



TANF RELATED MEDICAL CASELOAD:
*Characteristics and relationships with Oregon's
economy, 2000 - 2005*

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Executive summary

Since late 2000 to 2005, numbers of one Medicaid caseload group — “Temporary Assistance for Needy Families (TANF) Related Medical” — have been increasing at rates that are disproportionate to the overall population. We used two approaches to study this phenomenon: (1) a comparison of caseload characteristics and economic indicators, and (2) a multiple regression analysis of the relative contributions of each factor to the caseload growth. Specifically, we attributed this growth to the subgroup that did not receive the TANF cash benefit. Through the recession and beyond, these no-cash clients joined the caseload in increasing numbers, stayed on longer and reentered the caseload more quickly. They also worked mostly part-time in low-wage, seasonal industries that typically offered little or no affordable health insurance. All clients’ wages and work hours were minimal during their caseload episodes. After the recession, Oregon sustained a loss of jobs in average- and high-wage industries as jobs in low-wage industries increased faster than others. This post-recession shift in job types minimized the opportunities for advancement from low-wage jobs to better-paying jobs that have greater probabilities of employer-sponsored health insurance or affordable premiums. From 2000 onward, high unemployment and then decreasing availability of affordable health insurance would have stimulated low-wage workers to seek public assistance. Indeed, the number of uninsured Oregonians living in poverty exhibited the greatest statistical association with the medical-only caseload. Internal process changes also contributed to variations in the caseload, but the degree to which this happened is difficult to calculate.

NOTE: This study analyzes the recent growth in the TANF Related Medical forecasting group (TANF = Temporary Assistance for Needy Families). For forecasting purposes, the TANF medical program is composed of two groups, TANF Related Medical and TANF Extended, which are forecasted separately. TANF Related Medical is composed of three primary subgroups: no-, single-, or two-parent households (Basic); un/under-employed two-parent households (UN), and Other Refugees, a relatively small group. After 1996, when cash assistance and Medicaid were separated, the Medicaid designation of TANF-eligible clients was Medical Assistance Assumed (MAA) and Medical Assistance

for Families (MAF). MAA clients in the TANF Related Medical program are eligible to receive TANF cash grants. Some, however, do not, due to choice or other reasons. These are termed medical-only clients. Clients in the TANF Extended caseload are individuals who have left TANF Related Medical due to changes in their financial circumstances related to increased employment income or child support payments, but do receive Medicaid benefits. Much of our analysis compares the medical-only and cash-recipient subgroups of the Basic and UN components of the TANF Related Medical caseload.

Background

The total TANF Related Medical caseload increased more than 75 percent since early 2001 to 2005 while the number of adults in this group increased more than 100 percent. The majority of this growth is due to the expansion of the medical-only portion of the caseload. Since eligibility requirements for Medicaid are the same for TANF cash recipients and TANF medical-only recipients (do not receive cash), clients usually choose to participate in one or both of these programs.

Previous attempts to explain this growth used workgroups of program staff that assessed the program changes occurring during this time. However, the estimated effects of these changes were not sufficient to explain the overall magnitude of the caseload growth. Thus, we surmised that other factors, e.g., the economy, might have accounted for much of the increase.

Study objectives

We first examined economic and other factors that have been linked to the significant increase in the TANF Related Medical caseload from 2000 through 2005. We then attempted to statistically determine the relative contribution of each primary factor to this growth.

Methods

We quantified various characteristics of clients' episodes as well as their work and income histories, and then examined these parameters relative to the economic conditions during the study interval. We focused on the two types of TANF Basic clients: those that receive the cash benefit and thereby participate in job facilitation services (cash clients), and those that forego the cash benefit (no-cash clients or medical-only). We did include UN and Extended clients in our analyses, however. For an explanation of our methods, please see *Appendix II*. Using regression analysis, we then determined the relative importance of the primary influences on caseload growth: the economy, demographics, the uninsured, and program/process change (*Appendix XII*).

Findings and conclusions

We found that increasing numbers of TANF Related Medical medical-only clients accounted for the observed growth in the caseload from January 2001 through the end of 2005. We surmised that this growth was due to the interrelationships between two phenomena during the study interval: (1) Oregon's recession (November 2000 through June 2003) and (2) decreasing access to affordable health insurance. Through the recession and beyond, medical-only clients joined the caseload in increasing numbers and reentered the caseload more quickly and in greater numbers than cash clients. Medical-only episodes were shorter than those for cash clients, but steadily increased in duration over the study interval while those for cash clients decreased. Both sets of clients worked, on average, part time in seasonal industries, but medical-only clients worked and earned more than cash clients.

During the recession, there was significant job loss with resultant unemployment. After the recession, low-wage industries added jobs at a greater rate than others so that opportunities for better-paying jobs may have decreased for these workers. Concurrently, accessibility to affordable health insurance decreased as well. Greatly increasing health care costs, in combination with the negative impacts of the recession, led to fewer employer-paid premiums, increasing employee contributions, and fewer employers that offered any medical insurance. The lack of accessibility to affordable insurance is especially evident in the very industries in which these clients worked. We found that the number of adult Oregonians with no health insurance and living in poverty formed the strongest statistical relationship with the medical-only caseload. Therefore, low wages in part-time jobs, combined with a lack of accessibility to affordable insurance, before, during, and after the recession, set the stage for increasing numbers of poor, uninsured Oregonians applying for the Oregon Health Plan.

Findings

The following table summarizes our numerical findings:

Summary of study findings for TANF basic cash and no-cash clients

Study variable	Cash	No-cash
Percent males	43.5%	43.6%
Percent females	56.5%	56.4%
Average percent of total monthly cohort that is female head-of-household	76.3%	58.0%
Unique initial episodes	27,504	65,881
Total number of episodes	88,345	137,590
Total number of unique clients per group	57,570	93,031
Percent increase, monthly counts, 4/2000 – 12/2005	4.3%	530%
Percent increase, monthly counts of new clients, 4/2000 – 12/2005	21.5%	52.5%
Total number of episode changes from cash to no-cash status	13,976	n/a
Total number of episode changes from no-cash to cash status	n/a	37,224
Total number of episode changes to TANF Extended	32,517	33,859
Durations of episodes	216 days	126 days
Total number reentering the caseload as no-cash status	6,149	10,118
Total number reentering the caseload as cash status	2,679	1,650
Average time to reentry, exiting from no-cash and entering as:	354 days	364 days
Average time to reentry, exiting from cash and entering as:	336 days	408 days
Average time to reentry, exiting from TANF Extended and entering as:	458 days	524 days
Average quarterly wage during caseload episodes	\$1,323	\$1,657
Average quarterly wage over all quarters	\$2,372	\$3,167
Average hours worked per quarter during caseload episodes	153	176
Average hours worked per quarter over all quarters	243	293
Percent increase in wages during episodes, 4/2000 – 12/2005	17.2%	81.8%
Percent increase in wages over all quarters, 4/2000 – 12/2005	18.1%	-0.7%
Number of new uninsured adults in poverty for every new medical-only client	n/a	37
Number of new female-headed households in poverty for every new cash client	46	n/a

Primary findings and conclusions follow:

General caseload characteristics

(Appendices V and XIII)

