

The second major review of the VA disability compensation program is the 1971 ECVARS report. The ECVARS study included an analysis of a survey of 485,000 veterans receiving disability compensation. The comparison group was 14,000 veterans not receiving disability benefits. In the study, economic loss was measured as the difference between median income of veterans with a service-connected disability and veterans without a disability, controlling for comparable educational attainment, age, and place of residence. In contrast to the Bradley Commission study, the ECVARS study included measures for some 700 diagnostic codes. The ECVARS report presented wage loss and compensation paid by diagnostic codes and VA rating category.

The findings of the study were not used to adjust the VA disability rating. The ECVARS study found that mentally ill veterans suffered a greater earnings loss than amputees. The implication of this would have been to give the mentally ill a higher disability rating and amputees a lower rating than they were currently receiving. Overall, 200,000 physically handicapped Vietnam veterans would have lost significant benefits if the recommended changes had been made.

[4] U.S. Government Accountability Office, *Disability Ratings May Not Reflect Veterans' Economic Losses*, GAO/HEHS-97-9, Washington, DC, 1997

This report critiqued the ECVARS report. The study stated that disability compensation exceeded economic loss for 330 of 700 diagnostic codes in the ECVARS study, while it was less than the economic loss for 75 diagnostic codes. Based on this, the report concluded that the rating schedule presented in the ECVARS study was not accurate.

The report pointed out that, even if ECVARS or the actual VA rating system were accurate at the time, it is likely that both are out of date. The GAO also concluded that changes in the VA schedule were made primarily in response to improvements in the measurement of disability rather than to account for how new treatments and changes in the workplace have impacted the earnings of the disabled. Another important consideration the GAO report highlighted was that technology impacted the effectiveness of treating disabilities as well as workplace accommodations for the disabled. This process was likely accelerated with the passage of the Americans with Disabilities Act in 1990.

[5] U.S. Department of Veterans Affairs, *Program Evaluation of Veterans Compensation for Service-Connected Disability Program; Dependency and Indemnity Compensation for Service-Connected Death and Death Compensation Programs; Pension for Non-Service-Connected Disability Program; Pension for Surviving Spouses and Children Program*, Program Evaluation Service, Office of Program Planning and Evaluation, Washington, DC, GPO, 1983

This study reported on the results of a survey to 58 regional offices regarding the adequacy of the VA rating benefits program. Of the 53 offices responding, 45 percent expressed the opinion that VA compensation replaced the income lost by veterans due to their service-connected disabilities while 32 percent did not agree. In narrative remarks, nearly half of the respondents reported that lower ratings are overcompensated. These findings are only suggestive of the true association between disability ranking and income since they are not based on actual earnings data but only on the views of VA administrators.

[6] Mackin, Patrick, and Darling, Kimberly, "Econometric Analysis of 2003 Data on the Post-Service Earnings of Military Retirees." *DMDC Report*, No. 2004-011, August 2005

This study directly examined the relationship between VA disability ratings and earnings. Although the focus of the study was to examine the impact of military retirement on earnings, the study also examined the relationship between VA disability ratings on earnings among retired veterans as well as the relationship between self-reports of disability in the civilian workforce and earnings. The data used in the study were drawn from the 2003 Survey of Retired

Military and the March 2003 Current Population Survey. In regards to the disability rating system, the study indicated that the ratings tend to overcompensate at the low end of the current disability scale and under compensate at the upper end. Furthermore, the study concluded that the impact of the disability rating is to affect the decision to work full-time rather than earnings per se. The report also quantified the high share of retired military personnel with some disability rating. Nearly two-thirds of all retirees have a VA disability rating, with about 25 percent have a rating of at least 60 percent.

[7] Reville, Robert T., Seabury, Seth A., Neuhauser Frank W., Burton, John F., Greenberg, Michael D., "An Evaluation of California's Permanent Disability Rating System." RAND, Santa Monica, CA, 2005

This study included a comprehensive review of the workers' compensation permanent partial disability (PPD) system in California. The authors report that, on average, the California rating system (prior to State Bill 899, which reformed the disability rating system) appeared to function reasonably well in terms of targeting higher benefits to workers with higher proportional losses. However, another important objective of a rating schedule was to ensure that the ratings are distributed equitably for impairments to different parts of the body. The study reports that, by this measure, California's PPD program performed badly.

For example, the authors reported that the overall positive relationship between earnings losses and disability ratings masked considerable differences in the distribution of benefits across impairments to different body parts. They reported that for the lowest disability-rating group (ratings of 1-5 percent), back injuries had the highest estimated loss, about 4.6 percent, while knee injuries had the lowest, about .09 percent. The study also indicated that for all other rating groups, shoulder injuries had substantially higher proportional earnings losses than all other types of injury and that knee injuries have the lowest earnings loss on average, although the loss of gripping power seemed to have the lowest percentage of loss for the highest rating category.

The report also noted that these disparities are even more pronounced if psychiatric impairments are considered. An

important finding of the report was that all psychiatric claims, regardless of rating, had substantial earnings losses, exceeding 38 percent on average. For example, even low-rated psychiatric claims had a higher percentage of loss in earnings than all but the highest-rated claims for the other impairment types. Critically, these findings indicated that earnings losses were strongly correlated with not only the severity of the disability but the type of disability, and that mental disabilities were particularly detrimental to job performance.

[8] Pelowki and Berger. *Quarterly Review of Economics and Finance*, 44 (2004) 102-121

This study examines the dynamic impact of short- and long-term disease on earnings. Findings of this study indicated that health had different consequences for males and females. For example, the authors of this study reported that permanent health conditions had significant negative effects on average hourly wages of workers. Women faced a slightly larger percentage reduction in wages than men as a result of a reduction in the annual hours worked. While females were shown to suffer large reduction in wages, males seem to bear a larger burden in terms of reductions in hours worked. Temporary health conditions had little impact on hourly wages or hours worked. The authors also pointed out that analysis that ignores the difference between temporary and permanent injury would tend to understate the long-term impact of persistent health problems.

[9] Charles, Koki Kerwin, "The Longitudinal Structure of Earnings Losses among Work-Limited Disabled Workers." *The Journal of Human Resources*, Vol. 38, No. 3 (Summer, 2003), 618-646

This study examined the impact of disability over the lifetime of workers. The findings are important because they tell us the likely long-term impact of VA disability. The study reported that disabled men experienced sharp drops in earnings that predated the measured date of onset. The study also reported that earnings recovered rapidly soon after onset, with much of the immediate reduction made up in the first two post-injury years. The study also noted that a modest downward trend followed, resulting in significant long-term losses in expected annual earnings of about 12 percent per year. Finally the study explained that being old at onset,

non-white, more chronically disabled, and less educated caused the losses from disability to be larger and the recovery smaller.

[10] McNeil, John M., *Annual Conference of the Western Economic Association International, Vancouver, British Columbia. June/July 2000*

The study used Survey of Income and Program Participation (SIPP) data and applied several definitions of disability rating. As reported in the study, in 1997, employment rates among those with non-severe disability were 64 percent, while those with severe disability had employment rates of 48 percent, and those with disability but who did not have a reduced availability had employment of 80 percent.

[11] Baldwin, M., Johnson, W. G., "Labor Market Discrimination against Men with Disabilities in the Year of the ADA." *The Journal of Human Resources*, 29 (1), 693-715

A decomposition of wage differentials between disabled and non-disabled workers was performed in this analysis. The study applied data extracted from the 1990 SIPP to estimate the salary discrimination of disabled employees. The authors found that wage discrimination associated with disability resulted in lost employment. They estimated that this discrimination, in 1984, resulted in lost employment of 11,000 for handicapped men (ADA definition) and 9,500 for disabled men. They also found that discrimination did not have a significant impact on earnings.

[12] Yelin, Edward H., "1997 Employment with and without Disabilities in an Age of Insecurity?" *Annals of the American Academy of Political and Social Science*, Vol. 549

This study examined the relationship between disability and employment. The study explored the impact of various factors on earnings such as the general movement of the economy and the incentive impact of disability programs. Data sets used in this analysis were the Current Population Survey and the Health Interview Survey. The authors concluded that various factors impacted earnings and that disability did not completely explain the differentials in employment across groups. The authors pointed to the fact that improvement in technology should lead to an increase in the labor market performance of disabled people.

[13] DeLeire, T., “The Wage and Employment Effects of the Americans with Disabilities Act.” *The Journal of Human Resources*, 35 (4), 693-715

The study reported that disabled Americans were a large and economically disadvantaged group. For example, in 1990 more than 10 percent of working age (18-64) men reported a disability; only 59 percent of these men worked while 95 percent of working age men without disabilities worked. The study also reported that people with disabilities tend to earn less and have lower incomes and are more likely to receive public assistance than people without disabilities.

[14] Burkhauser R., Haveman R., and Wolfe B., “How people with disabilities fare when public policies change, ” *Journal of Policy Analysis and Management* 12(2): 251-269

The study provided evidence on the level of labor market earnings of disabled men relative to a counterpart group without disabilities. The study noted that during a period when overall earnings trends were positive, 1967-1972, the earnings of disabled men rose both absolutely and relative to those of non-disabled males. However, after the oil crisis of the early 1970s, and continuing through to the mid 1980s, the earnings of disabled men fell dramatically. From 1972 to 1987, average earnings of disabled men decreased from nearly \$19,000 to about \$11,000, and from about three-fourths of earnings of the non-disabled to about one-half. Although the absolute earnings of the disabled began increasing toward the end of the 1980s, they continued to erode relative to those of the non-disabled. Another interesting finding of the study is that the erosion in income that occurred over this two-decade period was largely made up for by increases in transfer payments.

The breakdown of earnings reported in this study and family income patterns by race and education are striking. The earnings and incomes of non-white and low-education males with disabilities experienced far more erosion over the 1967-1987 period relative to those of their counterparts without disabilities than did the earnings and incomes of disabled males who were white and had more education. The authors also reported that the proportion of the U.S. male poverty population that was accounted for by men with disabilities increased from about 14 to 17 percent over the decade

of the 1980s. Additionally, they reported that the risk of a disabled man of working age being poor by the end of the 1980s was about 170 percent of the risk experienced by a non-disabled man of working age.

Finally, the study reported that the disabled in many European countries were much better-off economically than those in the United States. The combination of substantially higher earnings replacement rates in the income support programs of European countries (up to 80 percent), in combination with the extensive in-kind benefits (including both health insurance and housing assistance) explained this result.

[15] Haveman, R., Wolfe, B., Buron, L., and Hill, S., “The Loss of Earnings Capability from Disability/Health Limitations: Toward a New Social Indicator Institute for Research on Poverty.” *Discussion Paper* no. 1016-93, 1993

This study focused on lost earnings capabilities that were attributable to the actual limitation associated with disability. Based on this measure of earnings, the authors estimated that the aggregate loss of earnings was \$131 billion in 1973; this was 5.3 percent of aggregate earnings capabilities (in 1988 dollars).

[16] Stern, Steven. “Measuring the Effect of Disability on Labor Force Participation.” *The Journal of Human Resources*, Vol. 24, No. 3 (Summer, 1989), 361-295

The study reported that disability was strongly related to employment. Stern applied several data sets and used a simultaneous equation approach to account for the possibilities that measurements of disability are endogenous (that is to say, that a reduction in earnings was due to other factors that impact the disability rating rather than the disability rating itself impacting earnings). Furthermore, he found that endogenous disability measurement did not introduce a large bias in the association between disability and employment. The study also reported that any bias that did exist would result in an underestimation of the impact of disability on employment. However, Krieder [18] in a study published in the same Journal, using the measure of disability included in the Current Population Study and applying a more comprehensive methodology, reported that the estimated bias was

large and was observed in the opposite direction than was reported in the Stern study.

[17] Kreider, Brent, “Latent Work Disability and Reporting Bias”
***The Journal of Human Resources*, Vol. 34, No. 4 (Autumn, 1999), 734-769**

A measure of “true” disability was constructed as a continuous index of unobserved work limitations using information from the Health and Retirement Study. Estimates from a simultaneous model of work participation, disability, and income flows suggested that non-workers tended to substantially over-report limitations, with over-reporting most prevalent among non-working women, high school dropouts, nonwhites, and former blue collar workers. Former white-collar workers were found to be unlikely to over-report limitations. Use of a “biased” disability measure in the model led to an upward-biased estimate of the effect of limitations on non-work and to a downward-biased estimate on the effect of income.

[18] Bound, John, “The Health and Earnings of Rejected Disability Insurance Applicants,” ***The American Economic Review*, Vol. 79, No. 3. (Jun, 1989), pp. 482-503**

The study examined the impact of disability on labor force participation and mortality. To account for the possibility that incentives inherent in the SSI program resulted in reduced labor force performance rather than the underlying disability, the authors compared the experience of men who received disability payments and men who did not receive disability payments but applied for them. Based on this comparison, he concluded that at least a significant portion of the poor labor force performance of disabled workers could be attributed to their disability rather than to negative work incentives. He also reported that successful applicants to the disability insurance program experienced higher death rates than was the case for non-disabled people.

[19] Krueger, A., and Kruse D., “Labor Market Effects of Spinal Cord Injuries in the Dawn of the Computer Age,” ***Working paper No. 5302 National Bureau of Economics Research, Cambridge, MA, 1995***

The study focused on the disabled whose impairment resulted from spinal cord injuries. They found that those with computer skills did

not face an earnings loss after the onset of disability, in comparison to those without such skills, who experienced substantial disability-related earnings losses. The study suggests that increasing the use of computers may open opportunities for employment for those with disabilities and hence mitigate future losses in earnings attributable to the onset of disabling conditions.

[20] Conti, Rena, Berndt, Ernst, Frank, Richard, “Early Retirement and DI/SSI Applications: Exploring the Impact of Depression” Mimeo, Department of Healthcare Policy, Harvard University, 2006

The study applied a before and after differences-in-differences specification to examine the direct impact of depression on applications for disability insurance. Importantly, the study included a measure of the interactive impact of depression and physical illness on these outcome measures. First, the study reported that depression had a large impact on earnings and disability rating. Second, the study found that a life-altering shock such as the death of a spouse had a much larger impact on these outcomes if the survivor was depressed before the shock occurred.

[21] Dremsa, T.L., Engel, C.C. Jr., Liu, X., Johantgen M., Smith S “Do Mental Disorders Matter? A Study of Absenteeism among Care Seeking Gulf War Veterans with Ill Defined Conditions and Musculoskeletal Disorders,” *Occup Environ Med*, 59(8): 532-536, 2002

The aim of this study was to investigate the extent that common psychological conditions contributed to lost work among individuals with musculoskeletal and ill-defined conditions. To do this, the authors applied data from a cross-sectional health- and work-related survey evaluating Gulf War veterans seeking Department of Defense healthcare for Gulf War-related health concerns. The method used was an ordered-probit model to study whether a provider diagnosed musculoskeletal condition or "signs, symptoms, and ill defined conditions" (ICD-9 codes 780–799) had an effect on recent lost work in the presence of one or more psychological conditions, after controlling for socio-demographic variables.

Bivariate analysis revealed that musculoskeletal conditions, ill-defined conditions, and psychological conditions were positively associated with lost work. Multivariate analysis showed an

independent effect of both psychological conditions and musculoskeletal conditions. A significant interaction existed between psychological conditions and musculoskeletal conditions: the presence of a coexisting psychological condition considerably increased the likelihood that a musculoskeletal disorder resulted in lost work, or vice versa. The authors of the study concluded that psychological conditions appeared to be an important contributor to absenteeism among individuals with musculoskeletal and ill-defined conditions. A limitation of the cross-sectional design was the inability to sequence the onset of conditions.

[22] Savoca, Elizabeth, and Rosenheck, Robert, "The Civilian Labor Market Experiences of Vietnam-Era Veterans: The Influence of Psychiatric Disorders," *Journal of Mental Health Policy and Economics*, 3(4) 2002: 199-207

Using a nationally representative survey of Vietnam-Era Veterans, this study analyzed the contribution of psychiatric health towards explaining the differences in the post-service civilian wages, hours worked, and employment probabilities among male veterans.

The analysis was based on data from the National Survey of the Vietnam Generation, a survey completed in the late 1980s of persons who were on active duty during the years of the Vietnam War, 1964-1975. Three outcome variables were studied—the hourly wage rate, usual hours worked per week, and a 01 indicator for whether the respondent was currently working. Lifetime diagnoses of four categories of mental disorders, major depression, anxiety disorders, substance abuse/dependence, and combat-related posttraumatic stress disorder (PTSD), were constructed from the US NIMH Diagnostic Interview Schedule, administered by the survey. The employment probability equation was estimated using probit; the hourly earnings and hours worked equations were estimated using ordinary least squares conditioned on the status of being employed.

The study found that PTSD significantly lowered the likelihood of working and, for those veterans who were working, their hourly wages. On average, a veteran with a lifetime diagnosis of PTSD was 8.5 percentage points less likely to be currently working than was a veteran who did not meet diagnostic criteria. Among those who were employed, veterans with PTSD earned, on average, \$2.38 less

per hour (\$3.61 in 1999 U.S. dollars). Anxiety disorders and major depression had nearly as large an effect on employment rates, as did PTSD. Major depression was also found to have lowered hourly wages by an average of \$6.77 per hour (\$10.17 in 1999 U.S. dollars). However, psychiatric health did not affect typical hours worked per week.

This study contributed new information on several issues. Previous research on the extent to which PTSD interfered with readjustment to civilian life had focused on quality-of-life outcomes such as overall well being, physical health, and homelessness. Previous research on mental health and earnings had focused on annual earnings. This study makes hourly wage comparisons, a closer measure of productivity differences because they represent differences in pay for the same input of time. Finally, this study demonstrated that the effects of psychiatric health were as important as the influence of non-health characteristics such as education and experience in signaling earnings potential in the civilian labor market. The authors note that the importance of PTSD might be specific to veterans of the Vietnam War, and might not pertain to persons suffering non-combat-related PTSD.

