How Economic Crisis Affects Medical Expenditures

WASHINGTON STATE UNIVERSITY EXTENSION FACT SHEET • FS067E

Abstract

This fact sheet is designed to help Washington state policymakers, employers, and public health educators understand the relationship between unemployment, self-reported health status, and medical expenditures during economic crisis. Employment data from the state of Washington and medical expenditure data from the western region are used to discuss 1) the impact of the labor market environment on mental health status, 2) the differences in healthcare expenditures between employed and unemployed individuals, and 3) the differences in healthcare expenditures between individuals who report good mental health status and those who report poor mental health status.

Introduction

The issue of unemployment and its relationship to mental health status is of increasing importance as employment and associated healthcare benefits are becoming increasingly volatile. The economic impact of a spike in the unemployment rate extends beyond just the foregone wages and benefits to those who lose their jobs. Many more workers that do not actually lose jobs become increasingly concerned that they will join the ranks of the unemployed. This can cause a great deal of stress that leads to degradation of mental health, and studies have shown that poor mental health increases healthcare expenditures (Harman et al., 2004). This fact sheet discusses the relationship between unemployment, self-reported health status, and medical expenditures during economic crisis in Washington and nationwide so that policymakers, employers, and public health educators providers can make more informed decisions.

The material presented here is broadly divided into two sections. First, using data from the Bureau of Labor Statistics and Washington State Human Resources, the unemployment situation in the state of Washington is compared to that in the United States since the mid 1990s. Second, using data from the Centers for Disease Control and Prevention, the trend in self-reported health status from 2001 to 2010 among Washingtonians is discussed. Using data from the Department of Health and Human Services Medical Expenditure Panel Survey, information is presented on healthcare expenditures among the employed, the temporarily unemployed, those in good mental health, and those in poor mental health. The technical background that links mental health to employment status may be found in Mandal et al. (2011) and Mandal and Roe (2008).

The U.S. and Washington state labor markets

Job displacement is not new to the U.S. economy. It is estimated that from the late 1970s to 1995, 43 million jobs were permanently eliminated (Hamermesh, 1989; Kletzer, 1998; Smith, 1997). Then, more than 5.3 million workers, 4% of the total work force, were displaced between 2001 and 2003, prior to a period of robust economic growth that ended in late 2007 (Schmitt, 2004). However, in both production and service sectors of the economy, net job losses have been almost unprecedented following the recent collapse of equities and housing markets (Bureau of Labor Statistics, 2011a, d). According to the National Bureau of Economic Research, the latest recession started in December 2007 and ended in June 2009 (see http://www.nber.org/cycles.html for all business cycle dates since 1857), although the unemployment rate has remained quite high. Figure 1 graphs the net change in total gross jobs (gross job gains – gross job losses) in the private sector as a percent of employment levels from June 1992 to December 2010, which is the most recent data available as of this publication's release. The Bureau of Labor Statistics (BLS) defines gross job gains as the sum of increases in employment from expansions in employment at existing firms in the private industry and the addition of new jobs at new firms. Gross job losses are the result of contractions in employment at existing firms and the loss of jobs at closing firms. The red line in the chart corresponds to these statistics for the entire nation, while the blue line corresponds to these statistics for the state of Washington alone.

Although between June 2002 and December 2007 Washington had a healthy positive net change in total gross jobs in the private sector, since the latest recession it has been trailing the country in expanding employment opportunities. Gross total job losses outnumbered gross total job gains between June 2008 and December 2009 both nationwide and in the state of Washington. The decline reached