- » Numbers of Basic and Extended cash and no-cash clients exhibited significant statistical relationships with primary characteristics of the economy over the study interval.¹
- » We counted a total of 266,458 adults (≥19 years old) in six groups (cash and no-cash Basic and UN, and no-cash Other Refugees and Extended) over the entire study interval (April 2000 through December 2005).
- » Basic no-cash clients were the most numerous (93,031) during this time; Basic cash clients numbered 57,570.
- » Female heads-of-household averaged 76.3 percent of new clients per month for the TANF cash group, and 58.0 percent for the medical-only group.
- » Monthly numbers of Basic no-cash clients significantly increased since late 2000. This number increased 224.8 percent during the recession (November 2000 – June 2003), and 529.7 percent over the interval from April 2000 through December 2005.
- » Monthly numbers of Basic cash clients increased 25.6 percent during the recession, and 4.3 percent over the entire study period.
- » The monthly numbers of brand new Basic no-cash clients increased 45.7 percent during the recession, and 52.5 percent over the study interval. The corresponding numbers for cash clients are 16.1 percent and 21.5 percent, respectively.
- » We estimated that the additional clients (those in excess of the growth that would be attributable to population increase alone) cost ≤ \$296,800,000 in total Medicaid expenditures.

Durations of episodes

(Appendix VII)

- » Episodic durations of cash clients (216.2 days) were significantly longer than those of no-cash clients (126.2 days). Durations for cash clients gradually decreased over the study interval, while those of non-cash clients increased until they differed by only 18 days in February 2004. Both series decreased after this date, however; durations of cash clients remained slightly longer than those of non-cash clients.

Movements and reentries

(Appendices VI, VIII, and IX)

- » We examined two types of movement among episodes: changes in classification with and without a break in service of ≥ 60 days. We used the term reentry for beginning a new episode that occurred at least 60 days after a preceding service. We grouped continuous episodes into “spells” of service. If a client exhibited two or more spells, then the interval between them would be the “time to reentry.”
- » The most numerous movement was from Basic no-cash to Basic cash status; this occurred for 37,224 episodes. Conversely, we observed only 13,976 movements from Basic cash to no-cash. There was significant transition from Basic to Extended in almost equal numbers from both cash and no-cash status.
- » We counted 45,532 reentries over all possible combinations of groupings and cash categories. The most numerous reentry was from Extended to Basic no-cash (12,775). The next most numerous was from Basic no-cash back to Basic no-cash (10,118). Basic cash to no-cash (6,149) outnumbered no-cash to cash (1,650) and cash to

¹ “Basic” is one of three subgroups that comprise the TANF Related Medical caseload. The TANF Extended subgroup is independent of TANF Related Medical and forecasted separately.

cash (2,679). No-cash clients tended to stay no-cash clients.

- » Seventy-six percent of all clients who reentered the caseload did so only one time. Nearly 20 percent reentered two times (had three caseload spells of service).
- » Clients exiting from Extended exhibited the longest average interval before reentering the caseload (489 days). Clients exiting from Basic cash had interspell durations (382 days) that were longer than those for Basic no-cash (358 days).
- » Times between leaving the caseload and reentering the caseload (called interspell durations) for Basic no-cash to Basic no-cash and to Basic cash were similar (364 vs. 354 days). Interspell durations from Basic cash to Basic cash and to Basic no-cash were dissimilar (336 vs. 408 days).
- » For Basic no-cash clients, the number of reentries increased over the study period, while the overall time-to-reentry decreased.
- » Basic no-cash reentries, as a proportion of the available Basic no-cash clients, increased over the study interval. Those for Basic cash clients decreased over this time.
- » Reentry characteristics of Basic no-cash clients were closely tied to the economy.

Wages and work

(Appendices X and XI)

- » During Oregon's recession, there was little difference between cash and no-cash hours worked and subsequent wages while receiving services. In post-recession quarters, however, no-cash work and wages increased significantly over those of cash clients.
- » For every group, clients worked the most hours and earned the highest wages before and after their involvement on the caseload.

- » Patterns of hours-worked in the most prevalent job types for both groups exhibited consistent seasonality throughout the study interval.
- » All client groups, on average, worked part time every quarter.

Multiple regressions

(Appendix XII)

- » Medical-only monthly cohorts can be predicted by a statistically-significant regression model incorporating the monthly number of uninsured adults living in poverty, the percentage of female-headed households with children that live in poverty, and changes in applicant processing. These independent variables held 67.9 percent, 19.1 percent, and 13.0 percent of the predictive power of the model, respectively.
- » TANF cash monthly cohorts can be predicted by a regression model using the percentage of female-headed households with children that live in poverty, and changes in applicant processing. These independent variables held 69.5 percent and 30.5 percent of the predictive power of the model, respectively.
- » According to the model, we will experience one new medical-only client for every 37 additional uninsured adult Oregonians living in poverty, and one TANF cash client for every 46 additional female-headed households with children in poverty.

The following table presents our interpretations of how the observed characteristics of TANF OHP clients related to the economy and the resultant economic effect of that relationship.