[23] Murdoch, Maureen, van Ryn, Michelle, Hodges, James, Cowper, Diane. "Mitigating Effect of Department of Veterans Affairs Disability Benefits for Post-Traumatic Stress Disorder on Low Income." *Military Medicine*, Feb 2005, Vol. 170 Issue 2: 137-140

This study assessed the impact of VA disability benefits for post-traumatic stress disorder (PTSD) on veterans' odds of poverty. The authors focused on women and African American veterans, because they are less likely than other groups to receive PTSD disability benefits. The study used a cross-sectional survey of 4,918 veterans who applied for VA disability benefits for PTSD between 1994 and 1998. The authors linked survey responses to administrative data. Overall, they found 42 percent reported low income (defined as household income \leq \$20,000 per year). Men's and women's odds of reporting poverty were similar, but receipt of PTSD disability benefits mediated African American veterans' odds of poverty. Veterans' odds of impoverishment were reduced considerably if they received VA PTSD disability benefits and identified themselves

as disabled. From this the authors conclude that VA disability benefits for PTSD reduced odds of impoverishment for psychiatrically ill veterans. This effect appeared to be especially important for African American veterans and for veterans self-identifying as disabled.

[24] Wittenburg, David, and Favreault, Melissa, “ Measuring the Effect of Disability on Labor Force Participation: Safety Net or Tangled Web? An Overview of Programs and Services for Adults with Disabilities.” *Urban Institute Report, An Urban Institute Program to Assess Changing Social Policies Assessing the New Federalism, Occasional Paper 68, 2003*

The authors reported that health difficulties are highly concentrated in low-income populations. Low-income adults with disabilities were less likely to be employed than other low-income adults. Both men and women without disabilities were more than twice as likely to be working as their counterparts with disabilities.

[25] Bye, Barry V., and Reley, F. Gerald, “Eliminating the Medicare Waiting Period for Social Security Disabled Workers and Beneficiaries,” *Social Security Bulletin 52 (May): 2-15*

The study followed the cohort of 18,782 people who were awarded benefits and enrolled in the Social Security Disability Insurance Program in 1972. The percentages of this cohort who died or recovered (and hence were dropped from the program) during the next 2 years were determined from SSA records. The study included 2-year death rates and recovery rates for this group by demographic categories, occupation, and diagnostic group. This cohort of disabled people was in bad health, as evidenced by the fact that nearly 13 percent died within 2 years. Only 5.3 percent recovered and were dropped from the SSA rolls. The 2-year mortality rates were higher for males and Blacks, and also rose with age at entry.

The study also indicated that there was a wide variance of death rates by diagnostic group. For example, about 65% of those who were disabled by cancers (neoplasms) died within 2 years of admission to the disability insurance program. High mortality rates were also associated with genitourinary and digestive conditions: 25 and 22.5 percent died within 2 years. People whose disabilities were

caused by traumatic injuries had the lowest mortality rate (2.6%), followed by musculoskeletal impairments (2.7%). Disabled beneficiaries whose limitations were caused by infectious diseases and traumatic injuries reported the highest recovery rates (23.3% and 22.1%, respectively). Overall these findings indicate that many of the disabilities associated with military service may not result in increases in mortality rates. However, the short two-year window of the study may have resulted in an underestimate of the impact of disability on mortality.

Other literature

Oi, Walter Y., "Employment and Benefits for People with Diverse Disabilities," In *Disability Work and Cash Benefits*, Marshaw, Jerry, Reno, Virginia, Burkhauser, Richard, Berkowitz, Monroe, Editors, W.E. Upjohn Institute for Employment Research, Kalamazoo, Michigan, 1996

This chapter was one of the few examinations of the literature as it related to economic studies on the impact of disability and death. The chapter also examined the theoretical and empirical impact of disability on labor force participation, as well as giving detailed descriptive data of the relationship between disability and earnings. The chapter summarized two studies that found a positive association between disability and death (Bound 1989 and Bye and Riley 1989).

Chapter 3. Disincentives to work

Disability programs can affect the incentives to work through income and work substitution effects, two well-established economic concepts. Substitution effects between working and taking the benefit may occur if program eligibility is impacted by employment or earning levels. Although VA disability benefits generally are not contingent on work status, to receive the Individual Unemployability (IU) benefit, individuals must be deemed unable to work.

With this benefit in mind, we review the literature related to the work substitution effect of disability programs that have employment and earnings thresholds. In contrast to substitution effects, income effects refer to the fact that as individuals receive more income, they tend to place more value on additional leisure and therefore work fewer hours. As such, the basic VA disability program, which does not restrict people from working, could cause some disincentives to work through the income effect. Therefore, we examine the literature on income effects resulting from receiving disability compensation payments.

The impact on work incentives of civilian disability benefits programs

There has been concern that benefit programs, such as the VA's IU program, that have employment and earnings thresholds discourage people who may be able to work in some capacity from working at all. Under these programs, individuals who can either earn small amounts or work part-time would lose their benefits. Some researchers have postulated that such programs have encouraged people to drop out of the workforce to become eligible for the benefits. Many researchers have examined the relationship of eligibility criteria for disability benefits and increases in the number of beneficiaries (Chen and van der Klaauw [1]). Several studies suggest that the significant increases in civilian or

Supplemental Security Income (SSI) disability program caseloads in recent years are evidence of a growing problem of work disincentives [2], [3].

The literature on how benefits with employment thresholds may create disincentives to work focuses primarily on the Social Security Administration's (SSA) Disability Compensation Programs. Under the disability determination process for Social Security Disability Insurance (SSDI) and SSI, individuals are judged on whether they meet the SSA definition of disabled, which is based on the inability to work. For SSDI, there is a full 5-month waiting period, after the onset date of the disability before benefits are paid to a beneficiary. The individual is eligible for benefits starting in the sixth month, and the SSDI beneficiary receives the first payment in the seventh month. Once deemed eligible, SSDI beneficiaries lose their eligibility if earnings are above the poverty line. This feature in combination with the required period of unemployment results in a disincentive to seek employment among SSDI beneficiaries.

The VA's IU program has similar eligibility criteria as the SSDI program in terms of employment after IU status has been established. This benefit can provide increased VA schedular disability ratings and payments if veterans are categorized as unemployable even though they have less than a 100 percent disability rating. Like the SSDI program the IU benefit has an unemployment criterion for initial and continuing program eligibility. Under both programs, eligibility is contingent on annual earning being no more than the poverty line.⁸ Although we found no studies that directly examine the link between eligibility criteria for the IU benefit and employment of disabled veterans, we were able to find several studies that examine the impact of eligibility for the SSDI program and employment.

The impact that this sort of incentive might have for disabled veterans is of growing concern considering the fact that the number

⁸ That said, after a veteran has received compensation at any level of disability for 20 years, including total disability benefits based on IU, that compensation rate is protected.

of veterans receiving the IU benefit has increased dramatically. According to the GAO, there is no clear explanation for the observed increase. The degree to which this increase is related to increases in applications for the SSDI program is unclear. As reported in the ESI literature review, one explanation for this increase is that an increase in the prevalence of service-connected PTSD and other mental disorders among veterans may help account for the increase in IU ratings. Conceivably, veterans with mental disorders could be employed above the IU eligibility threshold but choose not to out of fear that they will lose the IU benefit. Although no study directly examines this question, several studies examine the impact of disincentives to work built into the SSDI program. Over all, these studies do not conclusively report that these incentives either did or did not impact employment:

- Kreider [4] examines male labor force participation and finds that the decline in employment is the result of increasingly attractive alternatives to work. The study shows less responsiveness to changes in benefit levels but greater responses to changes in SSDI rules. This finding shows the importance of expected future income in the application decision of workers for disability compensation. Kreider's model suggests that the accelerated growth of the disability program is a rational response to incentives subject to the control of policy makers.
- Gruber and Kubik [5] looked into the effect of SSDI, which has been criticized as potentially creating a large drop in the labor force participation of older workers. The authors studied what happened when the federal government raised the rate at which SSDI claims were denied. They found that increases in denial rates for SSDI led to higher work force participation and that the increase in work incentives appears to have been more efficiently targeted to the more able portion of male participants.
- Parsons [6] attributes most of the decline in labor force participation by prime-aged males to changes in the generosity of social welfare transfers, particularly SSDI.
- Haveman, De Jong, and Wolfe [7] found that the declining labor force participation of older males was only partly (20 percent) due to the increase in federal disability benefits. Other

factors related to the decline in work may include spousal earnings, decreased stigma associated with early retirement and more generous Social Security retirement benefits at earlier ages.

The impact on work incentive of the VA's disability benefits program

The VA disability benefits program is intended to compensate for the average lost earnings capacity due to being disabled. The literature is rich with studies on how disabilities reduce labor market productivity, resulting in lower earnings capacity for disabled people. The VA program is intended to close the average earnings gap, but the question raised is that in doing so, does the program also create disincentives to work? Little has been done to explore the impact that VA disability benefits may have on the incentive to work.

Conceptually, because VA disability benefits are generally not tied to employment, the benefit formula should not directly affect labor force participation. However, the disability benefits do provide individuals with a stream of payments that raises their income, presumably to the average level of income observed for comparable non-disabled individuals. The provision of non-earned income creates the potential for the disabled individuals to respond to an income effect, which may create a disincentive to work as many hours as they might work if they had not received the non-earned income.⁹

This idea is best illustrated by a simple example. Suppose an individual would be earning \$52,000 a year from a full-time job with overtime (50-hours a week) if they were not disabled. Their disability restricts them from being able to participate heavily in overtime and as a result they earn \$46,800 instead for, on average, a 45-hour a week job. If the government were to pay them \$5,200 a year to make up for their loss in earnings, it would be analogous to raising their income from their 45-hour a week job. Economic

⁹ For an explanation of this construct, see the Handbook of Labor Economics, chapter one, Pencavel [13].

theory and empirical findings suggest that this increase in income would likely lead them to reduce their hours worked, perhaps to an average of 43-hours a week and \$44,720 in earning, as they choose leisure over work. See Pencavel [8] for details of how the income effect may work to create work hours disincentives.

We were unable to find any research that directly examined the link between VA disability benefits and incentives to work. Therefore, to inform this issue, we looked into literature on the impact income changes have on labor market participation. First, we summarize the research on the effect retirement income has on the decision to retire and the degree to which this income impacts work behavior after retirement. Second, we summarize studies on how income levels affect labor market participation. These studies attempt to separate the direct impact that changes in wages have on the incentive to work and the indirect impact they have through changing income. This latter income effect is predicated on the view that as people become wealthier, they tend to value leisure more and thus work less.

Relationship between retirement income and the incentive to work

Studies that examine the relationship between retirement income and the incentive to work suggest that many retirees do work, either part-time or full-time, post retirement. In regards to the impact of income on work post retirement, most studies suggest that more income leads to earlier retirement and less working after retirement. These studies include the following:

- Gustmand and Stenmeire [9] examined the impact that large changes in the value of stock, which occurred during the 1990s, had on post-retirement work. Supporting the hypothesis that changes in wealth impact work post retirement, the study indicated that the increase in the stock market resulted in over a 3-percentage point decrease in retirement age. The study also observes that this decrease in the retirement age was wiped out by the subsequent decline in stock market value.
- Andrew A. Samwick [10] found in a working paper that a significant economic determinant of the probability of

retirement is the saving rate for retirement. The rate of savings and not the level of retirement wealth was the important predictor of retirement age. This indicates that patterns of wealth accumulation may be correlated with other factors that impact retirement age but that the actual level of saving may not be an important predictor of retirement age.

In regards to post-retirement work, research indicates that a significant portion of retired people return to work on either a part-time or full-time basis. This research indicates that there may or may not be a strong connection between wealth and work post-retirement. Studies that examined the impact of post-retirement income on the propensity to work include the following:

- Maestas [11] reports that just under a third of retirees work part-time at some point after retirement and that just under half work either part-time or full-time post retirement. He shows that un-retirement (the movement from retirement back to working full-time or part-time) is not associated with poor retirement planning or low income or wealth. The study indicates that un-retirement rates respond little to large changes in financial variables, which suggests that these changes were anticipated before retirement. He also reports that un-retirement is not due to wealth shocks.
- Ruhn [12] reports high rates of post-retirement work. He also reports that those who work part-time after retirement rarely do so in the same job as they worked before retirement. Finally, he notes that pensions are associated with less work post retirement. Although suggestive of an income effect on work post retirement, the author also points out that this association may be due to other factors associated with having pensions that are not fully accounted for in this analysis.
- Hugo Benitez-Silva [13] reported that health status and disability benefits were negatively associated with work post retirement. He pointed out that the negative association between disability benefits and work post retirement could be the result of stipulations on work that are tied to disability benefits.

Income and labor market supply

There is considerable literature on how income levels affect work incentives. Economic theory states that increases in wages have a direct effect in inducing people to work more but also have an indirect effect of raising income, which decreases the incentive to work. Economists hypothesize that as people become wealthier they value leisure more and, at higher levels of income, the net effect of a wage increase is to reduce the desire to work. This implies that at high income levels, an increase in income may result in a decrease in the hours worked.

Chapter one of the Handbook of Labor Economics by Pencavel [8] provides an extensive review of the literature, which focuses on the impact of wages on labor supply. The Handbook provides estimates from numerous studies of how income affects hours worked for men in their working years. The first sets of estimates are from studies of the United States and the United Kingdom. The second set examined the results of negative income experiments, which were performed in the late 1960s and 1970s to examine the incentive effects of various programs on the incentive to work for low-income adults.

Estimates for working age men in the United States and the United Kingdom

All the income effect estimates listed in the chapter are negative, providing strong evidence that increases in income result in a decline in the number of hours worked. This suggests that disability payments that raise an individual's income would create a disincentive to work through the income effect. Table 5 lists income elasticity estimates (how a percentage change in income affects a percentage change in hours worked) for working age men in the United States. Estimates average about $-.20$ and range from 0 to $-.70$. A $-.20$ percent income elasticity estimate indicates that a 10 percent increase in income results in a 2 percent reduction in hours worked. Similarly, table 6 lists estimates from studies on workers in the United Kingdom. These estimates are fairly similar to U.S. estimates (averaging $-.29$ percent and ranging from $-.07$ to $-.5$).

Table 5. Estimates of the income effect of wage changes for working age men in the United States (see [8])

Sources for study estimates	Estimated income effect
Ashenfelter, Orley, and Heckman, James, (1973),	-0.27
Bloch, Farrell, (1973), "The Allocation of time to market & non-market work within a family unit," unpublished Ph.D. dissertation, Department of Economics, Stanford University	-0.06
Boskin, Michael (1973), "The Economics of Labor Supply." In G.G. Cain and H. W. Watts, Income maintenance and labor supply. Chicago Markham, 163-181	-0.41
DaVanzo, Julie, DeTray, Dennis, and Greenberg, David, (1973), "Estimating labor supply response: a sensitivity analysis," R-1372-OEO, The RAND Corporation.	-0.04
Dickinson, James (1974), "Labor supply of family members," in: James N. Morgan, et al. eds. "Five Thousand American Families – Patterns of Economic Progress, Functional Form and Labor Supply, Michigan, vol. I, 177-250	-0.08
Fleisher, Belton, Parsons, Donald, and Porter, Richard, (1973), " Asset adjustments and labor supply of older workers," in Cain, G., and Watts, H., Income Maintenance and Labor Supply, Chicago: Markham, 279-327, 1973	-0.23
Garfinkel, Irwin, (1973), "Estimating the Labor Supply of the Negative Income Tax," G. G. Cain and H. W. Watts, "Income Maintenance & Labor Supply," Chicago: Markham, 279-327	0
Greenberg, David, and Kostner, Marvin, "(1973), Income Guarantees & the Working Poor: the effect of Income-maintenance programs on the hours of work of male Family Heads (1973),	-0.29
Ham. John, (1982) "Estimation of a labor supply model with censoring due to unemployment and underemployment," Review of Economic Studies, 49(157): 333-354	-0.11
Hausman, J., and Ruud, P., (1984), "Family labor supply with taxes," American Economic review, Papers and Proceedings, 74(2)	-0.63
Kneisner, Thomas, (1976), "An Indirect Test of the Complementarity in a Family Labor Supply Model: Econometrica, 44(4): 651-669	-0.01
Kosters, Marvin (1969), "Effects of an Income Tax on Labor Supply" in Arnold C. Harberger and Martin J. Bailey, eds., The taxation of Income for Capital/ Washington D.C: Studies of Government Finance, Brookings Institution, 302-324	-0.14
Master, Stanley; Garfinkel, Irwin (1977), Estimating the Labor Supply Effects of Income-Maintenance Programs," New York: Institute for Research on Poverty Monograph Series, Academic Press	-0.05
Wales, T.J., Woodland, A.D., (1979) "Labor Supply and Progressive Taxes," Review of Economic Studies. 46(1) 83-95	-0.70

Table 6. Estimates of the income effect of wage changes for working age men in the United Kingdom (see [8])

Sources for study estimates	Estimated income effect
Ashworth, J.S., Ulph D.T., (1981), Endogeniety I: Estimating Labor Supply with Piecewise Linear Budget Constraints," in C.V. Brown, ed., Taxation and Labor Supply, London: George Allen and Unwin, 53-68	-0.36

Atkinson, A.B., Stern N. H., (1980), "On the Switch from direct to indirect taxation," Journal of Public Economics, 14(2): 195-224	-0.07
Blundell, Richard, and Walker, Ian (1982), Modeling the Joint Determination of Household Labor Supplies and Commodity Demands: Economic Journal, 92(366): 351-364	-0.36
Blundell, Richard, Walker, Ian, (1983), "Limited Dependant Variables in Demand Analysis: an Application to Modeling Family Labor Supply & Commodity Demand Behavior," Discussion Paper ES126, Department of Econometrics & Social Statistics, University of Mansfield	-0.20
Brown, C.V., Levin, E., Ulph, D. T., (1976), "Estimates of Labor Hours Supplied by Married Male Workers in Great Britain: Scottish Journal of Political Economy, 23(3): 261-277	-0.35
Brown, C. V., Levin E. J., Rosa P. J.; Ruffell P.J., Ulph. D. T., (1982) {Single worker}, "Direct Taxation and Short Run Labor Supply," H. M. Treasury Project, Working Papers Nos. 1 to 12, Department of Economics," University of Sterling	-0.50
Brown, C. V., Levin, E. J., Rosa, P. J., Ruffell, P.J., Ulph. D. T., (1982) {Two worker}, "Direct Taxation and Short Run Labor Supply", H. M. Treasury Project, Working Papers Nos. 1 to 12, Department of Economics, University of Sterling	-0.44
Layard, Richard, (1978), "Hours Supplied by British Married Men with Endogenous Overtime," Discussion Paper No. 30 Centre of Labor Economics, Long School of Economics	-0.04

Estimates drawn from negative income tax experiments

Another source of estimates of how income impacts work incentives can be drawn from various negative income tax (NIT) experiments that were conducted in the United States in the decade from 1968 to 1978. These experiments selected a sample of households in a given area and then gave a fraction of the sample (the experimental household) a different budget constraint while continuing to observe the other households (the controls). Typically the experiments changed the household budget constraint by giving the participants a grant, which varied in size. The dependent variable for the statistical analyses was individual work behavior, including hours worked per week and labor force participation.