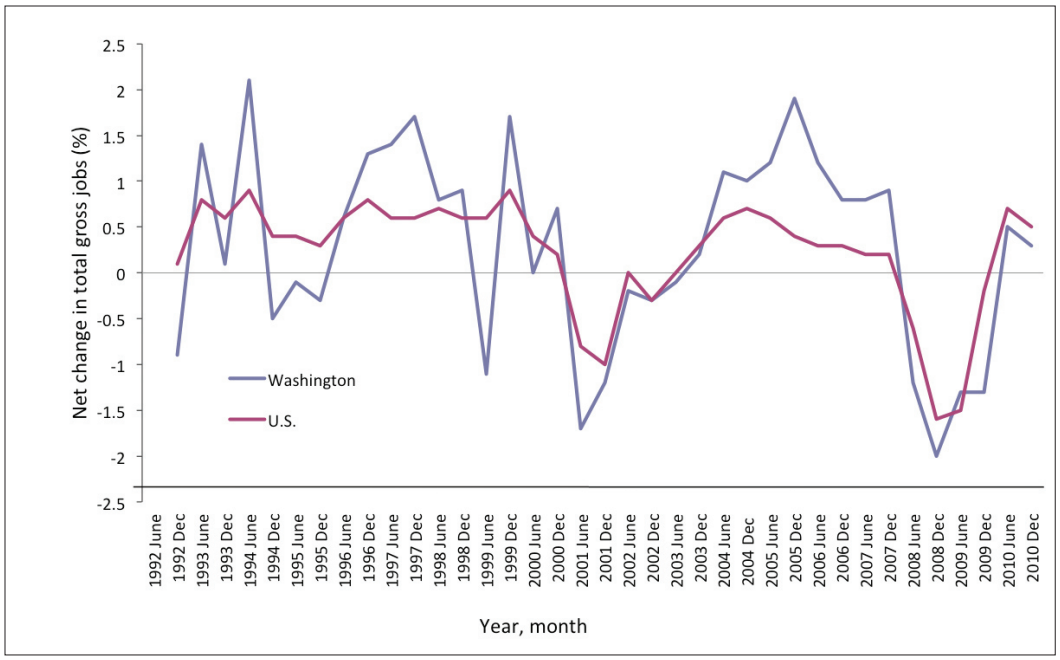

Figure 1. Net change in total gross jobs in the private sector between 1992 and 2010 (Bureau of Labor Statistics, 2011a).

its lowest point in December 2008, and then a positive net gain of 728,000 jobs in the United States (41,342 jobs in the state of Washington) was reported in the second quarter of 2010 (BLS, 2011b). Total gross job gains and losses in the private sector are seasonally adjusted to eliminate any variations within a year that occurs during the same period on an annual basis.

Over 1.8 million jobs were lost in the private industry in the last four months of 2008 after the failure of financial institutions and near closing of U.S. automakers (BLS, 2011a, d). An interesting and unfortunate feature of the latest recession is the persistence of a high unemployment rate even as federal programs try to accelerate job creation, as is exhibited in Figure 2. The blue line shows the unemployment rate in Washington, while the red bars depict the number of mass layoffs events in all industries in the state.

Although the number of layoffs reached its peak in 2009 and then declined, the unemployment rate increased between 2009 and 2010, indicating a gloomy economic environment. As of October 2011, the unemployment rate decreased slightly from an annual average of 9.6% in 2010 to 9.2% (BLS, 2011b, c).

A majority of the labor force in the state is located in seven counties: Kitsap, Spokane, Pierce, Yakima, Thurston, Snohomish, and King. Figure 3 presents the unemployment rates in these counties from 1990 to October 2011. As of this latest date, Kitsap County had the lowest unemploy-