Characteristics of TANF clients and relationships to Oregon’s economy

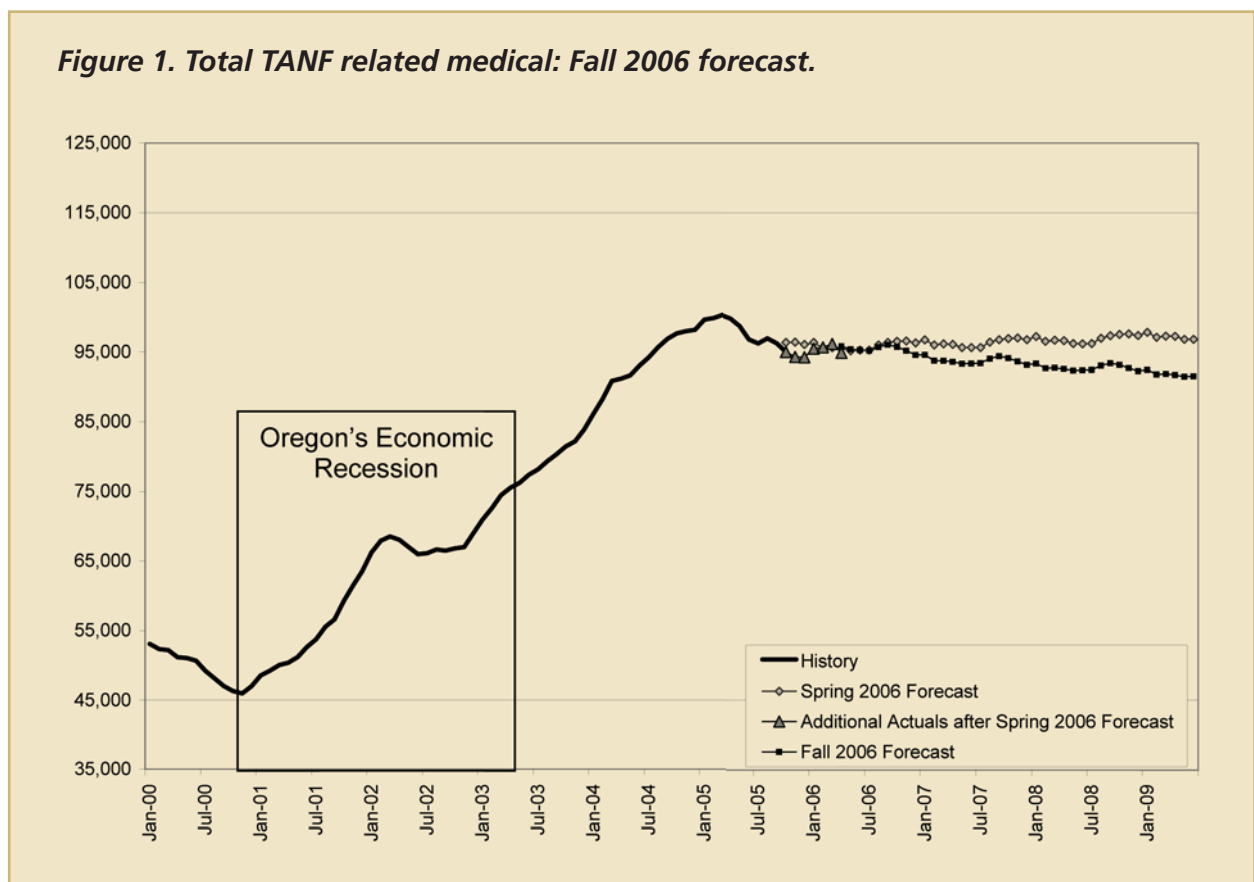
Characteristics	Economic factor	Assumed outcome
OHP TANF caseload has grown since 2000 due to increasing numbers of no-cash clients joining and staying.	Statewide job loss, increasing unemployment, reduced business revenue in conjunction with rapidly-increasing insurance costs for 33 months.	Unemployed or under-employed workers are unable to find full-time, better-paying jobs for a relatively long time. Their existing jobs probably do not offer health insurance, or the required employee contribution would preclude participation. Since no-cash clients want medical insurance and qualify, more and more low-wage workers would enter the caseload with time. The lack of opportunity for better jobs and access to employer-sponsored insurance (ESI) remains for several months so that these clients must remain on the Oregon Health Plan (OHP).
More clients enter the caseload as Basic no-cash than cash; more go from no-cash to cash.	Reduced or no availability of affordable insurance; lack of transition jobs; overall increase in low-wage jobs.	Low-wage, part-time workers need medical insurance; these workers turn to the OHP and are TANF eligible. During and after the recession, “promotional” positions decline as low-wage jobs gain in number. Opportunities for ESI decline over time.
Majority of no-cash clients reentered the caseload after exiting and retained their no-cash status.	Job/opportunity stagnation with no options for affordable insurance. Clients stay in available low-wage jobs.	Low-wage, part-time workers need medical insurance; these workers turn to the OHP and are TANF eligible. To retain health insurance, no-cash clients would have to reenter the caseload after their initial period of eligibility while waiting for better jobs.
Number of no-cash reentries increased and time-to-reentry decreased over the interval. Reentry was statistically associated with unemployment.	Cumulative effects of job loss and unemployment over time.	Many of the reentrants could have suffered job loss. As the recession progressed, unemployment grew as opportunities declined. Reentry per month followed the “dip and recovery” of the recession.
During episodes, relatively flat wage growth during recession; no-cash had large wage growth post-recession; cash clients’ wage growth remained low.	Increased job availability in 2004 and 2005, but greater proportion of jobs in low-wage industries.	During the recession, job loss depressed wages overall; faster post-recession job gain in low-wage industries enabled more work with increasing wages overall, but accessibility to affordable medical insurance remained minimal. Wage gain was not sufficient to preclude eligibility for OHP.
Most clients worked part time; no-cash clients increased hours slightly post-recession.	Job loss depressed wages and work; post-recession structural shift in jobs; job gain.	These clients worked in low-wage industries with a high degree of seasonality. The initial loss of jobs depressed work, wages, and opportunities for advancement. Post-recession job gain allowed more work, but the shift to low wage job growth inhibited wage gain and access to affordable health insurance.

Discussion and conclusions

Increase in caseload

The objective of this study is to assess the significant increase, from early 2000 through 2005, in TANF Related Medical clients on the Oregon Health Plan (OHP). In the data set, we noted increases of 84.6 percent in the Basic caseload from April 2000 to December 2005 (monthly counts), and 70.4 percent in the total TANF Related Medical caseload for the same interval.

Figure 1. graphs the official caseload data and forecast for TANF Related Medical. From January 2000 to January 2001, the caseload actually decreased by 8.5 percent. But from January 2001 to January 2002, the monthly caseload increased 36.4 percent; from January 2001 to January 2004, it increased 77.5 percent. The caseload continued to increase until recently, and is expected to trend slightly downward through 2009.



In this study, which was limited to adults (≥ 19 years), we found that all no-cash clients increased by 126.6 percent over the same period, and 46.3 percent during Oregon's recession (November 2000 through June 2003). Cash clients increased only 7.4 percent from April 2000 to December 2005.² Correspondingly, the proportion of all Oregonians living in poverty increased 19.5 percent from 2000 to 2005. The increase for adults was 20.8 percent.³ The proportional increase in the TANF Related Medical caseload was much greater than the corresponding proportional increase in the assumed number of potentially eligible clients of all ages. In other words, if the demand for services and benefits had remained constant over this time, then the TANF Related Medical caseload should not have grown at these high rates of increase. Clearly, demand did change.

We estimated the cost of additional TANF clients that could be attributable to factors other than population growth. We determined that this growth was far greater than that which would be expected if only due to simple population growth, and the proportion of people in poverty who are uninsured remained constant. We calculated the difference between the actual growth and this theoretical rate, and applied the average annual cost for TANF Related Medical clients to this difference. This estimate (from November 2000 through October 2005) is \leq \$290,800,000 in total Medicaid expenditures (*Appendix XIII*).

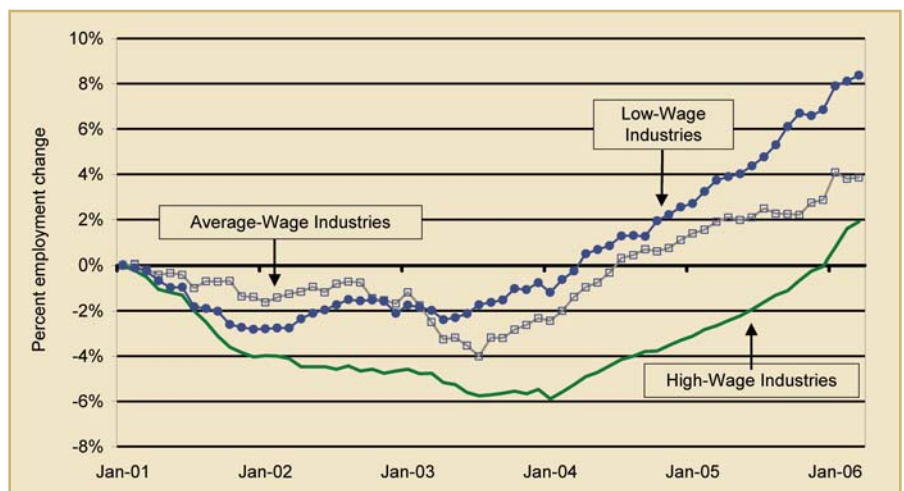
Oregon's recession

Oregon's economic recession was the most notable phenomenon during this time that would have affected demand for services to this degree. Oregon's economy began to lose jobs in early 2001 and did not return to growth mode until mid-2003. Between January 2001 and July 2003, Oregon's economy lost more than 60,000 jobs. Since the trough of the recession in mid-2003, the state has added nearly 140,000 jobs between July 2003 and March 2006.