As described by Pencavel [8], there were several reasons why, in practice, these studies did not meet the gold standard of a scientific experiment. First, the sample of households studied was drawn selectively from the low-income population. This was a natural decision in view of the fact that the sponsors of the studies were concerned with welfare reform, but its effect was to introduce problems derived from the truncation of a variable (income) directly related to the major variable of interest (labor supply). Second, this low-income sample of households was then not allocated randomly between the experimental and control groups;

rather the allocation design was more complicated in that the studies were designed to mitigate the cost of the experiment. Third, during each experiment, changes took place outside the experiment's control which affected the budget constraints of the participating household and which may have affected the control experimental households differently. Finally, as in all welfare and tax programs, there was an incentive for participants to misrepresent their income.

Even with these caveats, much can be learned from the results of these experiments. Table 7 lists the estimation results. On average, income elasticities from these studies were just $-.11$. The fact that these estimates were lower than the estimates presented earlier could be due to the nature of these studies or because low-income people are less sensitive to income effects than higher income adults.

Table 7. Estimates of the income effect of wage changes from negative income experiment in the United States (see [8])

Sources for study estimates	Estimated income effect
Ashenfelter, Orley, (1978), "The Labor Supply Response of Wage Earnings," in: John L. Palmer and Joseph A. Heckman, eds., <i>Welfare in Rural Areas: the North Carolina - Iowa Income Maintenance Experiment</i> , Washington, D.C.: Brookings, 109-138	-0.02
Ashenfelter, Orley, (1978), "Unemployment as a Constraint on Labor Market Behavior," in Artis, M.J., Nobay, A.R., <i>Contemporary Economic Analysis</i> . The Association of University Teachers of Economics, 149-181	-0.01
Burtless, Gary, Greenberg, David, (1982) {3 year}, "Inferences Concerning Labor Supply Behavior Based on Limited Duration Experiment," <i>American Economic Review</i> , 72(3): 488-497	-0.04
Burtless, Gary, Greenberg, David, (1982) {5 year}. "Inferences Concerning Labor Supply Behavior Based on Limited Duration Experiment," <i>American Economic Review</i> , 72(3): 488-497	-0.18
Hausman, Jerry, Wise, David, (1977), "Social Experimentation, Truncated Distribution, and Efficient Estimation," <i>Econometrica</i>	-0.01
Johnson, Terry, Pencavel, John, (1982), "Forecasting the Effects of a Negative Income Tax Program," <i>Industrial and Labor Relations Review</i> , 35(2): 221-234	-0.29
Johnson, Terry, Pencavel, John (1984), "Dynamic Hours of Work Functions for Husbands, Wives and Single Families," <i>Econometric</i> , 52(2): 363-390	-0.17
Keeley, Michael, Robins, Philip, (1980), "The Design of Social Experiments: a Critique of the Consllick-Watts Assignment Model," in R. G. Ehrenberg, ed., <i>Research in Labor Economics</i> , Vol 3, 293-333	-0.14

Summary

Although we found no study that directly estimates the relationship between the veteran disability benefit and work incentives, numerous studies report that increased income is associated with at least a small to moderate reduction in hours worked. Studies of post-retirement work patterns suggest a similar relationship between income and hours worked. Studies indicate that changes in post retirement income are negatively associated with post-retirement work (either part-time or full-time) after retirement and the age at which an individual chooses to retire. Overall, the evidence strongly supports the contention that as income increases the incentive to work declines.

It should be noted that statistically significant findings that the income effect creates a work disincentive does not imply that the work disincentive is substantial in size. As mentioned earlier, an income elasticity estimate of $-.20$ percent indicates that a 10 percent increase in income would result in a 2 percent reduction in hours worked. Evidence that the income effect creates a work disincentive suggests that VA disability payments may contribute to disincentives to work that are naturally associated with higher income levels. However, the evidence cited does not specifically investigate the relationship between veterans' disability benefits and a work disincentive for veterans.

Literature reviewed

We provide an annotated bibliography of our citations containing a brief abstract of each source document. The abstracts were drawn heavily from the authors' own abstracts, when they were available. If authors' abstracts were not available, we summarized the relevant material from the citation.

[1] Chen, Susan, and van der Klaauw, H. Wilbert. “The Work Disincentive Effects of The Disability Insurance Program in the 1990s.” Triangle Census Research Data Center, Duke University, NC, Dec 2004

The authors of this article evaluated the work disincentive effects of the disability insurance program during the 1990s. Using a comparison group approach, their estimates indicate that the labor force participation rate of SSDI applicants would have been at most 23 percent higher had none received benefits compared to the case where all received benefits. In addition, a regression discontinuity approach was used to find smaller labor supply responses for a group of applicants whose disability determination was based on vocational factors. In summary, their findings show that during the 1990s the work disincentive effects of the SSDI program were relatively small. The majority of applicants would not have worked even if none received SSDI.

[2] U.S. Government Accountability Office, *Social Security Disability: Multiple Factors Affect Return to Work*, GAO/T-HEHS-99-82, Washington, DC: March 1999

This report focused on the SSDI and SSI program and the programs' weakness in promoting return to work. It noted that “the program eligibility requirements and the application process encourage people to focus on their inabilities, not their abilities.” In order to understand the factors that can assist beneficiaries in entering the workforce, the GAO conducted survey interviews with 69 SSDI beneficiaries. The results of this survey showed that the beneficiaries were unaware of the SSDI program's incentives for limiting risks associated with working. In concluding, the GAO discussed the need to reform the current work incentives of the SSA disability program; however, because of the complex nature between earning and disability benefits, they note that there will be many challenges and tradeoffs in designing appropriate reforms.

[3] Leonard, Jonathan S., “Labor Supply Incentives and Disincentives for the Disabled,” in M. Berkowitz and M.A. Hill (eds.), *Disability and the Labor Market: Economic Problems, Policies, and Programs* (Ithaca, NY: ILR Press, 1986), pp. 64-94.

In his article, Leonard focused on the links between disability, benefit status and labor force non-participation. He estimated how

people have adapted their work and labor force decisions to the incentives of the Social Security disability programs. Leonard's research illustrates that disability transfer programs lead to some reduction in the labor supply. The more generous programs will draw more people out of the labor force.

[4] Kreider, Brent, Social Security Disability Insurance: Applications, Awards, and Lifetime Income Flows. *Journal of Labor Economics*, Vol. 17, No. 4, Part 1 (Oct 1999), 784-827

The author provides new support on the impact of SSDI on male labor force participation based on estimates from a structural model of applications, awards, and state-contingent lifetime income flows. This article found significant work disincentive effects associated with the disability program. However, the results suggest that the expansion in real SSDI benefit levels over the last several decades made a fairly small contribution to the observed decline in male labor force participation rates.

[5] Gruber, Jonathan, and Jeffrey, D., Kubik, Disability Insurance Rejection Rates and the Labor Supply of Older Workers. *Journal of Public Economics* 64 (1997): 1-23

The authors examined the effects of a policy response designed to address the change in the labor force participation rates of older workers in connection with raising the rate at which SSDI claims are denied. Gruber and Kubik found that increased denial rates led to higher labor force participation. This suggests that there is some moral hazard involved with the imperfect targeting of SSDI. They also found that the increase in work incentives appears to have been efficiently targeted to the more able portion of the older male participants.

[6] Parsons, Donald O., The Decline in Male Labor Force Participation, *The Journal of Political Economy*, Vol. 88, No. 1 (Feb. 1990), 117-134

Parsons finds that the recent increase in nonparticipation in the labor force of males can be largely explained by the increase in generosity of social welfare transfers, particularly SSDI payments. The author says that the fact that SS benefits have increased and are

progressive (low-wage workers have relatively high benefits) suggests the hypothesis that this program has (1) induced larger numbers of workers to leave the labor force and (2) differentially affected low-wage workers.

[7] Haveman, Robert, De Jong, Philip, and Wolfe, Barbara, Disability and the Work Decisions of Older Men. *The Quarterly Journal of Economics*, Vol. 106, No. 3 (Aug. 1991): 939-949

The authors look at the potential causal relationship between the availability and generosity of disability transfers and the nonparticipation rates of older men. The research finds that the response of workers to increasingly generous disability benefits can account for no more than 20 percent of the decrease in older worker labor force participation observed in recent decades.

[8] Pencavel, John, "Labor Supply of Men: Survey," In Chapter one of *Handbook of Labor Economics Volume 1*, Edited by Ashenfelter, Orley, and Richard Layard, Elsevier Science, Amsterdam, Netherlands, 1986

This chapter included an extensive review of the literature on studies that examined the impact of wages on market performance. Also included were several tables that exhibited income effect estimates.

[9] Gustman, Alan, and Steinmeier, Thomas, "Retirement and the Stock Market Bubble," *National Bureau of Economic Research Working Paper 9404*, Dec 2002

This paper specified and estimated a structural dynamic stochastic model of the way individuals make retirement and saving choices in an uncertain world. It then applied that model to analyze the effects of the stock market bubble on retirement behavior. The model included individual variation both in retirement preferences and in time preferences. Estimates were based on information covering the period 1992 through 2000 from the Health and Retirement Study (HRS), a panel survey of retirement age respondents and their spouses. The extraordinary returns in the stock market in the late 1990s, which more than doubled stock prices and unexpectedly increased the value of a mixed portfolio by nearly 60 percent, increased retirement for the HRS sample of workers by over 3

percentage points by the turn of the century and would have decreased the average retirement age by about a quarter of a year if it had not been interrupted. The subsequent decline in the market, which very nearly wiped out the gains that had been made during the preceding surge, neutralized the effect of the preceding stock market gains on retirement. The effects of the bubble were to increase retirement as long as the bubble continued, but any continuing effects of the bubble after its end will probably be minimal.

[10] Samwick, Andrew, "New Evidence on Pensions, Social Security, and the Timing of Retirement." *Journal of Public Economics* 70 (1998), April 1998 (207-236).

This study used a unique data set that links economic and demographic information of households with the details of their pension formulas. Using this data set, the author estimated the combined effect of Social Security and pension benefits on the probability of retirement in a cross-section of the population near retirement age. The accrual rate of retirement wealth was shown to be a significant determinant of the probability of retirement. Simulations of extensions in pension coverage comparable to those that occurred in the early postwar period can account for one fourth of the contemporaneous decline in labor force participation rates.

[11] Maestas, Nicole, "Back to Work Expectations and Realizations of Work after Retirement," *RAND working paper (WR-196-1)*, Aug 2005

The study found that that un-retirement (the movement from retirement back to work) is not associated with poor retirement planning or low income or wealth. The study indicated that un-retirement rates respond little to large changes in financial variables, which suggests that these changes were mostly anticipated before retirement. The author concludes that un-retirement signals the empirical importance of multi-stage retirement transitions, much like partial retirement.

[12] Ruhm, Christopher J., "Bridge Jobs and Partial Retirement," *Journal of Labor Economics*, 1990, 8(4): 482-501

The author reports that there are high rates of post-retirement work. He also notes that those who work part-time after retirement rarely do so in the same job that they worked at before retirement. Finally, he states that pensions are associated with less work past retirement. Although suggestive of an income effect on work post retirement, the author also points out that this association may be due to other factors associated with having pensions that are not fully accounted for in this analysis.

[13] Benitez-Silva, Hugo, "Micro Determinants of Labor Force Status among Older Americans," Stony Brook, NY: State University of New York at Stony Brook, 2000

This paper used the first three waves of the Health and Retirement Survey (HRS) to investigate the determinants of labor force status among older Americans. Using transitions at 2-year intervals, the author found that after being retired or unemployed, those who were actively searching for a job had a higher probability of returning to work. The author also noted that being in good physical and mental health—measured by objective and subjective variables—increased the chances of becoming employed, as did having worked in the last 12 months. Those who were receiving disability payments were less likely to make this transition. Focusing on those who were married, the study reports that a preference for joint leisure and the health and age of the respondent's partner affected the transition decisions. The study also investigated transitions in and out of employment and self-employment, as well as subsamples of males and females.

Other literature

Bound, John, The Health and Earnings of Rejected Disability Insurance Applicants, *American Economic Review*, Vol. 79, No. 3 (June 1989): 482-503

This study examines the impact of disability on labor force participation and mortality. To account for the possibility that incentive inherent in the SSI program resulted in reduced labor force performance rather than the underlying disability, the authors

compared the experience of men who received disability payment and men who did not receive disability payments but applied for them. Based on this comparison, he concluded that at least a significant portion of the poor labor force performance of disabled workers could be attributed to their disability rather than to disincentives. The study also reported that unsuccessful applicants to the disability insurance program experienced death rates higher than those of non-disabled people.

Levine, David I., "Reinventing Disability Policy," *Institute of Industrial Relations, Working Paper Series, Working Paper No. 65, June 1997*

In this article, the author stated that the current disability policy should be reinvented. The author proposed a new system that would concentrate on moving people from dependence to independence with "flexible vocational rehabilitation vouchers, work-oriented assessments, and simple rules that guarantee that nobody would ever be made worse off by working." He then outlined his disability policy. Levine noted that an obstacle to providing work incentives is that more people would come into the system, and thereby costs would increase. He felt that this problem could be handled by establishing a return-to-work system for only those already receiving disability benefits, thereby not expanding the program until the system has proved effective.

Meyer, Bruce D., Viscusi, Kip, Durbin, David L. "Workers' Compensation and Injury Duration: Evidence from a Natural Experiment," *The American Economic Review, Vol. 85, No. 3, June 1995, 322-340*

The authors examine the effect of workers' compensation on the time out of work, because this could influence the workers' incentives in several ways. Meyer, Viscusi, and Durbin note that the previous literature on incentive effects focused on the program's effect on injury rates or the number of claims rather than on the duration of claims. Therefore, in this paper, the authors used data from a natural experiment provided by two large increases in benefit levels in Kentucky and Michigan. It enabled them to compare the behavior of people who were injured before a benefit increase to those injured after an increase, showing the effect of benefit changes on the duration of claims. The results showed that

large benefit increases affected the length of time people took to return to work after being injured, suggesting negative labor-supply effects of workers' compensation benefits.

Oi, Walter Y., "Work for Americans with Disabilities," *Annals of the American Academy of Political and Social Science*, Vol.523, Affirmative Action Revisited (Sep. 1992), 159-174

In this article, the author stated that the Americans with Disabilities Act (ADA), which was created to improve the rights of the disabled by mandating rights to equal employment opportunities, couldn't be applied to disabled individuals. He explains that the ADA presumes that people with disabilities constitute a distinct minority "whose members can be identified and counted as members of a race or gender can be." Instead, Oi proposes that there needs to be an integrated disability policy.

U.S. Government Accountability Office, *Social Security: Disability Programs Lag in Promoting Return to Work*, GAO/HEHS-97-46, Washington, DC: March 1997

This report noted that although the size of the SSDI and SSI programs grew over the past decade, the numbers of beneficiaries that returned to the workforce were very low. GAO looked at return-to-work programs in the private sector and other countries. Their research showed that people with disabilities can and do return to work. However, the SSDI and SSI programs do not place a high priority on this aspect. GAO believes that the SSA can reform its program without hurting the benefits for people who cannot participate in the labor force.

Wittenburg, David, and Loprest, Pamela, "A More Work Focused Disability Program? Challenges and Options," The Urban Institute, November 2003

The study presented options for incorporating a strong return-to-work incentive as part of the disability eligibility requirements for the Social Security Administration's disability programs. The authors examined private and public disability programs and discussed possible changes to the current system. They concluded that because the current requirement of SSA disability programs focuses on the applicant's inability to work, it is at odds with a strong return-to-work focus. "As perceptions of disability change

over time, particularly since the passage of the ADA, an important question is whether the current disability definition needs to be modified or completely overhauled to keep up with the more modern disability conceptualizations.”

Yelin, Edward H. “Employment with and without Disabilities in an Age of Insecurity,” *Annals of the American Academy of Political and Social Science*, Vol. 549, *The Americans with Disability Act: Social Contract or Special Privilege?* Jan 1997, 117-128

The study examined the relationship between disability and employment. The authors studied the impact of various factors on earnings such as the general movement of the economy as well as the incentive impact of various disability programs. Data sets used in this analysis were the Current Population Survey and the Health Interview Survey. The authors concluded that all these factors impacted earnings for disabled individuals, but failed to completely explain differentials in employment across groups. The authors pointed to the fact that improvement in technology should lead to an increase in the labor market performance of disabled people.

Johnson, William and Ondrich, Jan G. “The Duration of Post-Injury Absences From Work.” *Review of Economics and Statistics*, Vol. 72, No. 5 (Nov. 1990), 578-586

The authors identify the effects of injuries and incentives on returning to work by injured workers. Johnson and Ondrich use three duration models to estimate the effects of disability benefits on the probability of returning to work and on the expected duration of work absences. The authors analyzed duration of work absences among men and women in Florida, Wisconsin, and New York with permanent partial disabilities. The findings show that the higher the pre-injury wage, the shorter the length of absence from work. This indicates that duration of work absences is sensitive to financial incentives. The authors determined that increases in wealth, in the form of benefits, lengthened the expected duration from work. The severity of impairment had only a small impact on work absence. However, the article showed that education and experience could increase an individual’s ability to compensate for disability.