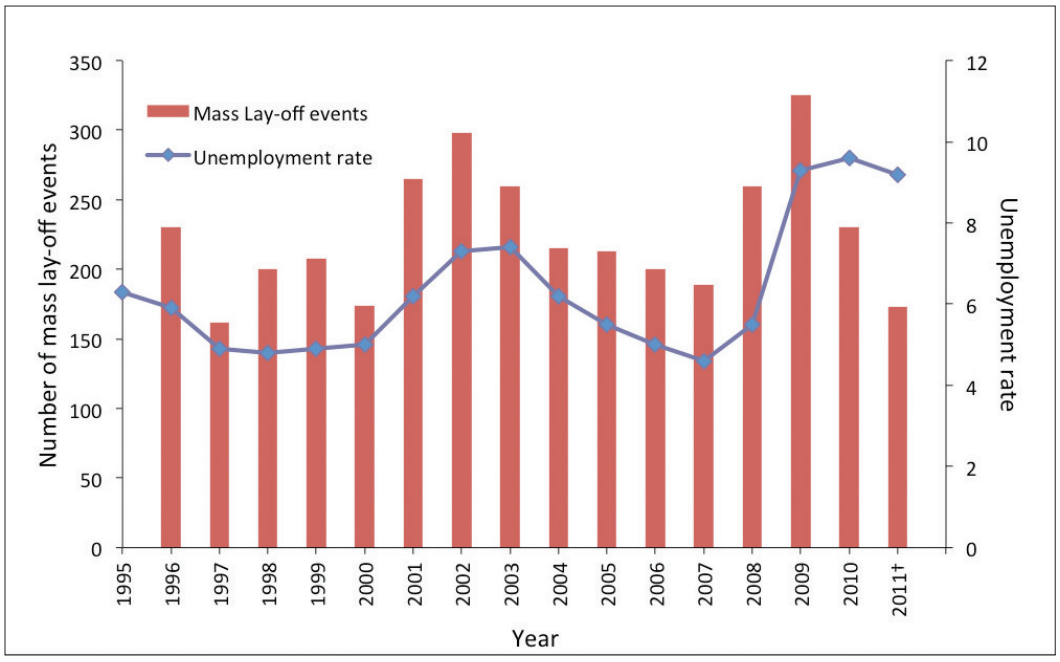

Figure 2. Measures of unemployment in Washington between 1995 and October 2011 (Bureau of Labor Statistics, 2011c, d). As of the release of this fact sheet, data from November and December 2011 were unavailable.

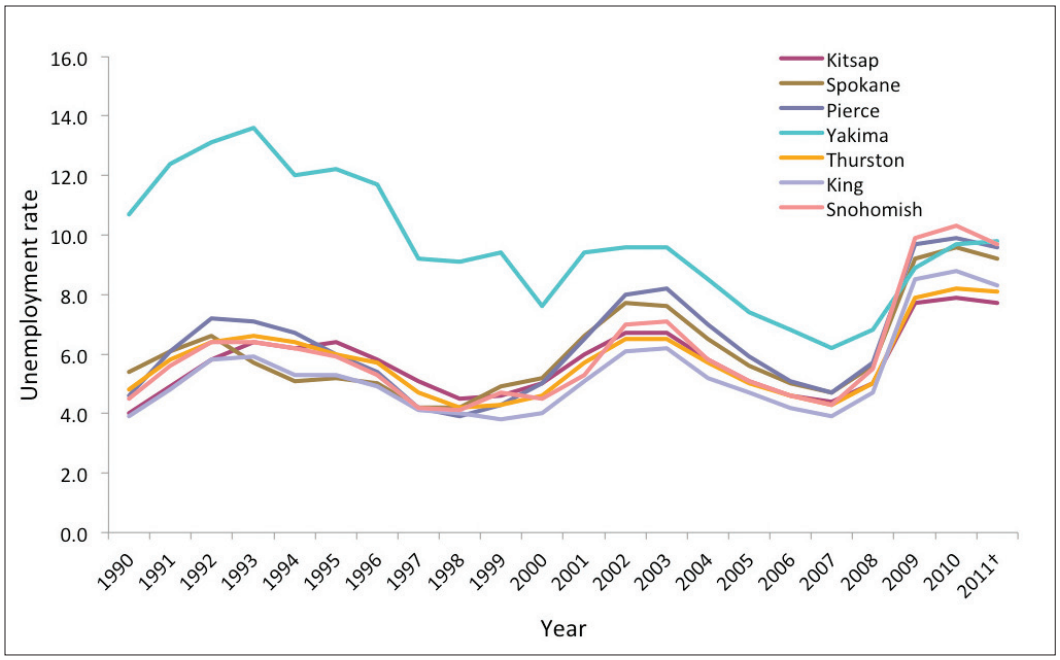

Figure 3. Unemployment rate in selected Washington state counties between 1990 and October 2011 (Bureau of Labor Statistics, 2011b). As of the release of this fact sheet, data from November and December 2011 were unavailable.

ment rate, at 7.3%, and Pierce County had the highest, at 8.9%. The numbers displayed in the graph are not seasonally adjusted.