While jobs have been added across all wage-level categories since early 2004, jobs in the state's low-wage industries have grown faster than jobs in average- and high-wage industries (*Figure 2*). From July 2003 to March 2006, low-wage industry jobs grew by a little more than 10 percent, adding more than 57,000 jobs, while average-wage and high-wage industry jobs increased by roughly eight percent and added 42,100 and 40,600 jobs, respectively. As a result, low-wage industries account for a growing share of Oregon's employment.⁴

The number of jobs in low-wage industries did not exceed the January 2001 level until March 2004; those for average-wage industries did so in July 2004, while jobs in high-wage industries did not recover until January 2006. Thus, for most of the study interval and well beyond the recognized end-date of Oregon's recession (June 2003), clients faced a continuing lack of better-paying employment opportunities. This situation would have a cumulative effect on the caseload whereby clients would tend to remain for longer periods as well as reenter more quickly once they exited. Indeed, we observed increasing episode durations and decreasing times-to-reentry through late

Figure 2. Percent change in employment since January 2001* by industry wage level



* Employment data are seasonally adjusted.

² Most medical-only clients choose not to receive the TANF cash benefit; we have not established their rationale for doing so, however. The Washington State Office of Financial Management conducted surveys of low-income parents (n = 501) in 2004 to delineate reasons for their non-participation in assistance programs for which they were potentially eligible. Most received Medicaid benefits. Reasons cited for not participating in TANF (106 of 176 eligible did not participate) included: (1) don't want to rely on welfare (75.0%); (2) own a car and don't want to sell it (54.1%); and (3) don't want to deal with DSHS (44.6%).

³ U.S. Census Bureau 2005 American Community Survey: Oregon Data.

2004 for no-cash clients. Any corresponding increase in wages and hours worked during this time and beyond would not be enough to preclude eligibility for TANF Related Medical or enable purchasing private insurance. Interestingly, the number of working no-cash clients increased during this interval, but the actual proportion working per quarter decreased by 42 percent (Qtr 2 2000 compared to Qtr 4 2005) as more and more (temporarily) unemployed clients joined and remained on the caseload.

Availability of health insurance

Along with a shift in industry wage levels, a second phenomenon occurred that would have affected caseload numbers: the availability of employer-sponsored, affordable health insurance has declined since 2000 in conjunction with increasing numbers of uninsured Oregonians. The proportion of all uninsured has increased 39.3 percent from 2000 to 2004 (12.2% to 17.0%). Working-age adults are the most likely group to lack health insurance (21.6 percent in 2004). Among these, younger adults are most likely to be uninsured (> 37% of 18 – 24 year olds are uninsured). Younger adults are more likely to work in low-wage industries in temporary jobs that lack benefits, notably, affordable health insurance. And the proportion of uninsured also increases with decreasing incomes.⁵

The availability of health insurance is not equal across Oregon's economic sectors. The results of a 2004 Oregon Employment Department survey of Oregon employee benefits state that health insurance is the third most common type of benefit after paid vacations and paid holidays. Full-time employees are four times more likely to be offered health insurance benefits as part-time employees. Further, the availability of health insurance differs greatly across industries. The information, health care/social assistance, and wholesale trade industries are most likely to offer

health insurance to full-time workers; least likely are the business services, construction, and leisure and hospitality industries. For part-time workers, the education services industry is the leader (25 percent of firms) while the leisure and hospitality industry is least likely (about five percent of firms). Availability of health insurance also varies by region, size of firm, and wage level.⁶ Because the no-cash clients primarily worked part time in low-wage industries, affordable health insurance was minimally available to them.

Oregon economists estimate that 52 percent of firms offered contributions to health insurance for all non-management employees in 2002. Rising health care premiums preclude low wage earners from purchasing private coverage. Indeed, the Kaiser Family Foundation estimates that in Oregon, there were 54,700 fewer non-elderly adults with employer-sponsored insurance in 2004 than in 2000.⁷ Nationwide, the percentage of Americans with private health insurance declined to 67.7 percent in 2005, marking a pattern of erosion for the past several years. A recent study by the Urban Institute found that increasing premium cost is the main reason that adults' private insurance coverage has declined in recent years; coverage is less affordable for employers and employees alike. The report also stated that rising private insurance premiums have led to higher Medicaid enrollment of adults as low-income workers are forced out of private coverage.⁸

The recent 2006 Employer Health Benefits survey by the Kaiser Family Foundation stated that, nationwide, premiums for employer-sponsored health coverage rose an average 7.7 percent in 2006, less than the 9.2 percent increase recorded in 2005 and the recent peak of 13.9 percent in 2003. This year's survey found the slowest rate of premium growth since 2000, though premiums still increased more than twice as fast as workers' wages (3.8%) and overall inflation (3.5%). Premiums have increased 87 percent over the past six

⁴ Moore, Eric. Low-Wage Industries Continue to Fuel Oregon Job Growth Figures. Oregon Labor Trends, Oregon Employment Department. August 16, 2006. ⁵ Office for Oregon Health Policy and Research. 2006. Profile of Oregon's Uninsured, 2004.

⁶ Art Ayre. 2006. Oregon Employee Benefits 2005. Oregon Employment Department.

⁷ Kaiser Family Foundation, www.statehealthfacts.org.

years. Family health coverage now costs an average \$11,480 annually, with workers paying an average of \$2,973 toward those premiums, about \$1,354 more than in 2000.

In Oregon, a recent report by Families USA found that health care premiums rose an estimated 5.9 times faster than earnings for Oregon's working families from 2000 to 2006. During this time, health care premiums rose by 82.2 percent, while median earnings rose by only 14.0 percent. Key findings in the report are:

- » For family health coverage provided through employers, annual health insurance premiums rose from \$6,654 to \$12,125, an increase of \$5,471, or 82.2 percent.
- » The median earnings of Oregon's workers increased from \$22,401 to \$25,537, or 14.0 percent.
- » For family health coverage in Oregon, the employer's portion of annual premiums in the 2000-2006 period rose from \$4,997 to \$9,227, an increase of 84.6 percent.
- » For family health coverage, the worker's portion of annual premiums rose from \$1,657 to \$2,898, an increase of 74.9 percent. Thus, in 2000, workers used 7.4 percent of their median wage to pay for family health insurance premiums. For 2006, this cost was 11.4 percent; this increased share translates into a proportional increase of 53.4 percent of the median wage that goes to the cost of the premium.
- » For individual health coverage, the employer's portion of annual premiums rose from \$2,181 to \$3,908, an increase of 79.2 percent.
- » For individual health coverage, the worker's portion of annual premiums rose from \$286 to \$508, an increase of 77.5 percent.