Chapter 4. Disincentives to undergo therapy

One of the characteristics of the VA Disability Compensation Program is that working does not affect a veteran's basic benefit. However, it has been postulated that the system may provide a disincentive to overcome disabilities. In the following sections, we discuss potential disincentives to undergo therapy. We consider the impact of medical and vocational rehabilitation and then turn to a discussion of the impact of technological progress on assisting people with disabilities.

Effectiveness of rehabilitation

The major incentive to undergo therapy is its effectiveness in either directly improving QOL or in terms of improvement in QOL derived from increased employability. The literature suggests that the main incentive to undergo therapy would be direct benefits associated with improvement in function rather than benefits derived from improvements in employability. Despite the motivation of disabled adults to return to the labor force and the continuing efforts to identify effective models of rehabilitation [1, 2], many medical and vocational rehabilitation efforts have not been successful [3].

The VHA provides compensated work therapy, to more than 18,000 veterans each year. Participants in this program must have a diagnosed condition that affects their ability to work [2]. Further, the VA's IU benefit compensates veterans for a service-connected disability that makes veterans unemployable [4]. The GAO has reported that numerous technological and medical advances, combined with changes in society and the nature of work, have increased the potential for people with disabilities to work. Yet the VA has seen substantial growth of IU benefit awards over the last several years.

Another issue to consider is the conflicting incentives of the IU program and the vocational rehabilitation programs. As described

earlier, veterans lose the IU benefit if their earned income is above the poverty line. At the same time one of the goals of vocational rehabilitation is to increase earnings. Thus, the IU programs' eligibility criteria act as a disincentive to undergo therapy. Although this may be an important disincentive to undergo therapy, we were not able to find any studies that addressed this issue.

One way to address this disincentive to undergo therapy would be to make IU eligibility contingent on participation in VA sponsored vocational rehabilitation programs. The GAO in a 1987 report recommended that the VA revise its regulations for IU and require that all veterans applying for a total disability rating based on IU be referred for a vocational rehabilitation evaluation. However, the VA does not currently require an employment assessment by the Vocational Rehabilitation and Employment Task Force (VR&E) program staff as part of the IU entitlement determination.

Another consideration of the ineffectiveness of the VA vocational rehabilitation program in improving employability is that many disabled veterans who undergo this therapy may only return to work temporarily. Based on private industry evidence from Butler, Johnson, and Baldwin [5], a return to work after a health-related absence does not mark the end of the disability, and measuring the return to work rate misrepresents returns to stable employment for disabled workers. The authors examined empirically the theory that returning to work signals the end of the disability. They found that by considering only the first returns to work, observers would conclude that a majority (85 percent) had recovered from their injuries because they returned to work. In fact, 60 percent of those who returned to work had one more subsequent injury-related absence.

Impact of technological progress

Societal attitudes as shown with the passing the ADA in 1990 have shifted the attitude towards economic self-sufficiency and the right of people with disabilities to work. In addition, medical advances and new technologies provide more opportunities for people with disabilities to participate in the labor force. Although in the past, companies encouraged someone with a disability to leave the

workforce, today many companies are focusing on enabling people with disabilities to return to work.

Two articles reviewed [6,7] describe the relationship between advances in technology and work for disabled people. Both detail programs that offered new technology for disabled workers and specialized devices that enabled people with disabilities to perform work functions. Assistive and universally designed technologies can be powerful tools for millions of Americans with disabilities, improving their quality of life and ability to engage in productive work. New technologies are opening opportunities for even the most severely disabled. For example, some individuals with quadriplegia can now operate a computer by the glance of an eye. As the National Council on Disabilities has stated, "For Americans with disabilities, technology makes things possible."

Another document [8] outlines President Bush's New Freedom Initiative. It highlights the program, which has the potential to assist disabled people by expanding access to assistive technologies and also expanding educational opportunities to increase the ability of the disabled to work. This further illustrates the strides in assisting the disabled population to work as a result of expanded access to assistive technology and programs.

Summary

In conclusion, the size of the working age disability beneficiary population has grown rapidly over the past decade. However, according to the GAO [3] not many have returned to work. Therefore, although it provides a measure of income security, disability compensation is not linked to programs to enhance work capacities and promote medical or vocational rehabilitation opportunities. Yet, medical advances and new technologies provide more opportunities than ever for people with disabilities to be able to resume gainful employment. Little research has been conducted to explore the effectiveness of retraining workers, or providing them with assistive technology, to be able to resume gainful employment. The growth of employment opportunities in the computer industry and other employment sectors that are not physically demanding creates the potential for disabled individuals to be retrained and find productive jobs. More research needs to be

conducted to explore the potential for assisting and motivating disabled individuals to return to the workforce.

Literature reviewed

We provide an annotated bibliography of our citations containing a brief abstract of each source document. The abstracts were drawn heavily from the authors' own abstracts, when they were available. If authors' abstracts were not available, we summarized the relevant material from the citation.

Cited literature

[1] Government Accountability Office, "Vocational Rehabilitation: Opportunities to Improve Program Effectiveness," GAO/T-HEHS-98-87, Washington, DC: Feb 1998

The GAO assessed the Veterans Benefits Administration's (VBA) vocational rehabilitation and counseling program. GAO found that the vocational rehabilitation program has not been effective in rehabilitating and in finding jobs for disabled veterans. The GAO had previously reported that the program focused on sending veterans to training rather than focusing on finding employment. The report noted that less than 10 percent of veterans were found eligible for vocational rehabilitation services, which can be attributed to the program's lack of emphasis on employment services.

[2] "The Vocational Rehabilitation and Employment Program for the 21st Century Veteran," VA Vocational Rehabilitation and Employment Task Force, Department of Veterans Affairs, 2004. www.va.gov/opp/vre_report.htm

This task force conducted an examination, evaluation, and analysis of the VR&E Program. The task force found the program to be less than effective in obtaining employment for rehabilitated veterans. Many disabled veterans do not achieve their rehabilitation goals. The assessment found that although the program had gone through many changes, the focus was still on education rather than on rehabilitation and re-entering the labor force. The report concluded by recommending changes to rebuild the VR&E program.

[3] Government Accountability Office, “Vocational Rehabilitation: VA Continues to Place Few Disabled Veterans in Jobs,” GAO/HEH-96-155, Washington, DC: Sep 1996

To assist veterans with service-connected disabilities, Congress enacted the Veterans’ Rehabilitation and Education Amendments in 1980. This was designed to change the focus of the vocational rehabilitation program from just providing training to also obtaining and maintaining employment. Congress asked the GAO in this report to assess the status of the employment initiative program. The GAO found that the VA continued to find few jobs for disabled veterans. Instead, the VA continued to concentrate on training, particularly in the form of higher education. In this report, the GAO recommended refocusing the program towards the goal of placing veterans in jobs and improving the program’s effectiveness.

[4] Government Accountability Office, “Other Programs May Provide Lessons for Improving Individual Unemployability Assessments,” GAO-02-207T, Washington, DC: Oct 2005

This GAO report compares the VA’s Individual Unemployability practices to those used in the private sector. The report noted that a weakness “in VA’s decision making process is that the agency has not routinely included a vocational specialist in the evaluation to fully evaluate the applicant’s ability to work.” Further, the IU decision-making process lacked incentives to encourage a return to work. “Incorporating return-to-work practices could help VA modernize its disability program to enable veterans to realize their full productive potential without jeopardizing the availability of benefits for people who cannot work.”

[5] Butler, Richard J., Johnson, William G., and Baldwin, Marjorie L. “Managing Work Disability: Why First Return to Work Is Not a Measure of Success.” *Industrial and Labor Relations Review*, Vol.48, No.3 (Apr 1995), 452-469

The authors tested empirically the assumption that returning to work signals the end of the limiting effects of a worker’s injury. The study applied data from 11,000 Ontario workers with permanent partial impairments from injuries that occurred between 1974 and 1987. They showed that the effects of injuries on employment are more lasting than other studies indicate. The post-injury

employment showed four patterns: (1) single absence, successful return; (2) single absence, unsuccessful return; (3) multiple absences, successful return; and (4) multiple absences, unsuccessful return. The results reveal that 15 percent of the workers did not return to work. In comparison to workers with one or more spells of employment, the workers who did not return to work were older, had less education, and were less likely to belong to a labor union. These results show that the extent of work disability is partly determined by workers' capacities to compensate for functional limitations and partly by employers' willingness to cooperate in that process. Therefore, the authors concluded that a failure to return to work couldn't be solely attributed to the injury; there needed to be an effective disability management program.

[6] Gross, Grant. "Technology Helps Disabled Workers." PC World, May 5, 2005

In this article, the author describes how advances in technology can assist the disabled. The Department of Defense through their Computer/Electronics Accommodation Program (CAP) offers technology for disabled workers. Grant notes that this program encourages federal agencies to hire people with disabilities and to assist employees who encounter disabilities later in life.

[7] "Technology Eroding the Wall Between Disabled, Non-disabled." Associated Press, March 12, 2003

This article explains how technology is slowly changing the way disabled people work. With the advent of new technology such as specialized devices offering assistance in many ways, people with disabilities are better able to perform their work. Further, technology companies are working harder to make more products to assist the disabled consumer.

[8] New Freedom Initiative, The White House, Feb 2001
<http://www.whitehouse.gov/news/freedominitiative/freedominitiative.html>

In 2001, President George W. Bush announced his New Freedom Initiative. This program is intended to help the disabled by increasing access to assistive technologies, expanding educational opportunities to increase the ability of disabled individuals to enter

the workforce, and promoting greater access to daily community life.

Other literature

Rosenheck, Robert, Frisman, Linda, and Sindelar, Jody, “Disability Compensation and Work Among Veterans with Psychiatric and Nonpsychiatric Impairments,” *Psychiatric Services*, Vol. 46, No. 4, April 1995

In this study, the authors looked into the relationship between VA disability payments and employment among veterans with psychiatric and nonpsychiatric impairments. The data used were from a national survey of Vietnam-Era Veterans conducted in 1987-1988. Results of the research found that there was no difference between psychiatric and nonpsychiatric-impaired veterans for nonparticipation in the labor force. Rosenheck, Frisman, and Sindelar found that the income from the VA disability benefits was not as large an impediment to vocational rehabilitation as factors related to “illness, functional impairments, or attitudes.” This study suggested that the challenges for the disabled to return to work were primarily clinical and were not related to the VA disability compensation policies.

U.S. Government Accountability Office, “Fundamental Changes to VA’s Disability Criteria Need Careful Consideration,” GAO-03-1172T, Washington, DC: Sep 2003

In this report the GAO addressed the VA’s disability ratings system. GAO concluded that the VA might need to modernize the disability programs. They indicated that the VA might be depending on outdated medical and economic disability criteria in administering disability compensation.

Chapter 5. Impact of benefit on recruitment and retention

In this section we review factors that are relevant to military recruitment and retention. Our goal is to examine the impact of benefits on military recruitment and retention. We were unable to find any studies that specifically addressed the impact of disability benefits, but we found studies and surveys addressing the impact of benefits in general and several studies that examined the impact of post-separation benefits on recruitment and retention. We reviewed the literature and examined Department of Defense (DOD) personnel surveys focusing on job satisfaction and its influence on personnel. We provide a summary of the two most recent surveys from 1999 and 2002 [1, 2]. Further, a discussion on service members' awareness of their compensation and benefits package is highlighted. Overall, these studies indicate that benefits influence recruitment and retention, but not significantly.

Employers offer disability and other benefits as part of total compensation in order to attract, retain, and motivate their workers. Like any other part of compensation, one would expect that increases in disability benefits would have a positive effect on recruiting and retention. Researchers have produced a substantial body of empirical research linking various pay elements and other factors to retention behavior [3,4,5,6].

Department of Defense (DOD) personnel surveys

The Department of Defense conducted several surveys on its military personnel. However, there is no survey that specifically includes disability benefits. The two most recent DOD surveys in 1999 and 2002 concentrated on overall job satisfaction. The findings from the 2002 survey indicate that attitudes toward personnel-related issues have improved. The survey topics cover a wide range of areas including career intent, satisfaction with aspects

of military service, readiness and tempo issues, pay and benefits, and satisfaction with quality of life and family programs.

Active duty members were satisfied with job security (83 percent), military values, lifestyle and tradition (68 percent), and exchange/commissary availability (67 percent). Even though less than half of service members were satisfied with housing (29 percent), pay (38 percent), and military family support programs (41 percent), these satisfaction levels are higher than in 1999, when data were collected on the 1999 Active Duty Survey. Only one major indicator did not show improvement between 1999 and 2002: satisfaction with spouse employment (32 percent).

On the survey's measures of overall satisfaction and attitudes toward staying in the military, results were positive. For example, the percentage of service members satisfied with "the military way of life" increased 12 percentage points between 1999 and 2002, up from 49 percent to 61 percent. Attitudes toward staying in the military were also better than in 1999.

The surveys also indicated a lack of knowledge of service members on their compensation and benefits package. A majority perceived that the private sector offered better pay and benefits. This indicates that DoD may want to better emphasize the nature and value of military pay and benefits.

Further, the research on post-separation benefits such as the GI Bill illustrates both a positive and negative effect in regard to recruitment and retention. Educational benefits are often cited as one of the top reasons for men and women to join the military. Military members and veterans are generally eligible for educational benefits after having served on active duty for 3 years (or 2 years under some circumstances). However, this program may also provide an incentive to leave the military, because it may be easier to pursue an education after leaving active duty.

Benefits' effect on recruitment and retention

Examples of studies that discuss the effect of benefits on recruitment and retention are the following:

- GAO [1] pointed out that pay and job satisfaction are the top reasons for staying and/or leaving the service. GAO also indicated that the majority of service members are content with life in the military.
- A 1999 GAO report [7] specifically addressed perspectives of military personnel in retention-critical specialties indicating, “improving pay and benefits is an important concern for military personnel, but there seems to be a much greater need to address other quality of life issues in the retention...including the nature of their work circumstances.”
- Buddin and Kapur [5] focus on tuition assistance and the program’s impact on first-term military retention.
- Another GAO report [4] looked at housing allowances. The report discovered that less than one percent of service members’ surveyed cited housing as a reason for leaving the military.
- A study prepared by the Center for Naval Analysis [8] described and analyzed incentive pay and benefit offerings of private sector firms compared to those of the military. The author found significant differences between military and private sector incentive pay and benefits. In most instances, military benefits were broad and offered less choice than was available in the private sector.

Awareness of benefits

Further, the GAO reviewed how active duty service members perceive their compensation and whether DOD has effectively explained the value of the military compensation package to its members [9]. This report found that active duty service members (1) underestimated the cost of compensation and how it compared to private sector wages; (2) were unaware of or confused about certain aspects of compensation; and (3) were concerned about erosion of benefits. Another document cited that for first-term and mid-career enlisted personnel, education benefits are most frequently indicated as the reason that they joined the military [10].

Summary

To determine the impact that disability benefits have on recruitment and retention, we reviewed the literature and examined DoD personnel surveys on benefits. Because there was no specific research on disability benefits, we focused on benefits in general. We found that the value and type of benefit do affect recruitment and retention, especially those benefits focusing on wages. However, further research may be needed to adequately address how well the benefits provided to service disabled veterans and their survivors serve to provide incentive value for recruitment and retention.

Literature reviewed

We provide an annotated bibliography of our citations containing a brief abstract of each source document. The abstracts were drawn heavily from the authors' own abstracts, when they were available. If authors' abstracts were not available, we summarized the relevant material from the citation.

Cited literature

[1] U.S. Government Accountability Office, "Military Personnel: Preliminary Results of DOD's 1999 Survey of Active Duty Members," GAO/T-NSIAD-00-110, Washington, DC: March 2000

In 1999, the U.S. Department of Defense surveyed a random sample of 66,000 active-duty service members and provided preliminary data from over 32,000 respondents. The survey focused on three main areas: (1) satisfaction with military life and the aspects of military life that influence decisions to stay in or leave; (2) the extent to which military personnel are working long hours and spending time away from home; and (3) the financial conditions reported by military personnel. Based on the survey results, more military personnel were satisfied with their way of life (about 50 percent) than were dissatisfied (about 29 percent). Officers had higher satisfaction rates than enlisted personnel, and, in general, satisfaction tended to increase with seniority. In addition, satisfaction and intent to stay in the military were strongly linked.

Pay and job enjoyment were cited as top reasons for both intending to stay and considering leaving the military.

**[2] “2002 Active Duty Status of Forces Survey: Overview Briefing.”
Defense Manpower Data Center, Jan 2003.**

www.defenselink.mil/news/Feb2003/d20030225sofa.pdf

This survey was conducted in 2002 to assess the attitudes and opinions of active duty members on a variety of personnel and policy issues. More than 38,000 service members were surveyed, and the response rate was 32 percent. The findings from the survey indicate that attitudes toward personnel-related issues had improved since the 1999 Active Duty Survey. The topics covered a wide range of areas including career intent, satisfaction with aspects of military service, readiness and tempo issues, pay and benefits, and satisfaction with quality of life and family programs. Active duty members were satisfied with job security (83 percent), military values, lifestyle and tradition (68 percent), and exchange/commissary availability (67 percent). Even though less than half of service members were satisfied with housing (29 percent), pay (38 percent), and military family support programs (41 percent), these satisfaction levels are higher than in 1999. On the survey's measures of overall satisfaction and attitudes toward staying in the military, results were positive.

[3] U.S. Government Accountability Office, *Military Personnel: Active Duty Benefits Reflect Changing Demographics, but Continued Focus Is Needed*, GAO-02-557T, Washington, DC: April 2002

In this report, the GAO focused on employee benefits: the indirect compensation above and beyond a service member's basic pay. The GAO was asked by Congress to determine (1) the impact of demographic changes on active duty benefits, and (2) how the military's overall benefit package compared with those in the private sector. The GAO found that after comparing military benefits with private sector benefits, there were no significant gaps between the two. In some cases, military benefits exceeded those offered by the private sector. However, the military personnel strategy lacked a clear link between benefits and DOD's ability to recruit and retain a workforce and also to address the dissatisfaction among service members regarding their work conditions.