Data from the Washington State Human Resources shows that approximately half of the state's employees are located in the Department of Social and Health Services, Department of Corrections, and Department of Transportation. A majority of these employees are located in Spokane, Snohomish, King, Pierce, and Thurston counties. Between fiscal years 2007 and 2010, the number of layoff activities (i.e., separations and appointment changes such as reduced hours) increased by 10%, from 144 events to 1603 events.

Self-reported health status and medical expenditures

The Behavioral Risk Factor Surveillance System of the Centers for Disease Control and Prevention (BRFSS-CDC) conducts annual telephone surveys to collect health conditions and risk behaviors in the United States. Public-use yearly data from 1984 through 2010 are available at http://www.cdc.gov/brfss/technical_infodata/index.htm. Respondents are asked about their general health status on a categorical scale that includes excellent, very good, good, fair, and poor. To simplify for this publication, the first three categories are combined to denote good general health status, and the last two categories both indicate a poor health status. Figure 4 shows the unemployment rate in Washington from 2001 to 2010 with an overlay of the percentage of individuals who reported poor general health status during the same time interval.

Since 2007 there appears to be a strong correlation between unemployment and self-reported health status. However, in years previous to 2007, the correlation was weaker. On average, 91.9% of employed individuals, 82.5% of short-term (less than a year) unemployed individuals, and 70.6% long-term (more than a year) unemployed individuals reported good general health between 2001 and 2010 from the state of Washington. Dividing the data (not shown here) into two time periods—from 2001 to 2006 and from 2007 to 2010—the percentage of short-term and long-term unemployed individuals who reported poor health status remained quite similar in both time periods, while the percentage of employed individuals who reported being in poor general health was six points higher from 2007 to 2010 than from 2001 to 2006. Thus, it is likely that a sig-

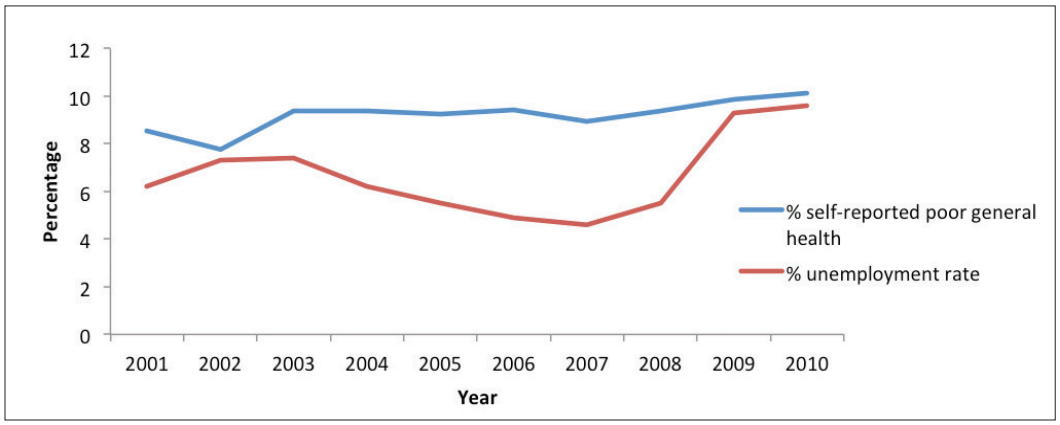

Figure 4. Self-reported health status in Washington state between 2001 and 2010 (Centers for Disease Control and Prevention, 2012).

nificant portion of the strong correlation between the state unemployment rate and self-reported poor health status during 2007 to 2010 is driven by the health of employed individuals rather than by the health of the unemployed. This observation agrees with studies that report in a bad economic environment, employed individuals grow pessimistic about their own job prospects (Mandal et al., 2011; Ferrie et al., 1998). Although the BRFSS-CDC does not ask respondents to rate their mental health status on a similar categorical scale, respondents are asked to report the number of days they felt their mental health was not good in the past 30 days due to stress, depression, or problems with emotions. The average number of days that employed, short-term unemployed, and long-term unemployed individuals endured poor mental health in the 30 days prior to the survey was 2.9, 5.5, and 7.2 days, respectively.