According to the report, the disproportionately high increases in insurance premiums occurred despite the provision of "thinner coverage" to workers, coverage that offers fewer benefits and/or that comes with higher deductibles, copayments and co-insurance. As a result, Oregon families are paying more but receiving less health care coverage. This report concludes that the confluence of higher health costs and stagnant wages is causing a growing number of Oregon families to become uninsured or underinsured. The number of non-elderly uninsured people in Oregon is more than 582,000, approximately 18.6 percent of the non-elderly population.⁹

In addition, the Kaiser survey found that about 61 percent of firms nationally offer health benefits to at least some of their workers, statistically unchanged from last year's offer rate (60%). While nearly all large businesses (with at least 200 workers) offer health benefits to their workers, fewer than half of the smallest firms (with three to nine workers) do. Also, on average, workers are paying \$259 more this year than they did last year toward the cost of family health coverage. Workers at small firms (with three to 199 employees) on average contribute significantly more to their premiums (\$3,550 for family coverage) than workers at larger companies (\$2,658 for family coverage). Workers this year are paying about 16 percent of premiums for single coverage and 27 percent of premiums for family coverage, with their employers paying the rest. That share is essentially unchanged in recent years.¹⁰

Demographics

Various population subgroups may comprise the primary base for a particular social program. Mandatory filters are placed on pools of potential applicants via income and other eligibility requirements. For example, Long-term Care services are provided to low-income

⁸ Hadley, Jack. 2006. The Effects of Recent Employment Changes and Premium Increases on Adults' Insurance Coverage. Medical Care Research and review. 65(4): pp 447-476.

⁹ Families USA. Premiums versus Paychecks: A Growing Burden for Oregon's Workers. October 2006

¹⁰ Kaiser Family Foundation. September 2006. Employer Health Benefits 2006 Annual Survey.

¹¹ Analysis of Medicaid Caseload Trends. September 2005. Wisconsin Department of Health and Family Services, Office of Strategic Finance.

citizens 65 years and older; these seniors make up the primary demand group for this program.

Likewise, societal circumstances can affect the eligibility status of particular individuals. We know that single females with children are more likely to have low incomes and other characteristics of poverty. Hence, this subgroup is more likely to receive benefits and services from medical and welfare programs. And the relative variation in these numbers over time, either intrinsic in the population or induced by other factors, will affect program caseloads. We found that both the TANF medical-only and cash caseloads were statistically associated with the percentage of single mothers living in poverty. Indeed, the majority of new clients per month were female heads-of-household in both groups. Additional factors, in turn, can lead to also lead to poverty. Income levels, however, are certainly related to the economy, and are interrelated to those factors discussed above.

Effects of program and policy changes

During the study interval, several program-related events occurred that could have affected the number of Oregonians participating in OHP as TANF Related Medical clients, either cash or no-cash (*Appendix III*). For example, in 2001, and as a result of a CMS review of Oregon's Medicaid program in 1999, DHS began to review mailed, statewide OHP applications for MAA/MAF (TANF Related Medical) eligibility at the Central Processing Unit (CPU) unit in Salem. These applicants were not considered for the JOBS program even though the MAAs would be eligible were they to choose to receive the cash benefit. Therefore, they would be medical-only clients. This unit averaged 366 eligible applications per month (January 2001 – September 2004). Most applications would represent at least two people, one of whom would be an adult. While this is a significant number, the forecasting model calculated an average of 1,568 new clients (adults only) coming onto the TANF Related Medical caseload per month during this time. Even though we found a statistical association

between the caseload and the revised processes in the CPU during this time (*Appendix XII*), it is unlikely that the CPU accounted for a large portion of the growth in medical-only clients during the study interval.

Determining the proportion of caseload growth that is caused by policy changes is difficult because appropriate analytical designs are seldom developed before implementation. For a similar study, the Wisconsin Department of Health and Family Services reported that its Medicaid caseload significantly increased in direct response to economic conditions during the same interval. These researchers believed that this factor contributed more to caseload growth than did policy and program changes.¹¹

Conclusions

We have described the disproportionate growth in the TANF Related Medical caseload relative to Oregon's economic recession and the workforce characteristics of these clients. We found that this growth was a function of increasing numbers of TANF Basic, medical-only clients. We found that these clients worked, on average, part time in seasonal industries during spans on and off the caseload. During the recession, there was significant job loss and resultant unemployment. After the recession, jobs were added in low-wage industries at a greater rate than others were so that opportunities for better jobs may have decreased for these workers. Concurrently, accessibility to affordable health insurance decreased. Greatly increasing costs led to fewer employer-paid premiums, increasing employee contributions, and fewer employers that offered any medical insurance. The lack of accessibility to affordable insurance is especially evident in the very industries in which the Basic clients worked. Therefore, low wages and lack of accessibility, before, during and after the recession, stimulated potential clients to apply for the Oregon Health Plan. The proportions of these clients that specifically chose medical-only benefits versus being automatically assigned are not known, however.

Policy implications

Knowledge of key relationships among caseload dynamics, workforce characteristics of clients, the state of the economy and the health insurance system should be incorporated into policy discussions relating to the provision of social services. Analysts can calculate specific outcomes given economic forecasts using variables like those in this study. The near-future variability in the forecasted numbers of per-capita jobs should indicate at least gross trends in caseload, and program options can be developed to accommodate or mitigate alternative levels of growth or decline.

Appendix I: Definitions

The following table lists the terms and concepts associated with our study.

Term	Definition
Cash Category	Either receiving the TANF cash benefit, or not (medical-only).
Change in hours Index	$\Delta HI_Q = \frac{\frac{\sum Hours_Q}{\sum Clients_Q} - \frac{\sum Hours_{Q-1}}{\sum Clients_{Q-1}}}{\frac{\sum Hours_{Q-1}}{\sum Clients_{Q-1}}}$ <p>This index calculates the percent change in work hours per client per quarter, from one quarter to the next</p>
Episode	Interval of time between the Begin date and the End date, and delineated by a change in PERC code and/or cash status.
Modified Reentry Index	<p>We identified the Basic cash clients who exited the caseload. We then determined, for a given month, which of these reentered as Basic cash and which ones had not reentered the caseload.</p> <p>A = all Basic cash clients that exited the caseload and then reentered as Basic cash during month M.</p> <p>B = all Basic cash clients that exited the caseload and had not reentered as Basic cash by month M.</p> <p>Modified Reentry Index for Basic cash in month M = A/(A+B)</p>
Monthly Cohort	A client is counted only once in a combination for the initial month of that episode. These numbers correspond to new individuals coming onto the caseload for a particular combination during the study interval.
Monthly Count	<p>We counted clients three ways:</p> <p>(1) A client is counted for a group for all consecutive months of an episode; clients can be counted more than once; or</p> <p>(2) Clients are counted only once for any specific group but can be counted more than once over the study interval; or</p> <p>(3) Clients are counted only once for the first group and not counted more than once.</p>
Movement	Reclassification with no break in service; a new contiguous episode. The service episodes are essentially continuous. These are movements within the caseload.
PERC code	Program Eligibility Report Code; used to classify eligibility of Medical Assistance Programs clients in the DSSURS administrative database.
Reentry	The occurrence of a second spell; a return to service 60 or more days after a previous service. These are movements by clients between the caseload and the external environment or another OHP classification.
Reentry Index	The number of clients reentering to a particular PERC and cash combination in a month divided by the total number of clients available to reenter: (# Reentries per Month)/((# Exits Never Reentering)+(# Exits That Eventually Will Reenter).
Spell	One non-contiguous episode, or two or more episodes that are separated by less than 60 days.
Time to Reentry	The number of days between spells, or the interspell duration.