[4] U.S. Government Accountability Office, *Military Personnel: Higher Allowances Should Increase Use of Civilian Housing but Not Retention*, GAO-01-684, Washington, DC: May 2001

As part of military compensation, the Department of Defense provides service members with either an allowance to help defray the cost of private sector housing or free military housing. This GAO report determined (1) how increasing housing allowance would satisfy the preferences of service members and (2) how satisfaction with housing allowances relates to retention outcomes. The GAO noted that increasing retention rates couldn't result from focusing only on increasing housing allowances. Less than one percent of those surveyed cited housing as a reason for leaving the military. Instead, the report explained that DOD should address retention problems by focusing on specific occupations, career levels, and grades rather than on a general retention incentive for everyone. [5] Buddin, Richard, and Kapur, Kanika, *"Tuition Assistance Usage and First-Term Military Retention."* Santa Monica, CA: RAND, 2002

Buddin and Kapur examined the DOD Tuition Assistance (TA) program. They focused on who used the TA program and whether they were more likely to reenlist than those who did not use the program, specifically targeting the Navy and Marine Corps. They found that women are more likely than men to take advantage of the program; however, age makes no difference and family responsibilities make only a small difference in the results. In terms of the effect on reenlistment, the Tuition Assistance program has a negative impact. This may be explained because those with a strong preference for education may find it easier to complete a degree in the private sector than combining military service and school, especially under the GI Bill.

[6] "Topline Results for Active-Duty and Reserve Component Members Through 2004." U.S. Department of Defense, *Survey Bulletin*, No. 002, April 2005

This bulletin examined and provided results of the U.S. Department of Defense surveys of active duty and reserve forces. The results showed that for active duty members in most categories (intent to stay in the military, overall satisfaction with the military way of life, stress, and unit readiness), the outcome did not change

over the previous year. For reserve members, there was a decline in the members' intent to stay in the military, as a direct result of current military operations.

[7] U.S. Government Accountability Office, *Perspectives of Surveyed Service Members in Retention Critical Specialties*, GAO/NSIAD-99-197BR, Washington, DC: August 1999

In this report, the General Accounting Office reviewed quality of life and retention in the military at the request of Congress. The GAO was asked to address how quality of life and retention varied among the military services and between ranks. As part of the review, the GAO administered a survey on quality of life and retention to approximately 1,000 Army, Navy, Air Force, and Marine Corps active duty military personnel in five military installments. The GAO found that more than half of the approximately 1,000 officers and enlisted military personnel surveyed said they were dissatisfied and intended to leave the military after their current obligation or term of enlistment was up.

[8] Hattiangadi, Anita U. “*Private-Sector Benefit Offerings in the Competition for High-Skill Recruits*.” The CNA Corporation, Dec 2001

Hattiangadi compared and contrasted the incentive pay and benefit offerings of large, private-sector firms to those of the military. In doing so, she assessed whether these offerings differed significantly and considered whether these offerings played a role in the military's recent recruiting, reenlistment, and manning difficulties. Hattiangadi found significant differences between the military and private sector. In most cases, military benefits were broader in scope and different in structure and involved less choice than those offered by the private sector.

[9] U.S. Government Accountability Office, “DOD Needs to Improve the Transparency and Reassess the Reasonableness, Appropriateness, Affordability, and Sustainability of Its Military Compensation System,” GAO-05-798, Washington, DC: July 2005

This GAO report assessed the military's compensation system. The following were reviewed: (1) whether the Department of Defense's current approach to military compensation provides adequate transparency over total cost to the federal government, (2) recent trends in active duty military compensation costs, and (3) active

duty service members' perceptions on compensation. The GAO found that overall, service members were dissatisfied and had misconceptions about their pay and benefits. This was in part due to the lack of education by DOD on the competitiveness of service members' total compensation packages. By not adequately educating service members the report notes, "DOD is essentially allowing a culture of dissatisfaction and misunderstanding to perpetuate." The report also found that the mix of compensation was inefficient for meeting recruiting and retention needs.

[10] U.S. Government Accountability Office, "Military Personnel: First-Term Personnel Less Satisfied with Military Life Than Those in Mid-Career," GAO-02-200, Washington, DC: Dec 2001

This GAO report analyzed data from DOD's 1999 Survey of Active Duty Personnel, specifically on first-term enlisted personnel and enlisted personnel and officers in mid-career. The GAO focused on (1) overall satisfaction with military life and retention, (2) initial reasons to join the military and intent to remain in the service, (3) reasons for leaving active duty, and (4) perceptions of civilian life compared to military life. The GAO found that satisfaction with military life and retention intent increased with seniority and that retention intent was related to the reasons that service members first joined the military. The primary reasons for leaving the military were related to basic pay, amount of personal/family time, and quality of leadership. However, no single factor predicted retention intent. The best overall predictor of retention for first-term and mid-career service members was general satisfaction with the military way of life.

Other literature

Hansen, Michael L., and Wenger, Jennie W, "Is the Pay Responsiveness of Enlisted Personnel Decreasing?" *Defense and Peace Economics*, Vol. 16(1), Feb 2005: 29-43

In order to recruit and reenlist military personnel, the DoD is interested in the effect of incentives. Estimates of pay elasticity have shown a general decline over the years, suggesting a decline in military personnel's responsiveness to pay. Therefore, the authors used Navy personnel data to identify the source of differences in estimates of the pay elasticity of reenlistment. The paper noted that

the decline in estimates of pay elasticity of reenlistment does not reflect an actual decline, but a perceived decline. Hansen and Wenger's study indicated that there is very little variation in pay elasticity over time.

Kosiak, Steven M., "Military Compensation: Requirements, Trends and Options." Center for Strategic and Budgetary Assessments, Washington, DC, Feb 2005

This article explained that the effectiveness of the U.S. military depends critically on its ability to attract and retain quality military personnel. Kosiak noted that maintaining a qualified force must be a central goal of U.S. defense planning for the future. He stated that recruitment and retention targets could be met simply by spending more money, but money must be spent more efficiently. One of the ways Kosiak described to achieve this goal is to make greater use of cash compensation as a means of rewarding personnel and less use of non-cash compensation. He concluded that despite today's strain on the military, the Services have generally been successful in their recruitment and retention efforts.

Walker, David M., "Is the Current Military Compensation System Reasonable, Appropriate, Affordable, and Sustainable?" Presented at Defense Advisory Committee on Military Compensation, July 2005

David Walker, the Comptroller General, in his presentation to the Defense Advisory Committee noted that active duty compensation costs are growing. Most significantly, these components include basic pay, special and incentive pays, allowances for housing and healthcare costs. Walker indicated that the current mix of compensation is inefficient for recruiting and retention. Instead, cash pay is generally considered to be more efficient since people discount the value of future benefits. He concluded that DOD's compensation strategies should be examined and revised to ensure that the program is efficient and cost-effective.

Chapter 6. Quality of life

We begin our review of the literature on quality of life (QOL) with a short examination of articles that describe the basic types of quality-of-life measures used in social science research. Next we discuss the literature that applies to these measures to estimate the impact of specific conditions on QOL. For the literature on specific conditions, we categorize the studies by condition and summarize the QOL measures applied. Appendix A includes a list of all the QOL articles that we collected on this topic, the study abstract, and the QOL measures applied in the study.

Methodologies

There are many different QOL measures in the literature. As described by Jenkinson [1], for the most part, healthcare researchers use the term QOL to refer to outcomes based on patient's self-reports. Sociologists and economists, who first developed measures of QOL, were more rigorous in their definition. They defined QOL measures in terms of overall well-being or happiness. Economists usually use the term "utility" when referring to QOL.¹ Furthermore, although a well-defined concept in the economic literature, the economic profession has, for the most part, shied away from attempting to measure individual level utility; most of the work in the social sciences in this area has been by sociologists.²

Studies in healthcare research often make the distinction between health-related QOL measures and overall QOL measures. Strictly speaking, since QOL is an all-encompassing measure, there is no such thing as a "health-related" QOL measure. Instead, "health-

¹ The term "utility" is also used by healthcare researchers. However, in this context, the term usually refers to a health-related measure of quality of life rather than a full measure of well-being (Drummond [2]).

² That said, there are a variety of measures that are intended to make comparisons of aggregate QOL across countries.

related” quality of life is really a domain of a true QOL measure. A good description of typical domains of quality of life is reported in Felca and Perry [3]. The usual approach is to first construct domain-specific measures. Domains described in Felca and Perry include the following:

- Physical well-being (health, fitness, mobility)
- Material well-being (income, housing quality, possessions, transportation)
- Social well-being (personal relationships, community involvement)
- Emotional well-being (fulfillment, mental health, stress)
- Productive well-being (competence, contribution in multiple settings (e.g., job, home life, leisure, education)).

The next step often involves eliciting individual level “subjective” judgments regarding the importance of these domains in terms of overall well-being. Supporting the view of Felca and Perry [3], Cummins [4] states there are three propositions that seem to have general acceptance in relationship to QOL definition. First, the term QOL refers to both the objective and subjective axes of human existence. Second, the objective axis incorporates *norm-referenced* measures of well-being. Third, the subjective axis incorporates measures of *perceived* well-being.

Studies that use the term health-related QOL are usually limited to a subset of the domains above and do not include questions designed to assess how much people weigh these factors. A good example of the difference in these measures is described in Parameter and Donnelly [5]. In their example, they report that, when rating QOL, patients gave greater weight to mental as opposed to physical function. On the other hand, when rating health status, the reverse was true.

As pointed out in Gill and Feinstein [6], although many articles in the healthcare field provide measures of QOL, it is the rare article that attempts to measure and aggregate multiple dimensions of QOL. Instead, the most common feature of QOL measures in the health field is that they are mostly based on patient self-reports.

Jenkinson [1] states that most studies looking at the impact of disabilities on health-related QOL fit into two categories: those designed to evaluate health-related quality of life in any group of patients and those designed to evaluate health-related quality of life in specific illness groups. The former includes measures such as the 36-item and 12-item Short Form Health Surveys (SF-36 and SF-12).

Instruments included in the SF-36 cover a wide range of aspects of life that can be adversely affected by ill health such as:

- Physical function
- Emotional well-being
- The ability to undertake work and social activities

Jenkinson also gives examples of disease specific measures such as the Arthritis Impact Scales Version II (AIMS II, the 39-item Parkinson's Disease Questionnaire, the Endometriosis Health Profile, and the 40-item Amyotrophic Lateral Sclerosis Assessment Questionnaire). These sorts of measures are intended to cover dimensions applicable to specific patient groups. Thus, like generic measures, they may address areas such as physical and emotional functioning, but they also cover issues that may be predominant among patients with a particular illness.

An example of a health-related QOL survey that attempts to provide an aggregate assessment of quality of life is the EuroQOL 5D (EQ-5D). This survey addresses five dimensions of health:

- Mobility
- Self-care
- Usual activity
- Pain
- Anxiety/depression

The approach used to aggregate the responses to these survey questions into a single index is to apply the results of a survey of the general population that is intended to reflect the importance of

some 245 health states drawn from the survey. It should be noted that although this QOL measure is an aggregate, the aggregation is not based on each individual's subjective judgment as to the importance of these states/conditions.

A survey instrument that does use individuals' subjective assessments of the importance of different dimensions of QOL is the Australian Unity Wellbeing Index [7]. This index comprises two numbers. The personal Wellbeing Index is the average level of satisfaction across seven aspects of life (health, personal relationships, safety, standard of living, achievements, community connectedness, and future security). The National Wellbeing is the average satisfaction score across six aspects of national life (the economy, the environment, social conditions, governance, business, and national security). The survey contains both objective and subjective measures of quality of life. Applying these measures allows for the incorporation of personal preferences in determining the importance of different domains covered in the survey. This survey instrument is currently being revised. Several shortcomings of this instrument are outlined in Cummins [8]. The major flaw pointed out by Cummins is the method used to aggregate domains of QOL into a single index.

The national well-being section of the survey is designed to capture opinions about the general nature of life in a community and not directly related to personal well-being.¹⁰ The importance of including subjective measures of QOL is underscored in a book chapter by Parameter and Donnelly [5]. The book chapter describes the experience of a group of people with Spina Bifida. This group scored poorly on QOL on objective measures when compared to a non-disabled population. However, by their own assessment, their QOL was satisfactory. Without a subjective measure of QOL, it would be impossible to uncover this last finding.¹¹ The book chapter outlined a procedure to obtain both objective and subjective measures of satisfaction and applied these measures to a group of nursing home residents.

¹⁰ See Web site http://acqol.deakin.edu.au/index_wellbeing/index.htm. March 2006.

¹¹ This example brings up another controversy in the field of quality-of-life measures, that this measurement depends greatly on whether it is applied to a disabled or non-disabled population (see Fryback [9]).

Another example of a survey instrument that captures different aspects of life satisfaction is the U.S. General Social Survey (GSS). Unlike the Australian Unity Wellbeing Index, although it does measure satisfaction of a number of domains of living, there is no attempt to construct an overall measure of QOL. The GSS surveys have been conducted by the National Opinion Research Center annually since 1972 and biennially beginning in 1994. Main areas covered in the GSS include financial circumstances, social and family relations, work and productivity, and health.

Another approach seen in the literature to measure QOL is to use time as a metric. Under this approach, a “normal” year of living is the unit of measure for quality of life (the numeraire). Unhealthy states of life for a year are then defined as a quality-of-life adjusted year (QALY). An example of such a measure that is specifically designed to capture the impact of disability QOL is the World Bank’s Disability Adjusted Life Year (DALY) measure (see a commentary on the uses of summary measures of population health in McKenna et al. [10]). DALYs are constructed by applying disability weights for more than 400 non-fatal health conditions. A major area of concern surrounding the use of this type of summary health measure is the validity, reproducibility, and ethics of “valuing” health outcomes [10]. Thus, this approach to measuring QOL has the same shortcoming as do all other measures of health QOL. That said, this sort of measure is very useful in conducting cost-effectiveness analysis when the outcome of different treatments varies by mortality and morbidity [2].

Quality of life research

Our summary of articles examining the impact of disability on QOL focuses on the literature as it relates to conditions that could potentially qualify for VA disability compensation. These articles related various measures of quality of life – ranging from single dimension measures such as functional or physiological well-being to pure QOL measures – to a physical or physiological condition. None of these articles directly related a disability index similar in any way to the VA disability ratings to a QOL measure. We also included articles that described the impact of disability on QOL of family members.

Although we found no study that specifically examines the relationship between a disability acuity and a QOL measure, we found a number of studies that examine the association between conditions that could be eligible for disability compensation and various QOL measures. These studies were assembled using the search engines described earlier and two additional extensive bibliographies.¹²

We only included articles with some type of QOL measures (overall, health-related, or functional). In total, this search resulted in 113 articles. We grouped these articles into the following categories: chronic fatigue syndrome (5), mental non-PTSD (9), PTSD (8), diabetes (18), heart (13), breathing (13), back (6), arthritis (10), neurological (2), endocrine (2), visual (2), auditory (3), effect on family members (9), other (2), and veteran (11). Next we extracted from each article the QOL measure that was applied. A full list of these articles, QOL measures, and article abstracts is included in Appendix A.

Overall this review of the literature confirms that although a wide variety of QOL measures are used (see Gill and Feinstein [6]), the SF-12 and SF-36 surveys are the most commonly used measures. As exhibited in Appendix A, the most common QOL measure was the health-related quality of life measure SF-36. In total, 35 articles out of 113 applied some variant of the SF-36. Several articles used the “Veterans” version of the SF-36. This version was adapted to measure health-related QOL among veterans. Another frequently applied measure is the SF-12 (used in four studies in the QOL measurement appendix), which is basically a pared down version of the SF-36. Other common measures included disease-specific QOL measures such as the Seattle Angina Questionnaire (used in four articles) and the Asthma Questionnaire (LWAQ) (used in six articles), Quality-of-Life for Respiratory Illness Questionnaire (QOL-RIQ) (used in one article) and the psychiatrist evaluation, DSM-IV (used in two articles). Overall QOL measures included the

¹² One was supplied to us by Michael McGeary (Institute of Medicine). The other source of articles was a large bibliography of articles related to disability contained in the Australian Centre on Quality of Life Web site (<http://acqol.deakin.edu.au/index.htm>).

EuroQOL EQ-5D (used in three articles) and the WHO Quality of Life (WHOQOL) Questionnaire (used in four articles).

The following is an annotated bibliography of the articles cited in the methodology sector on measure of QOL. For the volumes of articles we reviewed that measure QOL for specific conditions, we provide article abstracts in Appendix A.

Literature reviewed

We provide an annotated bibliography of our citations containing a brief abstract of each source document. The abstracts were drawn heavily from the authors' own abstracts, when they were available. If authors' abstracts were not available, we summarized the relevant material from the citation.

Cited literature

[1] Jenkinson, Crispin, "Quality of Life," in *The Encyclopedia of Disability*, 1323-25, Edited by Albrecht, Gary. Sage Publications, 2006.

This chapter gave an overview of QOL measurement in healthcare research. More specifically, the article gave examples of health-related QOL measures (SF-36) and the EuroQOL 5D (EQ-5D). The measures were applied to disabled populations.

[2] Drummond, M.F., O'Brien B., Stoddart, G.L., et al. *Methods for the Economic Evaluation of Healthcare Programs*. Oxford: Oxford University Press, 1997.

This textbook examines methodologies used in cost-effectiveness and cost-benefit analysis.

[3] Felca, David, Perry, Jonathan, "Quality of life: the scope of the term and its breadth of measurement," Fourth chapter in *Quality of Life for People with Disabilities, Models, Research and Practice*. Edited by Brown, Roy. Publisher: Stanley Thornes LTD, Cheltenham, United Kingdom, 1997

The chapter described the theory surrounding the measurement of QOL. It focused on measurement of QOL among disabled people.

Topics included a description of several domains of QOL: physical well-being (health, fitness, mobility), material well-being (income, housing quality, possessions, transportation), social well-being (personal relationships, community involvement), emotional well-being (fulfillment, mental health, stress), and productive well-being (competence, contribution in multiple settings: job, home life, leisure, education). Additionally, it included an examination of subjective as compared to objective measures of QOL.

[4] Cummins, Robert. "The DALY, context and the determinants of the severity of disease: an exploratory comparison of paraplegia in Australia and Cameroon," *Soc Sci Med. Sep*, 57(5): 949-58, 2003.