Next, household data from the western region is considered to study the relationship between medical expenditures, employment status, and self-reported mental health status. The Medical Expenditure Panel Survey (MEPS) collects data on the use of health services, cost of the services, sources of payment for care, access to care, health insurance coverage, along with demographic characteristics, health conditions, and employment status from a nationally representative set of American households. The public-use household-level data are available from the Agency of Healthcare Research and Quality. Households' states of residence are not disclosed in the public-use data files, but the census regions of residence are. The western region includes the states of Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, New Mexico, Nevada, Oregon, Utah, Washington, and Wyoming. Questions related to perceived mental health were not asked before the 2001 survey, and public-use data are available only until 2008. Self-reported general health and mental health status are coded using Clinical Classifications Software, which is a diagnostic tool based on the International Classification of Diseases.

The MEPS results include both self-reported general health status and self-reported mental health status. Because these two indicators are highly correlated, the mental health status data is used to study the relationship between unemployment, anxiety, and medical expenditures. MEPS respondents reported their mental health as excellent, very good, good, fair, or poor. Again, this publication combines the first three categories to denote good mental health status and the last two categories for poor health status. Detailed information regarding the mental health questions and categorization scheme may be found at http://www.hcup-us.ahrq.gov/toolssoftware/ccs/ccs.jsp.

The MEPS data excludes employed individuals who were on leave when the interviews were conducted. From the aggregate data it is not possible 1) to conclude the reason for unemployment (i.e., it is not known whether an individual was laid off or quit the job voluntarily), 2) to conclude the length of unemployment, or 3) to separate the long-term unemployed from individuals not in the labor force (such as homemakers and retirees). Therefore, this report only includes those short-term unemployed individuals who held no job during the interview, but had a job in other rounds of the panel surveys. Long-term unemployed (more than a year) individuals were excluded. Due to these differences, MEPS data are not comparable to the BRFSS-CDC responses, although the trends are similar in both datasets.

Compared to the BRFSS-CDC data, the sample sizes are considerably smaller in the MEPS database. For instance, the number of individuals interviewed from the western region who were unemployed and in poor mental health was less than 40 in each year from 2001 to 2008. Thus, it is not appropriate to discuss the average medical expenditure among the various combined categories of employment and health status (such as unemployed and in good mental health, or unemployed and in poor mental health) for both survey instruments. Instead, Table 1 presents the average healthcare expenditure according to employment status, and then according to self-reported mental health status.

Table 1. Average healthcare expenditures (in 2008 dollars) in the western region from all sources (Department of Health and Human Services, 2010).

Year	Employed	Unemployed	Good mental health	Poor mental health
2001	1990.88	3707.01	2019.21	4732.95
2002	2153.10	4312.46	2240.02	3591.30
2003	2411.43	4085.54	2367.18	5760.45
2004	2753.93	3199.07	2507.16	8866.04
2005	2710.58	4258.63	2742.36	4404.18
2006	2361.21	4441.07	2355.22	5687.78
2007	2757.14	4101.43	2745.86	4638.20
2008	2868.55	2894.68	2787.94	4617.54
Weighted average	2500.85	3874.99	2470.62	5287.30
Standard deviation	320.14	560.70	275.83	1604.69

As expected and discussed in the literature (e.g., Robb et al., 2003), individuals with poor mental health have higher healthcare expenditures than their counterparts. The standard deviation of health expenditure is also very high among individuals with poor mental health, indicating a large variability in medical care spending. The data also confirms that the average healthcare expenditure of unemployed individuals is higher than that of employed individuals. While employed individuals are more likely to use private health insurance for their medical needs, unemployed individuals are highly dependent on government programs, as shown in Figure 5. These pie charts present the various sources of healthcare payments (such as Medicare, Medicaid, out-of-pocket, and private insurance) as percentages of total healthcare expenditures among the employed and the unemployed in the western region in 2008. Figure 5 also shows that out-of-pocket expenditures were similar between employed and unemployed individuals.