Appendix II: Methodologies¹²

Study interval

Our study analyzed service and wage data for adult TANF Related Medical clients receiving services and benefits at any time during the interval from April 2000 through December 2005.

Data and data sources

Basic caseload data come from the DSSURS administrative database. Data records are unique intervals of client participation bounded by specific begin and end dates. Thus, we could quantify the primary components of caseload dynamics: relative client numbers per month, lengths-of-stay on the caseload, “movements” among groups, and “movements” on and off of the caseload.

Following are the data fields:

Variable	Definition
PrimeID	The unique client identifier.
DoB	Date-of-Birth.
SSN	Social Security Number.
BEGIN	Beginning date of the episode.
END	Ending date of the episode.
PREPERC	Client classification by PERC code immediately preceding the episode. Present only for continuous spans of time on the caseload.
PRE_CASH	Categorical variable indicating a TANF-cash recipient immediately preceding the episode. Present only for continuous spans of time on the caseload.
CUR_PERC	Client classification by PERC code during the episode.
CUR_CASH	Categorical variable indicating a TANF-cash recipient during the episode.
POST_PERC	Client classification by PERC code immediately following the episode.
POST_CASH	Categorical variable indicating a TANF-cash recipient immediately following the episode.
CUR_DUR	The duration, in days, of the episode.

Calculated data are derived from the basic data set.

PERC Codes

The TANF Related Medical caseload is composed of the following programs as indicated by PERC codes:

PERC	Program
2	Basic
82	Unemployed
V2	Other Refugees

We also forecast a second group, TANF Extended (XE). Although this study focuses on Group One, TANF Related Medical, we’ve included TANF Extended clients due to the interrelationships among these groups. We also excluded Other Refugees (V2), a very small group, from most analyses.

¹² See Appendix XII for detailed explanation of the regression analyses.

Counts

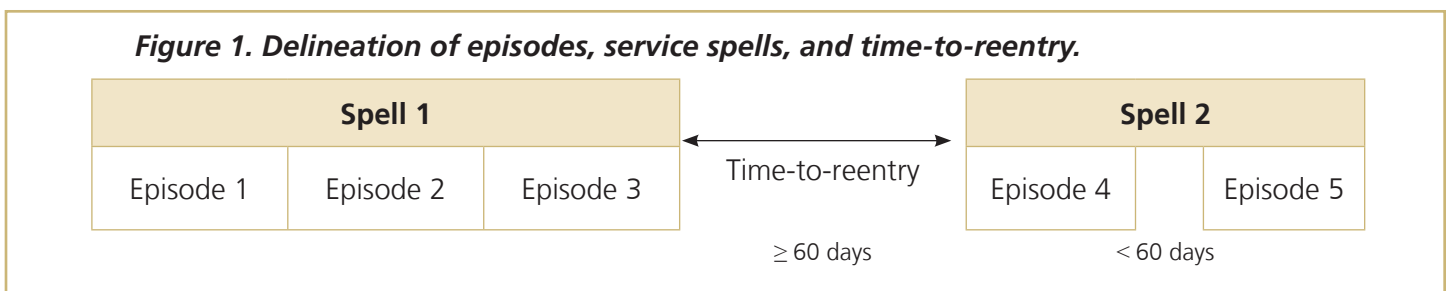
We developed and compared three types of groupings among PERC codes and cash status: attributes per month; attributes per monthly cohort; and totals over the study interval.

Grouping	Definition
Attributes per month	Client characteristics (counts or averaged) grouped for every month of the study interval across all episodes; represents all clients present in a month.
Attributes per monthly cohort	Client characteristics grouped (counted or averaged) by the month of the client's Begin date. We used two definitions for cohort: (1) all clients who start an episode in a particular month; individuals can be counted more than once in succeeding months. And: (2) all clients who start an episode in a particular month; individuals are counted only once in the starting group over the entire study interval.
Attributes over the study interval	An average of all clients within a PERC code and cash category; represents all clients present anytime during the study interval.

Movements between episodic categories

These data were very dynamic. One individual could be a member of two or more groups over the study interval. We defined a client episode as the reception of services and benefits over a continuous interval of time that is bounded by begin and end dates for a particular combination of PERC code and cash status. For example, a client can be Basic and receiving a cash benefit (PERC = 2 with cash) or not (PERC = 2 medical-only). Based on a client's status immediately following the episode-end-date, we then quantified two types of "movements" from one episode to another:

- » Type One: Reclassification with no break in service, or a break of <60 days. The service episodes are essentially continuous. These are movements within the caseload.
- » Type Two: Reentry onto the caseload after a minimum of sixty days without service. These are movements by clients between the caseload and the external environment. To assess one client's history over the entire study interval, we combined continuous episodes into service "spells." We then identified multiple spells per client. If there was a second spell, we categorized this phenomenon as a "reentry" onto the caseload. Two consecutive spells had an inter-spell duration of time, or "time-to-reentry." Thus, multiple service spells represent a client's history of exiting and reentering the caseload. Figure 1. illustrates this concept.



Episode durations per PERC and cash-status combination

Understanding the average interval of service, or time on the caseload, is critical to our analysis of the growing TANF Related Medical population. If more low-income Oregonians were choosing to enroll in OHP sans cash due to job-related issues, e.g., low wages and/or lack of affordable health insurance, then we would expect to observe client episodes that roughly correspond to the relative economic conditions of the state. That is, episodes and spells might be longer during downturns in the economy relative to times of expanding employment, wages and worker benefits.

Inherent in this approach, however, is the problem of “censored” episodes: intervals of service that begin or end before or after the study interval. Episodes that have not yet ended by the date of the data-pull are especially troublesome. Because censored episodes may represent information that is not equal to uncensored episodes, their inclusion may bias the results of the study. Thus, researchers must make decisions regarding how they will deal with them.

Fortunately, there are statistical procedures that use censored data, one being Kaplan-Meier Survival Analysis. The Kaplan-Meier procedure estimates time-to-event models using censored data. It is based on estimating conditional probabilities at each point of time when an event occurs and taking the product limit of those probabilities to estimate the survival rate at each point in time. We applied the Kaplan-Meier procedure to the entire data set (Type One Moves).

Reentries

We also developed a reentry index to assess the change in reentry over this time. This index equaled the number of clients reentering the caseload in a month divided by the total number of clients available to reenter in that month. For example, if 1,000 individuals had exited the caseload and were available to reenter any time prior to January 2003, and 500 of these actually reentered in January 2003, the reentry index for Basic cash in January 2003 would be 5.0 $((500/1,000) \times 10)$.

We then calculated a Modified Reentry Index (MRI) for specific groups. This approach used the number of available clients who exited a specific group as the denominator, and the number of these available clients who then reentered into that same group as the numerator. For example, we identified the Basic cash clients who exited the caseload. We then determined, for a given month, which of these reentered as Basic cash and which ones had not reentered the caseload. Thus, the denominator would be all Basic cash clients that were available to reenter in a given month, and the numerator would be those that did reenter in that month.