This paper examined intercountry comparisons of QOL using the World Bank's disability adjusted life year (DALY) measure. The objectives of the study were to examine the notion that the burden of disease is broadly similar without regard to country, environment, gender, or socioeconomic status and to develop detailed descriptions of the experiences of the burden of disease as they related to these contextual factors. The study was a multi-factorial exploratory study employing qualitative and quantitative techniques to obtain data on the effects of country (development), environment (urban versus rural), gender, and socioeconomic status on people with paraplegia.

Striking features of the data were the differences between countries with respect to the impact of the health conditions on functioning that highlight a context in which paraplegia of like clinical severity can be fatal in one environment and not in another. While there has been some focus on the control of social determinants of disease, there has been little work on the social determinants of the severity of disease. The underlying assumptions of the DALY, which ignores context in the assessment of the burden of disease, risk exacerbating inequalities by undervaluing the burden of disease in less-developed countries.

[5] Parameter, Trevor, and Donnelly, Michelle, 1997, "An Analysis of the Dimensions of Quality of Life," Chapter 6 in *Quality of Life for People with Disabilities*, Edited by Brown, Roy, Second Edition, Stanley Thornes (Publisher) Ltd., Ellenborough Houst Wellington Street Cheltenham, GL 50 1 YW United Kingdom

This chapter described the history of measurement of quality of life. The focus of the chapter was the establishment of utility measures of quality of life. The chapter gave several examples of quality of life measurements.

[6] Gill, T.M., and Feinstein, A.R., "A critical appraisal of the quality of quality-of-life measurements," JAMA. 1994 Aug 24-31; 272(8): 619-26, 1994

This study evaluated how well quality of life is being measured in the medical literature. The study also offered a new approach to measurement. The articles are drawn from a search on articles with the term "quality of life" in their titles (articles were identified from a recent Quality-of-Life Bibliography and from two MEDLINE searches). Articles were eligible for review only if they described or used one or more "quality-of-life" instruments. Twenty-five articles were randomly selected from each of the three data sources.

Each article was reviewed for its compliance with two sets of criteria having several components, which are cited under "Data Synthesis." This search found the following:

(1) Investigators conceptually defined quality of life in only 11 (15 percent) of the 75 articles; identified the targeted domains in only 35 (47 percent); gave reasons for selecting the chosen quality-of-life instruments in only 27 (36 percent); and aggregated their results into a composite quality-of-life score in only 27 (38 percent) of 71 eligible articles. (2) No article distinguished "overall" quality of life from health-related quality of life; patients were invited to give their own separate rating for quality of life in only 13 articles (17 percent); among 71 eligible articles, patients were asked to supplement the stipulated items with personal responses in only 9 (13 percent) and to rate the importance of individual items in only 6x (8.5 percent).

Because quality of life is a uniquely personal perception, denoting the way that individual patients feel about their health status and/or non-medical aspects of their lives, most measurements of quality of life in the medical literature seem to aim at the wrong target. Quality of life can be suitably measured only by determining the opinions of patients and by supplementing (or replacing) the instruments developed by "experts."

[7] Cummins, Robert, "Report 12.1, Australian Unity Wellbeing Index Special Report on City and Country Living," Jan 2005, School of Psychology, Deakin University, QOL

The report described the Australian Unity Wellbeing Index and the results of a survey of Australians who used the instrument. Derived from the overall index, the Personal Wellbeing Index measures people's satisfaction with their own lives, and the National Wellbeing Index measures how satisfied people are with life in Australia. Other items included a standard set of demographic questions and other survey-specific questions.

[8] Cummins, Robert, 2002, "Caveats to the Comprehensive Quality of Life Scale," Mimeo, Australian Centre on Quality of Life

The study critiqued both the Australian Wellbeing Index and the Fifth Edition of the ComQol scale.

[9] Fryback, Deny, 2003, "Whose quality of life? or Whose decision?" *Quality of Life Research* 12: 609-610, 2003. Kluwer Academic Publishers, Printed in the Netherlands

The article discussed the vexing problems confronting measurement of QOL. It is difficult to devise measures (and questionnaires) specific to a disabled population that will also be relevant to a non-disabled population.

[10] McKenna, Matthew, Marks, James, 2002, "Commentary on the Use of Summary Measures of Population Health," Chapter 2.3 in *Summary Measures of Population Health World Health Organization*

The chapter critiqued the use of the World Bank's Disability Adjusted Year (DALY) measure of health. Under this approach a "normal" year of living was the numeraire. DALYs were constructed by applying disability weights for more than 400 non-fatal health

conditions. A major area of concern surrounding the use of this type of summary health measures is the validity, reproducibility, and ethics of “valuing” health outcomes.

Other literature

Anderson, R.T., Aaronson, N.K., Wilkin, D., “Critical review of the international assessments of health-related quality of life,”
***Quality Life Research*, Dec 1993, 2(6): 369-95**

This paper reviewed the international adaptation and use of generic health quality of life measures over the last several years, including the Nottingham Health Profile (NHP) the Sickness Impact Profile (SIP), the Medical Outcomes Short-Form 36 (MOS SF-36), the EuroQOL, and Dartmouth COOP Charts. International work with disease or condition-specific HRQL measures was exemplified with the European Research and Treatment of Cancer (EORTC) Quality of Life Questionnaire (QLQ), and the Spitzer Quality of Life (QL) Index. Progress towards cross-national measurement equivalence in HRQL measures reported in the literature has been uneven.

Results show that the development of language-adapted versions of HRQL measures to date have mostly concerned translation issues, within the context of independently conducted studies. Substantially less focus has been placed on psychometric equivalence across language versions necessary for coordinated international studies, such as multi-national clinical trials. However, this picture is rapidly changing with recent projects underway to develop and refine new or existing HRQL measures.

Overall, the lack of prominent differences found between countries in ranking of health states in major HRQL measures supported the feasibility of developing internationally applicable HRQL instruments. Recommendations were made for additional data needed to better ascertain the degree of measurement equivalence developed in the various versions of each instrument reviewed.

**Inter-University Consortium for Political and Social Science
Research, General Social Survey Series,
[http://webapp.icpsr.umich.edu/cocoon/ICPSR-
SERIES/00028.xml](http://webapp.icpsr.umich.edu/cocoon/ICPSR-SERIES/00028.xml), March 10, 2006**

This Web site includes a detailed summary of the General Social Survey that has been administered by the National Opinion Research Center annually since 1972 and biennially beginning in 1994.

Jacobs, J. E., Maillé, A. R., Akkermans, R. P., van Weel, C., Grol, R. P., Assessing the quality of life of adults with chronic respiratory diseases in routine primary care: Construction and validation of the 10-Item Respiratory Illness Questionnaire-monitoring 10 (RIQ-MON10), *Quality of Life Research*, Aug 2004, Vol. 13 Issue 6, pp 1117-1127

This article assessed the validity of a shortened version of the 55-Item Quality of Life for Respiratory Illness Questionnaire (QoL-RIQ), comparing results of this survey to the SF-36.

Kazis, Lewis, “The Veterans SF-36 Health Status Questionnaire: Development and Application in the Veterans Health Administration,” *Monitor Medical Outcomes*, Issue 1, Jan 2000

This article described the Veterans Health Study instrument, a survey that measured health-related quality of life. The primary measure used in the survey is the Veterans SF-36. Modifications to the SF-36 include changes to the role items (role limitations due to physical and emotional problems), where response choices that were originally dichotomized yes/no choices were changed to a five-point ordinal scale. The report explained that these changes to the SF-36 increased precision and discriminate validity of the role scales and physical and mental component studies.

Lohr K.N., Aaronson, N.K., Burnam, M.A., Patrick, D.L., Perrin, E.B., Roberts, J.S., Evaluating Quality-of-Life and Health Status Instruments: *Development of Scientific Review Criteria, Clinical Therapeutics*, vol. 18, No. 5, 1996

This paper describes the criterion used by the Medical Outcomes Trust (MOT) to evaluate QOL measures. QOL measures that have been approved by the MOT are London Handicap Scale Quality of

Well-Being Scale, Seattle Angina Questionnaire, SF-12 Health Survey, SF-36 Health Survey (standard and acute versions).

O'Carroll, R.E., Smith, K, Couston, M, Cossar, J.A., Hayes, P.C., "A comparison of the WHOQOL-100 and the WHOQOL-BREF in detecting change in quality of life following liver transplantation," *Quality Life Res.* Feb 2000, 9(1):121-4

This article described the World Health Organization (WHO) generic quality of life measure--the WHO-QOL-100, together with an abbreviated version, the WHO-QOL-BREF. The article reported that preliminary data suggest that the WHO-QOL-BREF provides a valid and reliable alternative to the lengthier WHO-QOL-100. In the study, the sensitivity to change of both versions was tested pre- and 3 months post-liver-transplantation in 50 patients and also in 21 non-transplanted liver disease controls. The authors found that QOL domains on both measures were highly correlated and were sensitive to change following transplant and that they remained stable on repeat assessment in non-transplanted control patients. However, the sensitivity to change was significantly reduced for the social domain in the WHO-QOL-BREF.

It was concluded that the WHO-QOL-BREF is a useful alternative to the WHOQOL-100 in evaluating quality of life improvement following major therapeutic interventions for physical, psychological, and environmental domains of life quality. However, researchers interested in measuring the social aspects of life quality may be best advised to use the lengthier WHO-QOL-100.

Sales, A.E, Plomondon, M.E., Magid, D.J., Spertus, J.A., Rumsfeld, J.S., "Assessing response bias from missing quality of life data: The Heckman method," *Health Qual Life Outcomes*, 2:49, 2004

The objective of this study was to demonstrate the use of the Heckman two-step method to assess and correct for bias due to missing health-related quality of life (HRQL) surveys in a clinical study of acute coronary syndrome (ACS) patients. The authors analyzed data from 2,733 veterans with a confirmed diagnosis of ACS, including either acute myocardial infarction or unstable angina. HRQL outcomes were assessed by the SF-36 health status survey, which was mailed to all patients who were alive 7 months following ACS discharge. The authors created multivariable models

of 7-month post-ACS physical and mental health status using data from only the 1,660 survey respondents. Then, using the Heckman method, they modeled survey non-response and incorporated this into the initial models to assess and correct for potential bias. They used logistic and ordinary least squares regression to estimate the multivariable selection.

Spertus, J.A., Winder, J.A., Dewhurst, T.A., Deyo R.A., Prodzinski, J., McDonell M., Fihn S.D., Development and Evaluation of the Seattle Angina Questionnaire: A New Functional Status Measure for Coronary Artery Disease, "J Am Coll Cardiol 25 (2): 333-341 1995

The Seattle Angina Questionnaire is a 19-item self-administered questionnaire measuring five dimensions of coronary artery disease: physical limitation, anginal stability, anginal frequency, treatment satisfaction, and disease perception.

Cross-sectional or serial administration of the Seattle Angina Questionnaire was carried out in four groups of patients: 70 undergoing exercise treadmill testing, 58 undergoing coronary angioplasty, 160 with initially stable coronary artery disease, and an additional 84 with coronary artery disease. Evidence of validity was sought by comparing the questionnaire's five scales with the duration of exercise treadmill tests, physician diagnoses, nitroglycerin refills, and other validated instruments. Reproducibility and responsiveness were assessed by comparing serial responses over a 3-month interval.

All five scales correlated significantly with other measures of diagnosis and patient functions ($r = 0.31$ to 0.70 , $p < 0.001$). Questionnaire responses of patients with stable coronary artery disease did not change over 3 months. The questionnaire was sensitive to both dramatic clinical change, as seen after successful coronary angioplasty, and to more subtle clinical change, as seen among outpatients with initially stable coronary artery disease.

The Seattle Angina Questionnaire is a valid and reliable instrument that measures five clinically important dimensions of health in patients with coronary artery disease. It is sensitive to clinical change and should be a valuable measure of outcome in cardiovascular research.

Ware, John, E., Sherbourne, Cathy, "The MOS 36-tem Short-form Health Survey (SF-36), I. Conceptual Framework and Item Selection," *Medical Care*, June 1992, Vol. 30, No. 6

The article described the construction of the 36-item short form quality of life survey (SF-36). The SF-36 was designed for use in clinical practice and research, health policy evaluation, and general population surveys. The SF-36 includes one multi-items scale that assesses eight health concepts: (1) limitations in physical activities because of health problems, (2) limitations in social activities because of physical or emotional problems; (3) limitations in usual role activities because of physical health problems; (4) bodily pain; (5) general mental health (psychological distress and well-being); (6) limitations in usual role activities because of emotional problems; (7) vitality (energy and fatigue); and (8) general health perception.

Chapter 7. Lump sum

Another issue the Commission is examining is whether lump sum payments should be made for certain disabilities or level of severity of disabilities.¹³ It is a well-understood fact that generally individuals prefer having a dollar today over a dollar in the future. As such, it may be preferable to some individuals to receive a one-time, lump sum payment, rather than a stream of monthly payments. Additionally, offering lump sum payment options would affect program administration. Not having to manage monthly payments for some people might reduce program administration costs.

Federal budget planning might be complicated by a lump sum option in a number of ways. Offering a lump sum pay-out option would potentially involve large amounts of money to be paid out in a given year, and the uncertainties with regard to the number of veteran applicants who might choose and qualify for this option would make budget planning difficult. For a lump-sum option to be implemented smoothly, it would be necessary to develop a method for forecasting the number of veterans who would opt for the lump-sum option, and develop a data infrastructure to support program implementation. Additionally, if over time large numbers of veterans were to seek to reenter the system based on the progression of their disability or the identification of new disabilities, administration could be complex for those who had previously accepted lump sum payments.

The purpose of our literature review is to inform the issues surrounding lump sum payments based on historical experiences and the research on individuals' time-preferences for money. Although there is no direct experience within the VA compensation system with this option, there are several federal programs that have offered lump sum payments. Specifically, our literature review draws on the military's experience in offering lump sum payments in their

¹³ The VA has been discussing a lump sum disability payment option at least since 1956 (see the Bradley report [1]).

retirement system and civilian workers' history of acceptance of lump sum payments of accrued retirement accounts at employment separation. Additionally, our literature review includes research related to the estimation of discount rates for different demographic groups.¹⁴ Personal discount rates measure the payment necessary to forgo current consumption in exchange for future consumption. This research is relevant because it helps profile likely program takers. Groups with higher discount rates are more likely to accept a lump sum disability payment than those with lower discount rates. Understanding which individuals are likely to be attracted to a lump sum payment can help identify how such a program might need to be tailored to avoid potential pitfalls. As we will describe, researchers have estimated discount rates using methods ranging from experimental studies to studies related to consumption choices to studies that examine the military's experience with offering lump sum retirement payments. This last group of studies is probably the most comparable to the VA Compensation Program because they estimate discount rates for the most relevant population and time horizon.

Given the many issues surrounding lump sum payments, we break down and present the literature in separate categories. The categories are personal discount rates, both non-military and military-specific, lump sum payments at job separation, retirees and lump sum payments, attitudes regarding lump sum payment experiences of other countries, and cost saving associated with lump sum payments.

Lump sum payments and discount rate estimation

Overall studies estimating discount rates offer three general findings. First, estimates of the magnitudes of individuals' discount rate vary significantly. Second, discount rates vary with the time delay of payment. Third, discount rates vary systematically with demographics.

¹⁴ The discount rate is basically a parallel concept to the interest rate. It reflects the percent difference in how an individual values a dollar today as compared to a dollar next year. For example, if an individual has a discount rate of 5 percent, he is indifferent between receiving 95 cents today versus a dollar next year.

Variation in personal discount rates

We begin by examining discount rates that have been estimated based on consumer expenditure and consumer preference studies. Although these studies are not fully analogous to estimating discount rates for a lump sum versus stream of income choice, they do provide evidence on how individuals make decisions regarding monetary choices when a time horizon is taken into consideration.

Experimental studies by Thaler [2] and Benzion et al. [3] found discount rates to be higher for a hypothetical choice involving relatively small sums (this summary was drawn from Frederick et al. [4], section 4.2.2.). Their calculations imply that discount rates ranged from 34 to 29 percent.

Hausman [5] inferred personal discount rates by comparing appliance purchases to a reference model compared with more energy-efficient models. A “break-even” discount rate was calculated based on capital cost and energy-savings. This study estimated an average personal discount rate of about 25 percent.

Gately [6] studied purchases of refrigerators and found an even larger discount rate by purchases of various appliances. Estimates ranged from 45 to 300 percent. Dreyfus [7] examined the purchase price of automobiles in relationship to the maintenance cost associated with fuel efficiency and safety to estimate the discount rates. Estimates indicated that discount rates range from 11 to 17 percent.

Discount rates vary with the time delay of payment

Another finding in the literature is that the discount rate varies with the time delay of the reward or penalty. Individuals appear to discount the near future more than the far future. Specifically, they apply lower discount rates to amounts with a shorter delay than to amounts to be received farther into the future (see in Frederick et al. [4]).

Discount rates vary systematically with demographics

Other studies addressed how individual discount rates varied by demographic factors. In addition to consumption and income data

studies, we also reviewed evidence that addressed individual preferences and discount rates in the context of retirement plan decisions for both civilians and military personnel.

Gilman [8] inferred personal discount rates from the propensity of employees of four non-profit organizations to participate in their organization's retirement plan. He found that personal discount rates declined with income, education, and age. The lower discount rate for lower income individuals may be a reflection of budget realities that may make it difficult for these individuals to forgo money now in exchange for future retirement payments. This study's estimates of personal discount rates ranged between 8.5 and 16.2 percent based on one model specification and between 1.3 and 19.6 percent for another (see Warner and Pleeter [9]).

Black [10] estimated discount rates from survey questions about alternative retirement systems for the military. In this survey, military personnel were asked a series of questions regarding preferences for alternative hypothetical military retirement plans. Similar to Gillman, Black found that discount rates declined with income, education, and age. He estimated an average discount rate of 10.3 percent for officers and 12.5 percent for enlisted personnel (see Warner and Pleeter [9]).