Figure 6 compares shares of healthcare expenditures among individuals reporting good mental health and individuals reporting poor mental health status. The pie chart corresponding to the total healthcare expenditure for those in good mental health (Figure 6a) is quite similar to the pie chart for employed individuals (Figure 5a) due to high correlation between being employed and being in good mental health. For individuals with poor mental health,

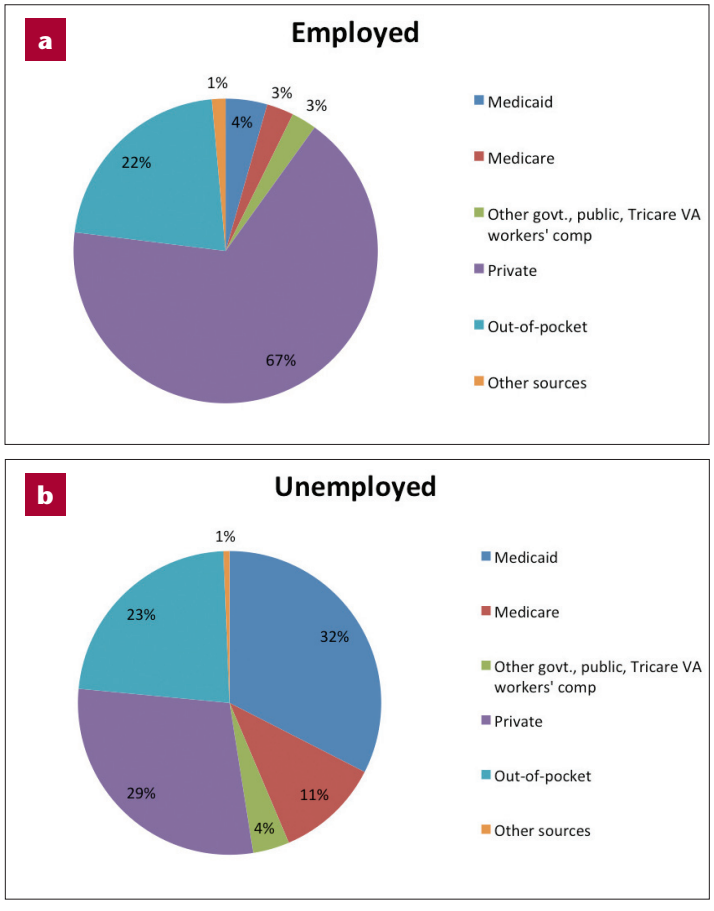

Figure 5. Distribution of sources of healthcare payments as shares of total healthcare expenditures by employment status in 2008 in the western region (Department of Health and Human Services, 2010).

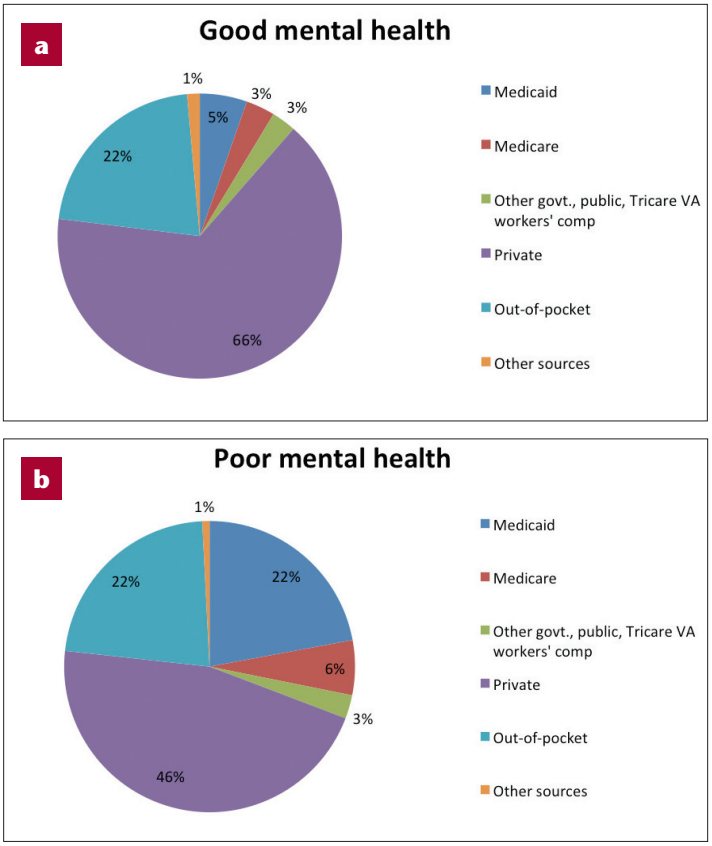

Figure 6. Distribution of sources of healthcare payments as shares of total healthcare expenditures by self-reported mental health status in 2008 in the western region (Department of Health and Human Services, 2010).