A = all Basic cash clients that exited the caseload and then reentered as Basic cash during month M.

B = all Basic cash clients that exited the caseload and had not reentered as Basic cash by month M.

Modified Reentry Index for Basic cash in month: **MRI = A/(A+B)**

These calculations give more specific information for a particular combination of PERC and cash status.

Comparison of descriptors

We quantified caseload dynamics by comparing the following:

***For Adults (>= 19); by PERC code and cash status;
Present on the caseload anytime from April 2000 through December 2005.***

Variable	Monthly counts	Monthly cohorts	Total for the interval
Client counts	X	X	X
Movements	X	X	X
Episode durations	X	X	X
Reentries	X	X	X
Time-to-reentry	X	X	X

Economic effects

We submitted clients' Social Security Numbers to the Oregon Employment Department (OED). OED, in turn, matched these SSNs against its Quarterly Census of Employment and Wages database to provide the following information per SSN:

Variable	Definition
SSN	Social Security Number
YR_QTR_WRKD	Year and quarter for which work is recorded per employer.
WAGE	Total wages per employer and quarter.
HRS_WKS_WRKD	Total hours worked per employer and quarter.
NAICS	North American Industry Classification System; three digit code used to classify types of businesses.
Description	Text description of the three digit NAICS code.

The primary data issue concerned the different resolutions of all of the information. Wage and work data were by quarter, economic indicators were by month, and episodes could be any duration. We had to develop rules that enabled us to consistently assign wages and clients to PERC and cash categories; these follow:

- » **Pro-rating.** Client episode or spell periods have begin and end dates. We had to break these periods of service up into months or quarters for several analyses in this study. However, an episode/spell might span only a part of a month or quarter. In these cases, we calculated the percentage per month that was contained within the episode or spell. In turn, the episode or spell was classified as a particular PERC and cash category.

For example, if a particular service started March 1st of a given year and ended November 30 of that same year, the service occupied approximately 33 percent of the first quarter, 100 percent of the second and third quarters, and approximately 66 percent of the fourth quarter. It follows that for this service, the pro-rate factors for these quarters were approximately 0.33, 1.0, 1.0, and 0.66, respectively. When matching employment data to client episodes or spells, we multiplied the wage and hour values by the pro-rate factor to obtain a pro-rated wage per quarter and pro-rated hours per quarter, assuming that the wages and hours are uniformly distributed across the quarter.

There were instances where a client would have different types of services during a month or quarter. In this case, each service type has its own pro-rate factor for that month/quarter. For example, a client may be classified as TANF Basic for 20 percent of a quarter, and TANF-EX for 60 percent of that same quarter. The remaining 20 percent of the quarter would be without service. The pro-rate factors would be 0.2 for TANF Basic and 0.6 for TANF-EX. The remaining 20 percent would be considered either pre-, post- or in between episodes, depending on how the episode begin and end dates align with the month/quarter. The pro-rate factors for a given client-quarter would never add up to more than one.

- » **Most dominant episode.** For some analyses, we assigned a quarter's wages and work to the single most prevalent episode in that quarter. Usually, episodes encompassed more than one quarter. Using the pro-rate factors, we simply assigned all wages and work to the group with the largest factor for a particular quarter.

We also calculated the percent change from one quarter to the next in the per capita numbers of hours worked to examine the presence of seasonality in clients' employment using the change-in-hours index described in *Appendix I*. We then determined the percentage of full-time work exhibited per group; we used 520 hours per quarter as full time.

Following are the basic descriptors for this portion of the study.

For Adults (≥ 19); by PERC Code and Cash Status; present on the caseload anytime from April 2000 through December 2005.

Variable	Monthly/Quarterly counts	Monthly cohorts	Total for the interval
Mean Hourly Wage per Quarter	X	X	X
Mean Total Wage per Quarter	X	X	X
Mean Hourly Wage per Episode	X	X	X
Mean Total Wage per Episode	X	X	X
Mean Total Work per Episode	X		X
Mean Total Wage Over All Quarters	X		X
Mean Total Work Over All Quarters	X		X
Correlations among the above and Economic Indicators: Employment Index, Unemployment Rate, Initial UI Claims, and University of Oregon Index of Economic Indicators.	X	X	

Appendix III: Changes in Medicaid procedures

Several policy and procedural changes have occurred in Oregon’s Medicaid program since April 2000, the beginning of our study interval. We have discussed these events with program staff in an attempt to determine the relative, numerical impact that each would have had on the TANF Related Medical caseload during this time. Unfortunately, most of these are not quantifiable so that we are left with rough estimates of these effects. *Table 1.* lists the primary events, approximate dates of occurrence, and the estimated effects on the caseload.

Table 1. Procedural events in Oregon’s Medicaid Program affecting TANF.

Approximate date of occurrence	Event	Estimated caseload effect
July 1996	The Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PRWORA — welfare reform) replaced AFDC with TANF; PRWORA severed the link between receipt of cash assistance and Medicaid.	Enables the eventual Medicaid categories of cash recipients and medical-only clients.
July 1997	Oregon’s Section 1931 (of the Social Security Act) State Plan Amendment (SPA) makes the income and resource tests for Medicaid and TANF eligibility the same, and creates two groups: Medical Assistance Assumed (MAA) and Medical Assistance for Families (MAF).	Enables the two categories and sets up a potential situation whereby procedures alone could determine a cash or a no-cash designation.
September – November 1999	Staff from the Centers for Medicare and Medicaid Services (CMS) conduct a review of Oregon’s Medicaid program. Recommended that OHP-direct applications be screened for MAA/MAF (TANF) eligibility.	Oregon’s response was to implement a screening process at the OHP Central Processing branch that was external to the Adult and Family Services (AFS) application process.
July 2001 – August 2004	Oregon implements a pilot project to screen for and then determine MAA/MAF eligibility at the OHP Central Processing Unit. Staffing is expanded and the process becomes permanent in 2001. In August 2004, the unit ceased eligibility determinations for MAA/MAF but continued to screen for potential MAA/MAF clients. Potential MAA/MAF applications are now referred to local branch offices. The interval for case reviews went from 12 months to six.	While this process did identify MAA/MAF applicants, the disconnect with AFS precluded enrollment in Jobs and cash status. Thus, new TANF Related Medical clients via this branch could only be designated as no-cash. The unit averaged 366 eligible applications per month during its tenure.
Spring 2004	News of the potential for closure of the OHP Standard program resulted in very active outreach efforts by advocates that resulted in increases of new clients coming into all OHP programs. Outreach efforts were also occurring in the Food Stamp program.	New clients entered benefit programs including Food Stamps, TANF Related Medical, and other medical assistance programs.

Appendix IV: Preliminary statistical relationships

We examined numerical relationships among various economic indicators and two types of monthly counts: new entrants per group (cohorts) and total clients present per group per month. Interestingly, caseload growth was not restricted to the official interval of the recession, but continued until late-2004/mid-2005. Significant effects of the recession lasted well beyond its end date.

Table 1. lists correlation coefficients for the caseload and two economic variables. Numbers of total Basic cash clients and new no-cash clients per month exhibited the highest (negative) correlations with per-capita jobs.