Warner and Pleeter reported that "break even" discount rates implied by retiring military personnel's choice to accept a lump sum or annuity retirement was 20 percent for officers and 26 percent for enlisted men. Generally lower discount rate estimates were obtained in this study as well as in Black [10] and Gilman [8] than were observed in the durable commodity purchase studies (Hausman [5], Gately [6], Dreyfus [7]). As described by Warner and Pleeter [9], one explanation for this is that the individuals in their study, as well as Black's and Gilman's studies, were making choices over significantly longer time periods. This longer period of choice combined with the fact that these studies were based on military personnel make them a better base to assess the likely acceptance of a VA disability lump sum offer.

Lawrance [11], who estimated discount rates using food consumption and income data, found that discount rates varied

significantly with education, age, and race. Estimates ranged from 12 percent for college-educated whites in the top 5 percent of the income distribution to 19 percent for nonwhites without a college education in the bottom fifth of the income distribution.

The military's Voluntary Separation Incentive (VSI) and the Selective Separation Benefit (SSB) study

Studies that examined the choice to accept lump sum payment options for military retirement are particularly germane because they pertain to a population similar to those receiving VA Compensation. Perhaps the most relevant historical example of a lump sum program is the military's voluntary separation programs. The 1991 Defense Authorization Act directed DoD to reduce active duty strength. To assist DoD in attaining this voluntary reduction, two temporary financial incentive programs were developed: the Voluntary Separation Incentive (VSI) and the Selective Separation Benefit (SSB).

The VSI program provided an annuity to the separating member of 2.5 percent of annual basic pay multiplied by his/her years of service. Those in the program would receive payments for a period equal to twice as long as their years of service. The VSI formula was similar to that for determining military retirement benefits. But unlike the military retirement benefit, the VSI annuity was not indexed for inflation. The SSB program enabled service members to receive a one-time lump sum benefit upon retirement. When combined, these programs are similar to how lump sum options might be configured for the VA Compensation Program.

As Rick Maze [12] noted, there is a significant difference in the circumstances surrounding a lump sum retirement option and a lump sum disability payment. For example, the possibility of a worsening condition must be considered in any VA disability lump sum option. This was not an issue for the DoD separation incentive programs. That said, examining the history of the VSI and SSB benefit gives us important insight into the potential effects of a VA disability lump sum payment option.

The most comprehensive study of the VSI and SSB programs is Warner and Pleeter [9]. As they describe, the DoD Compensation Director prepared a pamphlet explaining the program that contained comparisons between a lump sum payment and the present value of the annuity for selected grades and years of service using a 7 percent discount rate. This was the money market rate in 1991. As the authors point out, the informational campaign did not seem to impact decision-making, suggesting that the decision to take a lump sum payment may not be an informed one.¹⁵ Using the 7 percent discount rate, the annuity compared quite favorably to the lump sum option. Despite the likely higher long-term value of the annuity, many service men chose the lump sum option [13]. For example, among officers with less than 10 years of service, more than half took the lump sum. Among E5 enlisted personnel with less than 10 years, over 90 percent took the lump sum offer. Furthermore, for more senior officers, 30 percent chose the lump sum option. Overall, approximately half the officers chose the lump sum and over 90 percent of the enlisted personnel did so.

By examining the choices military personnel made, Warner and Pleeter [9] estimated break-even discount rates by demographic groups (education, age, sex, military rank). A break-even discount rate is the rate that would yield a net present value of the retirement stream equal to the lump sum retirement payment. In other words, it is the discount rate that would make the difference between a lump sum and an annuity meaningless. After accounting for the choice to separate from the military, the authors directly estimated the probability of choosing the lump sum option among these groups. The results of this estimation give us insight into the groups likely to opt for a lump sum option among disabled veterans. Table 8 summarizes the estimated impact of the numerous characteristics on the probability of accepting a lump sum payment, as well as the implied break-even discount rate for that choice.

¹⁵ However, evidence on the estimated rate of personal discount rates might indicate that the assumed 7 percent rate was too low.

Table 8. The effect of demographics on the probability of accepting a lump sum payment and discount rates

Results for officers			Results for enlisted personnel		
Variable	Probability of accepting a lump sum payment	Estimated impact on break-even discount rate	Variable	Probability of accepting a lump sum payment	Estimated impact on break-even discount rate
Male vs. female	0.019	0.008	Male	0.012*	0.010
Black vs. non-white	0.149*	0.063	Black vs. non-white	.044*	0.035
White vs. non-black	-.039*	-0.017	White vs. non-black	-0.010**	-0.008
# of dependants	.044*	0.018	# of dependants	0.009*	0.007
Graduate education	-0.176	-0.0175	Some college	-0.061*	-0.048
College education	-.068	-0.029	High-school grad.	-0.019*	-0.015
Wage (\$10K)	-0.002*	-0.001	Mental group I	-0.020**	-0.016
After-tax lump sum (\$10K)	-0.13*	-0.055	Mental group II	-0.008**	-0.006
Fiscal year 1992	0.171*	0.073	Mental group IIIA	0.003	0.002
Age	-0.008*	-0.003	Wage (\$10K)	0.001	0.001
Years of service	0.007	0.003	After-tax lump sum (\$10K)	-0.075*	-0.059
South	0.017	0.007	Fiscal Year 1992	0.039*	0.031
West	0.019	0.008	Age	-0.003*	-0.003
Midwest	-0.019**	-0.008	Years of Service	0.004	0.003
Army	0.031*	0.013	South	0.021*	0.016
Navy	0.116*	0.049	West	0.017*	0.013
Intelligence	0.065*	0.028	Midwest	0.013**	0.010
Engineering	-0.081***	-0.035	Army	0.039*	0.031
Scientific or professional	-0.045	-0.019	Navy	0.000	0.000
Health	0.018**	0.008	Electronics	-0.023*	-0.018
Administration	-0.036**	-0.015	Communication	-0.013**	-0.010
Support	-0.037	-0.016	Medical	-0.022**	-0.018
Other	-.085	-0.036	Other technical	-0.031*	-0.024
			Administration	-0.031*	-0.024
			Elect./ mechanical equipment repair	-0.018*	-0.015
			Craftsman	-0.025*	-0.020
			Supply	-0.017*	-0.014

* Significant at the 0.01 level
 ** Significant at the 0.05 level
 *** Significant at the 0.10 level

As table 8 shows, many demographic factors are important predictors of accepting the military's lump sum offer. For example, blacks had a higher probability of accepting the lump sum option for both enlisted and officer personnel. Similarly, the probability of accepting the lump sum payment decreased with age. Demographics affect the break-even discount rate in the same way that they affect the probability of accepting a lump sum offer because this rate is, in part, based on the probability of accepting a lump sum payment

Overall the authors concluded that there is significant variation in the discount rate across demographic groups and, in general, the break-even discount rates among military personnel were high, especially among enlisted personnel. Among officers, the average break-even discount rate was about 22 percent, while for enlisted personnel, the estimated break-even discount rate was about 36 percent. They also reported that discount rates are inversely proportional to the size of the lump sum payment. This implies that individuals place lower discount rates on large sums.

Lump sum retirement payment at job separation

In addition to the analysis of the VSI and SSB programs, the literature is rich with empirical studies that address similar choices in which people choose between a lump sum option at retirement versus rolling funds over into an Individual Retirement Account (IRA) that provides stream payments. When workers change jobs or retire, they may have several options for the disposition of their pension rights. An increasing fraction of benefit plans offer the option of a lump sum distribution upon job separation (64 percent in 1993 as reported by Hurd et al. [14]). Studies on this subject are applicable to lump sum payment issues in general in that they illuminate how people choose between accepting money up front at the time of retirement (cash out) and accepting a return over time (rolling over their retirement to a tax exempt retirement plan).¹⁶

¹⁶ These studies draw on a variety of data sources, including the Current Population Survey, the Health Interview Survey, and the Hewitt and Associates employer survey.

Overall these studies tend to confirm the findings of research related to the heterogeneity in discount rate estimates across geographic groups. Researchers found that cash-out rates are lower for large distributions and among workers who are older, well-educated, male, or non-black or who earn high incomes [14, 15]. Hurd et al. [14] reported that cash-out rates were 27 percent for those who left their job due to disabilities versus 18 percent for those who departed for other reasons.

Recipients' experience with lump sum payments

Another important perspective to consider is the experience of workers after they take a lump sum payment. Evidence suggests that many individuals spend their lump sum payment relatively rapidly. For example, after the sale of their plant, many mill workers, who received a lump sum stock payout of up to \$100,000, spent the money on consumption goods [16]. A large share of the workers sold their stocks and went on a spending spree. Furthermore, upon separation from a company, workers generally tend to cash-out lump sum retirement benefits instead of rolling them over to an IRA.

Diane Herz, an economist at the U.S. Bureau of Labor Statistics, cited recent Labor Department studies of how 60,000 households handled retirement-plan lump sums (see Wall Street Journal article [17]). She reported the following:

- Only 21 percent of the recipients rolled the money into retirement savings (e.g., an IRA).
- Nearly 30 percent of the recipients spent their lump sums on consumer products or paid medical, educational, or other expenses.
- 23 percent put the money into a business or house or repaid debt.
- Younger employees were the likeliest to spend all of their lump sum payout, but one fifth of those between the age of 55 and 64 who received distributions in 1993 also spent their lump sum payout.

Other empirical literature confirms the findings cited by Herz, suggesting that these sorts of cash-outs are often spent on short-term consumption goods. For example, Piacentini [18] reported that 40 percent of the 1988 CPS respondents consumed at least a portion of their lump sum distribution. The study goes on to report that high-income families and older individuals saved more and consumed less than low-income families and younger recipients. Also, Hurd et al. [14] and Poterba, Venti, and Wise [15] documented that the most common items on which 1993 CPS respondents spent their cash-out were (in increasing order) saving accounts or other financial instruments, everyday expenses, debt repayments, and home loans. They also report that small distributions were almost all spent on everyday expenses.

Veteran views of lump sum disability payments

A GAO [19] study based on a survey of veterans gauged veterans' views on lump sum disability payments and reported the following:

- Support for offering the choice of a lump sum payment was nearly split (49 percent supported the idea, 43 percent were against it, and the remaining 8 were unsure).
- About one third of responding veterans reported that they would take the offer of a lump sum payment.
- Younger and less disabled veterans were more likely to be receptive to the idea of a lump sum payment.
- Focus group interviews of veterans indicated that, to ensure that recipients made an informed choice, any lump sum offer should be accompanied by an informational campaign and/or financial counseling.¹⁷

Groups representing veterans have also expressed views on lump sum disability payments. As reported in Maze [12], Donald Mooney of the American Legion, in testimony before the House Veterans

¹⁷ As demonstrated by the Warner and Pleeter [9] study, at least for retirement lump sum payments although well intended, in practice, this type of information is not an effective way to inform veterans about lump sum offers.

Affairs Committee about problems in processing claims, said lump sum payments would create a number of problems. Mooney pointed out that if an individual's health problems worsened over time, it might be unclear if or how the veteran could get an increase in disability compensation if they had taken a lump sum payout. "The veteran would not be able to obtain an increase in evaluation if he or she accepted the lump sum payment." Another problem pointed out by Mooney is that the VA often inaccurately assigns an initial disability rating. If the VA miscalculated the basis for a lump sum payment, he contended it would be administratively and logistically costly to ex-post adjust the payment, especially if a repayment of a lump sum is needed. This point was reiterated by the VA Inspector General [13].

The Veterans Adjudication Commission [20] sponsored a focus group session at the VA Atlanta Regional Office to ask veterans for feedback about the lump sum concept. Initially, most of the focus group veterans wanted more information before they would offer an opinion of the concept. As described in the report, nearly all said they would be open to the lump sum payment idea provided that: (1) the lump sum was a fair amount; (2) they would maintain VA medical care; (3) there would be counseling and education on how to manage the lump sum, including financial management; and (4) they could return to the system if their condition seriously worsened.

Savings associated with offering lump sum payments

The literature gives us some sense of the potential savings associated with lump sum distributions. Evidence from past lump sum programs suggests that the savings could be significant.

In their study of the lump sum retirement payment option, Warner and Pleeter [9] concluded that the lump sum option saved the federal government considerable money. Specifically, they calculated that the lump sum alternative saved the federal government a total of \$1.7 billion. Their analysis was based on the difference between the cost of money and the amount required to make a lump sum offer appealing to retirees. It did not include any cost saving associated with reduced administration costs.

The Veterans' Adjudication Commission estimated the savings in administrative costs that could result from offering a lump sum. The Commission performed a cost-benefit analysis of three alternative lump sum payment scenarios. These scenarios assumed no cost associated with reapplications, although the authors note there is a high level of re-applications. Thus, an important question raised by this report is that, as veterans age and new disabilities arise, some of the administrative savings associated with lump sum payments might be lost. All three simulations assumed that veterans taking the lump sum had 10 percent disability or less.

Under scenario one, the lump sum payment was based on a predetermined amount, 10 years of future benefits, and only pertained to new accessions. Under scenario two, the lump sum payment was discounted for present value and based on average life expectancy for new recipients. Scenario three had the same payment details as scenario two but applied to all veterans rated as 10-percent disabled. Overall, the results of these simulations indicated that there would be significant savings. Two scenarios predicted annual savings of over \$500 million by approximately the 20th year. The third scenario predicted net program savings of \$13 billion by year 20.

Additionally, several studies do not provide any savings estimates but do point out that there is significant workload associated with managing the cases of veterans with disability ratings of 30 percent or less. The VA's inspector general [20] reported that veterans with disability ratings of 20 percent or less account for 46.9 percent or 1.17 million active case files. However, these cases only represented 9.4 percent of total compensation. The report also pointed out the fact that eliminating these cases would result in reducing recurring compensation payments of \$1.96 billion a year and would free up staff. Furthermore, the GAO [19] stated that about 65 percent of disabled veterans have disabilities rated at 30 percent or less, which consumes a large amount of the VA's administrative time and resources. This implies that there could be considerable savings to the VA as a result of a lump sum payment option.

Experience with lump sum payments in other countries

Several Organisation for Economic Co-operation and Development (OECD) countries—Canada, United Kingdom, Finland, Germany—offer a lump sum option to veterans who have a low disability rating (See GAO [21]). In the United Kingdom, those with service-connected disabilities of less than 20 percent or any non-service-connected disabilities receive a lump sum payment and an annuity. Germany also provides surviving spouses, orphans, and dependent parents compensation based on need and also provides surviving spouses compensation for the estimated income the veteran would have earned had he or she lived. Another lump sum benefit offered in Germany is payment for adaptive housing. In Finland, lump sums are provided instead of an annuity for the surviving children or widow of a veteran with 10 to 25 percent disability. In Canada, lump sums are given instead of monthly payments for disabilities of 1 to 4 percent. Australia offers lump sum payment options to veterans with less than a 30-percent disability rating.

As discussed earlier, some countries are in the process of making changes to their veterans disability programs, including Great Britain and Canada. In Great Britain the Armed Forces Compensation Scheme (AFCS) is being phased in to replace the current Armed Forces Pension Scheme. The benefits are divided into one continuing payment for loss of earnings varied by severity of disability and a lump sum payment for quality of life impact also dependent upon severity. The AFCS provides a lump sum payment for pain and suffering, compensation for lost earnings capacity, and income for family members in the event that the veteran dies (<http://www.mod.uk/DefenceInternet/AboutDefence/Issues/Pensions/AfcsYourCompensationSchemeExplained.htm>). Canada has a plan to offer a lump-sum payment of up to \$250,000, pro-rated by level of disability, in place of a monthly pension (http://www.ctv.ca/servlet/ArticleNews/story/CTVNews/20060401/vets_benefits_060401/20060401?hub=Canada). This plan has been met with considerable controversy, however.

Summary

The literature related to lump sum settlements illustrates much about who would likely accept a lump sum option. It suggests that younger, less educated, and lower ranking personnel would be more inclined to accept a VA lump sum offer. The literature also suggests that funds received in lump sum payments are often spent on consumer goods rather than spent on long-term investments. Also, past experience indicates that providing financial information does not have a large impact on the choice to accept a lump sum payment, suggesting that the decision to take a lump sum payment may often not be an informed one. That said, research also indicates that the higher the settlement is the more likely the recipient is to prefer a return over time to a lump sum payment.

In support of lump sum payments, the literature indicates substantial potential savings associated with a lump sum disability settlement both in terms of reduced debt cost and administrative burden. This might explain why several OECD countries offer a lump sum option to veterans with low disability ratings. It should be noted, however, that several studies point to the fact that additional administrative cost may occur due to veteran's disability status being re-assessed at some future date.

Literature reviewed

We provide an annotated bibliography of our citations containing a brief abstract of each source document. The abstracts were drawn heavily from the authors' own abstracts, when they were available. If authors' abstracts were not available, we summarized the relevant material from the citation.

Cited literature

[1] The President's Commission on Veterans' Pensions, *A Report on Veterans' Benefits in the United States, The Administration of Veterans' Benefits: A Study of the Interrelationship of Organization and Policy*, Staff Report No. VI, 84th Congress, 2d Session, House Committee Print No. 260, Volume II. Washington, DC: U.S. Government Printing Office, 1956

The Bradley report examined various aspects of the VA disability compensation program that were in place prior to 1945. The first section of the report is related to a medical appraisal of the rating system (Volume II part B). The second section (Volume II part C) is related to an examination of the rating system as it relates to earnings.

The methodology used by the commission was to obtain earnings data and relate them to a disability rating. The Bradley Commission engaged the U.S. Bureau of the Census to survey veterans in order to obtain information on earnings. The Census Bureau surveyed 8,000 veterans selected to be representative of the general population of veterans, and another survey was conducted of 13,000 veterans receiving disability benefits. The goal was to obtain representation for each 10-percentile disability rating (about 1,000 cases for most of the sampling strata). Using these data, the Commission conducted extensive tabular analysis of disabled veterans in relation to factors such as age, education, occupation, post-service training, and disability rating. The report concluded that the association between disability rating and earnings is neither uniform nor accurate.

[2] Thaler, Richard H., "Some Empirical Evidence on Dynamic Inconsistency." *Economic Letters*, 8(1981): 201-207

Individual discount rates were estimated from survey evidence. For gains, they were found to vary inversely with the size of the reward and the length of time to be waited. Rates were found to be much smaller for losses than for gains.