the use of government programs is comparatively higher, although the use of private insurance remains large (Figure 6b). It is possible that those with poor mental health are less productive at work, are more likely to be working in low-paying jobs, and hence more likely to be supported by welfare programs. In other words, even if the causality is such that mental health determines employment status, there is a positive correlation between poor mental health status and higher medical expenditures, and a high probability that a vast portion of this healthcare expenditure is supported by government programs.

Summary

Anxiety about retaining jobs, housing, and retirement savings is likely to rise in a sustained economic downturn. It is not possible to estimate the exact dollar value of medical services required to treat mental health issues induced by gloomy economic conditions using aggregate data. However, large nationally representative cross-sectional data do provide a general picture of the expenditure trends. All indications are that the demand for mental health services increases in economic crisis. Funding these services, as well as making sure that healthcare facilities are not overstretched to meet the spike in demand, are areas of concern. Due to financial constraints, mental health problems may go undiagnosed among unemployed individuals, festering into bigger health issues that are costlier to treat.

Those with limited financial resources are likely to enroll into already strained government programs.

Whether employed or unemployed, in good mental health or in poor mental health, the pie charts in Figures 5 and 6 show that individuals spend approximately 22–23% of their household budgets on healthcare. However, unemployed individuals have higher overall average expenditures (i.e., including all sources of payment) compared to employed individuals (as shown in Table 1), and are more dependent on welfare programs. Similarly, individuals with poor mental health have almost twice the amount of healthcare expenditures as those with good mental health. (Note, however, that a major limitation of using aggregate-level data is that the type of medical services being consumed is not known.)

To quantify and better qualify these statements, healthcare expenditure data are compared from three time periods: 2001 (small recession), 2002–2006 (movement out of recession and into good economic environment), and 2007–2008 (into great recession). These three time periods were selected because they represent the largest percentage net change in total gross private sector jobs in the state of Washington between 1992 and 2008 for which medical expenditure data is available (blue line in Figure 1). Table 1 shows that employed individuals spent 24.5% more on medical care during the good economic environment compared to what they spent during the small recession, while they spent 13.5% more during the great recession than the good economic environment. During the same intervals, unemployed individuals spent 9.5% more and 13.8% less, respectively. Over all time intervals (2001–2008), unemployed individuals averaged higher healthcare expenditures.

How do we explain this? In general, employed individuals have greater purchasing power than unemployed individuals and are more likely to have health insurance coverage. Thus, higher spending could be attributed to two effects—an income effect and a substitution effect. As income level increases, an individual is likely to spend more on all normal goods, including medical care. Thus, it is not surprising that at the end of a recession, both employed and unemployed individuals show increases in healthcare spending, with employed individuals consuming at a higher rate than unemployed individuals. A substitution effect occurs when an insured individual decides to consume more of the insured good as it becomes cheaper compared to other goods for which they have to pay the full price, leading to moral hazard. Moral hazard is a term commonly used in economics to describe how having insurance might lead to change in behavior of the insured person. For example, an insured individual only pays a deductible, a copayment, and/or a coinsurance instead of the full fee for a medical service. Thus, purchasing health insurance may induce consumers to take fewer precautions to prevent illnesses or purchase more medical care than they otherwise would without insurance.

Between the 2002–2006 and 2007–2008 periods when the economy transitioned from positive to negative, consumption of medical care continued to increase among employed individuals, though at a lower rate compared to the increase in consumption from 2001 to 2002–2006 when the economy improved. In contrast, unemployed individuals showed a decrease in consumption during the economic downturn between 2002–2006 and 2007–2008. This could be due to loss of insurance, fewer benefits in an insurance contract, or lower income. The question is whether as we start coming out of the great recession, will the demand for healthcare among the previously unemployed increase? The answer most likely is yes.

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