[3] Benzion, Uri, Rapoport, Amnon, and, Yagil, Joseph “Discount Rates Inferred from Decisions: An Experimental Study.”
Management Science, Vol. 35, No. 3. March 1989

The article described the experiment to elicit discount rates from 2004 college students (economics and finance). The students participated in an intertemporal-choice experiment that manipulated three dimensions in a 4-by-4-by-4 factorial design scenario: (postponing a receipt, postponing a payment, expediting a receipt, expediting a payment), time delay (.5, 1, 2, and 4 hours), and size of cash flow (\$40, \$200, \$1000, and \$5000). The results of this experiment support an implicit risk hypothesis according to which delayed consequences are associated with an implicit risk value, and an added compensation hypothesis that asserts that individuals require compensation for a change in their financial position. The authors also found that implied discount rates were higher for hypothetical choices involving relatively small sums.

[4] Frederick, Shane, Loewenstein, George, O’Donoghue, Ted “Time Discounting and Time Preference: A Critical Review.”
Journal of Economic Literature, Vol. 40, No. 2 (June 2002): 351-401

This article surveyed estimates of personal discount rates and gave an overview of the theoretical underpinning of discount rate applications to cost-benefit analysis.

[5] Hausman, Jerry A., “Individual Discount Rates and the Purchase and Utilization of Energy Using Durables.” *Bell Journal of Economics*, 10(1) (Spring 1979): 33-54

In this paper personal discount rates were estimated by comparing appliance purchases to a reference model compared with more energy-efficient models. A break-even discount rate was calculated based on capital cost and energy savings. Applying this method, the author estimated an average personal discount rate of about 25 percent.

[6] Gately, Dermot. “Individual Discount Rates and the Purchase and Utilization of Energy Using Durables: Comment.” *Bell Journal of Economics*, 11(1) (Spring 1980): 373-74

This paper expanded on work by Hausman [5]. The author suggests that there may be market failure or irrationality in consumer

behavior in regards to savings. The study examined discount rates implied by purchases of refrigerators and found an even larger discount rate by studying purchases of various appliances than was found by Hausman [5].

[7] Dreyfus, Mark, and Viscusi, Kip W., “Rates of Time Preference and Consumer Valuation of Automobile Safety and Fuel Efficiency.” *Journal of Labor Economics*, Vol. 38, No. 1, (April 1995): 79-105

The authors used a hedonic price model for automobiles to estimate the role of discounting fuel efficiency and safety. The study found that the rate of implied discount rates ranged from 11 to 17 percent.

[8] Gilman, Harry J., “Determinants of Implicit Discount Rates: An Empirical Examination of the Pattern of Voluntary Pension Contributions of Employees in Four Firms,” Center for Naval Analyses, Arlington, VA (Sep 1976)

Gilman estimated the relative strength of individuals' preference for current over future cash pay. The data for this study were observed choices made by individuals employed in four institutions vis-à-vis their voluntary contributions toward full-vested pension plans. The study reported and estimated personal discount rates ranging between 8.5 and 16.2 percent for one model specification and between 1.3 and 19.6 percent for another.

[9] Warner, John T., and Pleeter, Saul, “The Personal Discount Rate: Evidence from Military Downsizing Programs.” *The American Economic Review*, Vol. 91, No. 1 (Mar 2001): 33-53

The military drawdown program of the early 1990s provides an opportunity to obtain estimates of personal discount rates based on large numbers of people making real choices involving large sums. The program offered over 65,000 separated service members the choice between an annuity and a lump sum payment. Despite break-even discount rates exceeding 17.5 percent, most of those separated selected the lump sum – saving taxpayers \$1.7 billion in separation costs. This paper reported break-even discount rates for officers of about 20 percent and for enlisted personnel of 26 percent. Estimates of discount rates ranged from 0 to over 30 percent and

varied with education, age, race, sex, number of dependents, ability test score, and the size of the payment.

[10] Black, Mathew, “Personal Discount Rates: Estimates for the Military Population.” *Final Report of the Fifth Quadrennial Review of Military Compensation*, Vol. 1B, Appendix I, U.S. Department of Defense, Jan 1984

The study reported the results from the estimation of discount rates from survey questions about alternative retirement systems for the military. In this survey, military personnel were asked a series of questions regarding preferences for alternative hypothetical military retirement plans. Mathew estimated an average discount rate of 10.3 percent for officers and 12.5 percent for enlisted personnel.

[11] Lawrance, Emily C., “Poverty and the Rate of Time Preference: Evidence from Panel Data.” *Journal of Political Economy*, 99 (1) (Feb 1991): 54-77

In this study, pure rates of time preference were estimated using the Panel Survey of Income Dynamics data on food consumption. The study reported that estimates of pure rate of time preference varied with education, age, and race. Estimates ranged from 12 percent for college-educated whites in the top 5 percent of the income distribution to 19 percent for nonwhites without a college education in the bottom fifth of the income distribution.

[12] Maze, Rick, “VA ponders lump sum payments for lesser disabilities, Veterans’ groups oppose idea.” *Army Times*, 12/15/05

The article gave data on the likely popularity of the VA lump sum program and some objections to the program such as the impact of the reevaluation of disability.

[13] Veterans Affairs, Office of Inspector General staff “VA Office of the Inspector General—Consideration of Lifetime Impairment in Disability Ratings”

The study examined the costs and benefits of offering a lump sum disability option. The report pointed out that there are a large number of claims for veterans whose disability rating is very low. For example, 30.6 percent of all claims are rated 10 percent disabled. The report also pointed out that the Office of the Inspector General conducted a survey where rating specialists

expressed concern with insufficient staff to adequately process claims. They used this as another argument for considering offering lump sum payments to veterans in settlement of future compensation cases. They stated in the report that using lump sum payments for all veterans with disabilities rated 20 percent or less would result in reducing 46.9 percent, or 1.17 million active claims. Finally, such a lump sum offer would reduce recurring compensation payments of \$1.96 billion a year and would free up staff to improve the quality and timeliness of future workload.

[14] Hurd, Michael, Lillard, Lee, and Panis, Constantijn, "An Analysis of the Choice to Cash Out Pension Rights at Job Change," RAND Report: DRU-1979-DO (October 1998)

The study examined the choice to take a lump sum distribution of retirement benefits. When workers change jobs or retire, they may have several options for the disposition of their pension rights, depending on their plan type and characteristics. Some defined benefit (DB) plans offer payment only in the form of a current or future benefit flow, but an increasing fraction (64 percent in 1993) provided the option of a lump sum distribution (LSD) upon job separation. The study reported that, among those who took a lump sum distribution upon job separation, 54 percent cashed out. Cash-out rates are lower for large distributions and among workers who are older, well-educated, male, non-black, or earn high incomes. These findings are consistent with earlier work in this area. Notably the study did not have many retirees in the younger age bracket that is of interest to the VA.

[15] Poterba, James, S. Venti, and D. Wise, "Lump Sum Distributions from Retirement Savings Plans: Receipt and Utilization," in D. Wise, ed., *Inquiries in the Economics of Aging* University of Chicago Press, 1998 (85-105).

This paper drew on data from the 1993 Current Population Survey and the Health and Retirement Survey to summarize the incidents and disposition of lump sum distributions. The authors found that while less than half of all lump sum distributions were rolled over into IRAs or other retirement saving plans, large distributions were substantially more likely to be saved than smaller ones. Consequently, more than half of the dollars paid out as lump sum distributions were reinvested. The study also explored the

correlation between various individual characteristics and the probability of rolling over a lump sum distribution. The study documented a number of clear patterns with respect to the allocation of lump sum distributions. More educated workers, older workers, and higher income workers were more likely to roll these distributions into some type of retirement saving account. The age groups used in this analysis do match the likely age groups for VA retirees that might be offered a lump sum option.

[16] Schultz, Ellen. "Offered a Lump Sum, Many Retirees Blow It and Risk Their Future," *The Wall Street Journal*, July 31, 1995, p. A1

This article described the experience of mill workers who received a lump sum stock from P&G after the closing of a plant in 1993. The article described the financial hardship of these workers after the distribution of these funds. The article goes on to quote Diane Herz, an economist at the U.S. Bureau of Labor & Statistics, and cited a Labor Department study of how 60,000 households handled retirement-plan lump sums (see [17]).

[17] Herz, Diane, "Work after early retirement: an increasing trend among men," *Monthly Labor Review*, April 1995.

The author, an economist at the U.S. Bureau of Labor & Statistics, reported on a Labor Department study of how 60,000 households handled retirement-plan lump sums. Only 21 percent of the recipients rolled the money into retirement savings (e.g., an Individual Retirement Account), a move widely recommended by financial planners. Nearly 30 percent of the recipients spent their lump sums on consumer products or paid medical, educational, or other expenses. Another 23 percent put the money into a business or house or repaid debt. Younger employees were the likeliest to spend every dime, but so did one fifth of those aged 55-64 who received the distribution in 1993.

[18] Piacentini, Joseph, "Preservation of Pension Benefits," *Employee Benefit Research Institute Issue Brief 98*. Washington, DC: Employee Benefits Research Institute, (Jan 1990)

This issue brief explored policy issues surrounding the portability and preservation of retirement benefits, focusing primarily on retirement income security implications. It began by describing the provisions in plan design and pension law that contributed to the

disparity between actual retirement benefit levels received by mobile workers and hypothetical levels that could be received by workers who remained with one job.

The discussion provided quantitative evidence of the extent to which portability and preservation exist under policies in place. To assess the current status of preservation of lump sum distributions, this issue brief included new findings on the receipt and use of lump sum distributions from the May 1988 Current Population Survey.

[19] U.S. Government Accountability Office, *Veterans Have Mixed Views on a Lump Sum Disability Payment Option*, GAO-01-172, Washington, DC Dec 2000

This study summarized a survey examining the views of a hypothetical option to offer newly disabled veterans the choice between monthly disability payments and a lump sum payment. The support for offering the choice of a lump sum payment was nearly equally split (49 percent supported the idea, and 43 percent were against it; the remaining 8 percent were unsure). About one-third of veterans responded that they would have been interested in a lump sum payment had this option been available when they were first compensated, a gauge of the level of interest new recipients may have. In addition, younger and less severely disabled veterans, who may more closely match the overall demographics of potential future recipients, were most likely to report interest in a lump sum option, at 46 percent and 39 percent, respectively. However, program details could substantially affect veterans' views about the lump sum option.

[20] *Commission's report of findings, conclusions, and recommendations regarding the Department of Veterans Affairs system for the disposition of claims for veterans' benefits*, VA Adjudication Commission, (Dec 1996)

This report described data collected by the Adjudication Commission. This data showed a significant number of claims from veterans already receiving compensation for relatively minor disabilities. As of September 30, 1995, about 2.2 million veterans were receiving service-connected disability compensation. Almost 40 percent of those veterans were evaluated 10 percent disabled; 70 percent were evaluated 30 percent disabled or less. During FYs 1990

through 1995, repeat compensation claims exceeded original compensation claims by about three to one.

The report goes on to describe that repeat claims account for more applications than any other broad category of disability compensation claims. In FY 1995, VA received 134,680 initial and 337,632 repeat disability compensation claims. The study also described the results of a review of claims and pending appeals as of November 1, 1995. This analysis found the following: (1) among pending repeat disability compensation claims, 69 percent of the claimants were already receiving compensation or a pension; (2) among pending appeals certified to the Board of Veterans Appeals, 66 percent were receiving compensation or a pension; (3) thirty-two percent of the veterans who had pending repeat compensation claims were ages 60 to 85 and were receiving compensation or a pension; (4) most veterans, 57 percent, with pending repeat claims or appeals were evaluated 10, 20, or 30 percent disabled.

The report also described the results of several simulated lump sum payments for minimally disabled veterans; for purposes of this program cost and workload analysis, “minimally” disabled veterans were defined as those whose combined service-connected disability evaluation is 10 percent. The Commission analyzed and discussed three scenarios: (1) lump sum payment based on a predetermined amount (10 years of future benefits at the current 10 percent disability payment rate) for new applicants; (2) lump sum payment discounted for present value and based on average life expectancy for new recipients rated 10 percent disabled; and (3) same payment details as described in (2) above, but applied to all existing 10 percent rated disabled veterans, as well as to new recipients.

This report considered, among other factors, program costs and savings expected to be associated with a lump sum payment versus 10 percent disability compensation. For purposes of this analysis, program costs and savings were calculated identically; the benefit amount paid by lump sum in a given fiscal year less the amount that would have been paid monthly during that year under the traditional monthly payment schedule equals the net cost or savings for the year. The analysis showed that, in the short term, this difference is positive, denoting a program cost. In the long term,

the difference is negative, denoting a program savings. Overall, long-term program savings exceeded short-term program costs.

The report also described the results of a focus group session at the Atlanta Regional Office on veterans' opinions concerning the lump sum concept. Initially, most of the focus group veterans wanted more information before they would offer an opinion of the concept. As described in the report, nearly all said they would be open to the lump sum payment idea provided that: (1) the lump sum was a fair amount; (2) they would maintain VA medical care; (3) there would be counseling and education on how to manage the lump sum, including financial management; and (4) they could return to the system if their condition seriously worsened.

In summary as exhibited in the report, the Commission observed that a lump sum disbursement policy for minimally disabled veterans had considerable potential benefits. It would be expected to: (1) provide substantial financial advantages at the point of transition to civilian life for veterans evaluated 10 percent disabled; (2) give these veterans a clear opportunity to make long-term investments that might yield a return exceeding uninvested monthly disability payments; (3) considerably reduce the volume of repeat claims, allowing concentration of VBA processing efforts on claims from more seriously disabled veterans; and (4) over time, potentially save taxpayer dollars by reducing administrative and program costs.

[21] U.S. General Accountability Office, "Disabled Veteran Programs: U.S. Eligibility and Benefit Types Compared with Five Other Countries," GAO/HRD-94-6, Washington, DC, 1993.

This report reviewed the benefits other countries provide to disabled veterans and provided a comparison to the U.S.

Other literature

Copeland, Craig, "Retirement Plan Participation and Retirees' Perception of Their Standard of Living," EBRI Issue Brief No. 289, Jan 2006

This brief focused on a critical factor in retirement security: the presence of income or assets from an employment-based retirement

plan. The report exhibited data on the distribution of lump sum payments across various demographic characteristics.

Wooditch, Jon, Statement of Jon Wooditch, Acting Inspector General Department of Veterans Affairs, before the United States House of Representatives Committee on Veteran's Affairs Subcommittee on Disability Assistance and Memorial Affairs, Oct 20, 2005

The testimony examined the variance in VA disability ratings across states. The speaker reported that there was a great deal of variation. He also concluded that one way of reducing this variation was through a lump sum payment for veterans with a disability rating of less than 20 percent.

Bye, Barry V. and Reley, F. Gerald, "Eliminating the Medicare Waiting Period for Social Security Disabled Workers and Beneficiaries," *Social Security Bulletin* 52 (May): 2-15

The study followed the cohort of 18,782 people who were awarded benefits and enrolled in the SSDI program in 1972. The percentage of this cohort who died or recovered (and hence were dropped from the program) during the next two years was determined from SSA records. The study included 2-year death rates and recovery rates for this group by demographic categories, occupation, and diagnostic group. This cohort of disabled people was in bad health, as evidenced by the fact that nearly 13 percent died within two years. Only 5.3 percent recovered and were dropped from the SSA rolls. The two-year mortality rates were higher for males and Blacks, and also rose with age at entry.

The study also indicated that there was a wide variance of death rates by diagnostic group. For example, about 65 percent of those who were disabled by cancers (neoplasms) died within 2 years of admission to the disability insurance program. High mortality rates were also associated with genitourinary and digestive conditions: 25 and 22.5 percent died within 2 years. People whose disabilities were caused by traumatic injuries had the lowest mortality rate (2.6 percent), followed by musculoskeletal impairments (2.7 percent). Disabled beneficiaries whose limitations were caused by infectious diseases and traumatic injuries reported the highest recovery rates (23.3 and 22.1 percent, respectively). Overall these findings indicate

that many of the disabilities associated with military service may not result in increases in mortality rates. However, the short 2-year window of the study may have resulted in an underestimate of the impact of disability on mortality.

Oi, Walter Y., "Employment and Benefits for People with Diverse Disabilities," In *Disability Work and Cash Benefits*, Mashaw, Jerry, Reno, Virginia, Burkhauser, Richard, Berkowitz, Monroe, Editors, W.E. Upjohn Institute for Employment Research, Kalamazoo, Michigan, 1996

This chapter examined the economic consequences of disability and also considered the impact on mortality. The chapter also examined the theoretical and empirical impact of disability on labor force participation, as well as giving detailed descriptive data of the relationship between disability and earnings. The chapter summarized two studies that found a positive association between disability and death (Bound 1989 and Bye and Riley 1989).

Sheldon, George, Finkelstein, Eric, and Stiens, Scott, "Lump Sum Payments for Service Connected Veterans with 10 and 20 Percent Ratings" Sep 3, 1996 (minor revisions, Jan 21, 1997)

This study was a financial analysis of a proposal to offer a lump sum payment option to veterans receiving disability compensation payments rated at either 10 or 20 percent disabled. Under various assumptions about personal discount and acceptance rates, the initial budget year outlay for lump sum payments was estimated as well as the reduction in the present value of the VA disability compensation liability.

As stated in the report's summary, assuming (1) a 5 percent cost of capital to the U.S. government based on a projected 90-day Treasury Bill rate (2) a 10 percent discount rate for computing the present value of disability compensation payments over the expected remaining years of life for cohorts of veterans defined by period-of-service; and (3) a 50 percent acceptance rate for the lump sum payment option, the VA could achieve total financial savings of \$8.1 billion if lump sum payments were offered to all SC 10/20 veterans. Administrative savings might also occur but are expected to be small in comparison. The following two points were made in the study. First, expanding choices does not make veterans worse off. Second,

veterans who chose the lump sum payment option might later regret having done so. A mildly debilitating condition at the time the lump sum payment is accepted might deteriorate over time leaving the person severely disabled and possibly a candidate for a ratings upgrade had the lump sum option not been taken.

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