Table 1. SPSS output: Correlations.

		Per Capita employment	Unemploy't Rate	Basic no-cash cohort	Extended cohort	Basic cash cohort	Basic no-cash total	Basic cash total
Per capita employment	Pearson r	1	-.837(**)	-.676(**)	.238(*)	-.409(**)	-.589(**)	-.796(**)
	P value		.000	.000	.049	.000	.000	.000
Unemployment rate	Pearson r	-.837(**)	1	.290(*)	-.589(**)	.257(*)	.147	.545(**)
	P value	.000		.016	.000	.033	.228	.000
Basic no-cash cohort	Pearson r	-.676(**)	.290(*)	1	.341(**)	.666(**)	.956(**)	.742(**)
	P value	.000	.016		.004	.000	.000	.000
Extended cohort	Pearson r	.238(*)	-.589(**)	.341(**)	1	.211	.468(**)	.185
	P value	.049	.000	.004		.082	.000	.129
Basic cash cohort	Pearson r	-.409(**)	.257(*)	.666(**)	.211	1	.582(**)	.552(**)
	P value	.000	.033	.000	.082		.000	.000
Basic no-cash	Pearson r	-.589(**)	.147	.956(**)	.468(**)	.582(**)	1	.742(**)
	P value	.000	.228	.000	.000	.000		.000
Basic cash	Pearson r	-.796(**)	.545(**)	.742(**)	.185	.552(**)	.742(**)	1
	P value	.000	.000	.000	.129	.000	.000	

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Appendix V: Basic descriptors

Counts of clients per PERC and Cash-Status Combination

We counted clients over the study interval three ways:

- » **Count One** — initial occurrence on the caseload — clients were counted only once for their very first PERC and cash-status combination over the study interval; the minimum count of individuals.
- » **Count Two** — all occurrences by PERC and cash-status combination as defined by episodic records — clients could be counted more than once; and
- » **Count Three** — unique occurrences — clients were counted only once for any specific PERC and cash-status combination but can be counted more than once over the study interval.

Count One

We counted 137,620 adults across all TANF-Related Medical and TANF Extended categories that were present on the caseload at any time during the study interval. These clients experienced a total of 382,280 specific episodes (2.8 episodes per adult client). *Table 1.* lists the number of individuals by the initial episodes per combination.

Table 1. Initial client episodes per category of TANF-Related Medical and TANF Extended Caseloads.

	PERC Code				Total
	Basic	UN	Refugee	Extended	
Not a cash recipient	65,881	18,617	2,251	20,005	106,754
Cash recipient	27,504	3,362	0	0	30,866
Total	93,385	21,979	2,251	20,005	137,620

Count Two

Table 2. lists the total number of episodes per category; a client can be counted in more than one combination as well as more than once in the same combination.

Table 2. Total client episodes per category of TANF-Related Medical and TANF Extended Caseloads.

	PERC Code				Total
	Basic	UN	Refugee	Extended	
Not a cash recipient	137,590	32,690	2,300	106,614	279,194
Cash recipient	88,345	14,741	0	0	103,086
Total	225,935	47,431	2,300	106,614	382,280

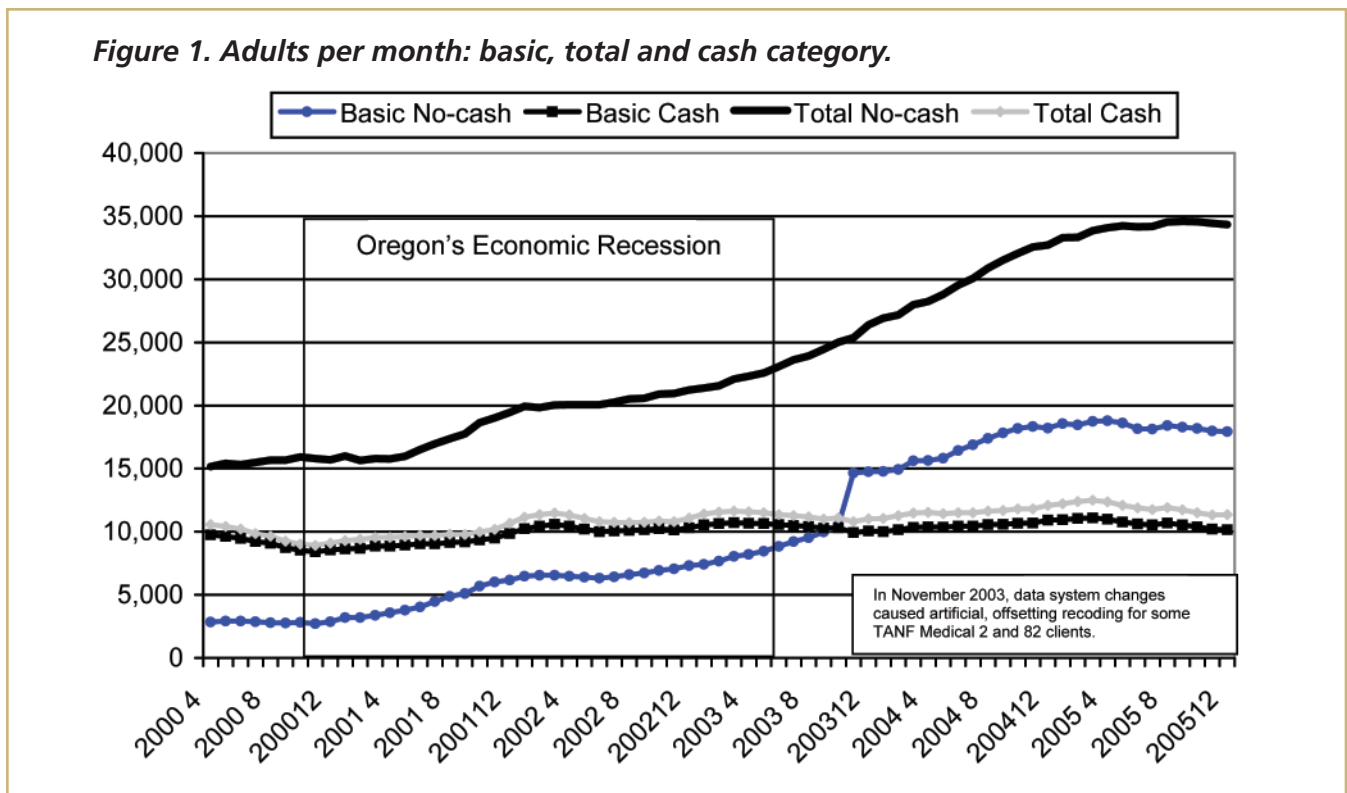
Count Three

Table 3. lists the total number of unique clients per combination; a client can be counted only once for a specific combination, but may be counted in more than one combination.

Table 3. Unique client episodes per category of TANF-Related Medical and TANF extended caseloads.

	PERC Code				Total
	Basic	UN	Refugee	Extended	
Not a cash recipient	93,031	24,949	2,273	77,056	197,309
Cash recipient	57,570	11,579	0	0	69,149
Total	150,601	36,528	2,273	77,056	266,458

Figure 1. shows the total number of episodes per category by month; a client can be counted in more than one combination as well as more than once in the same combination in succeeding months.

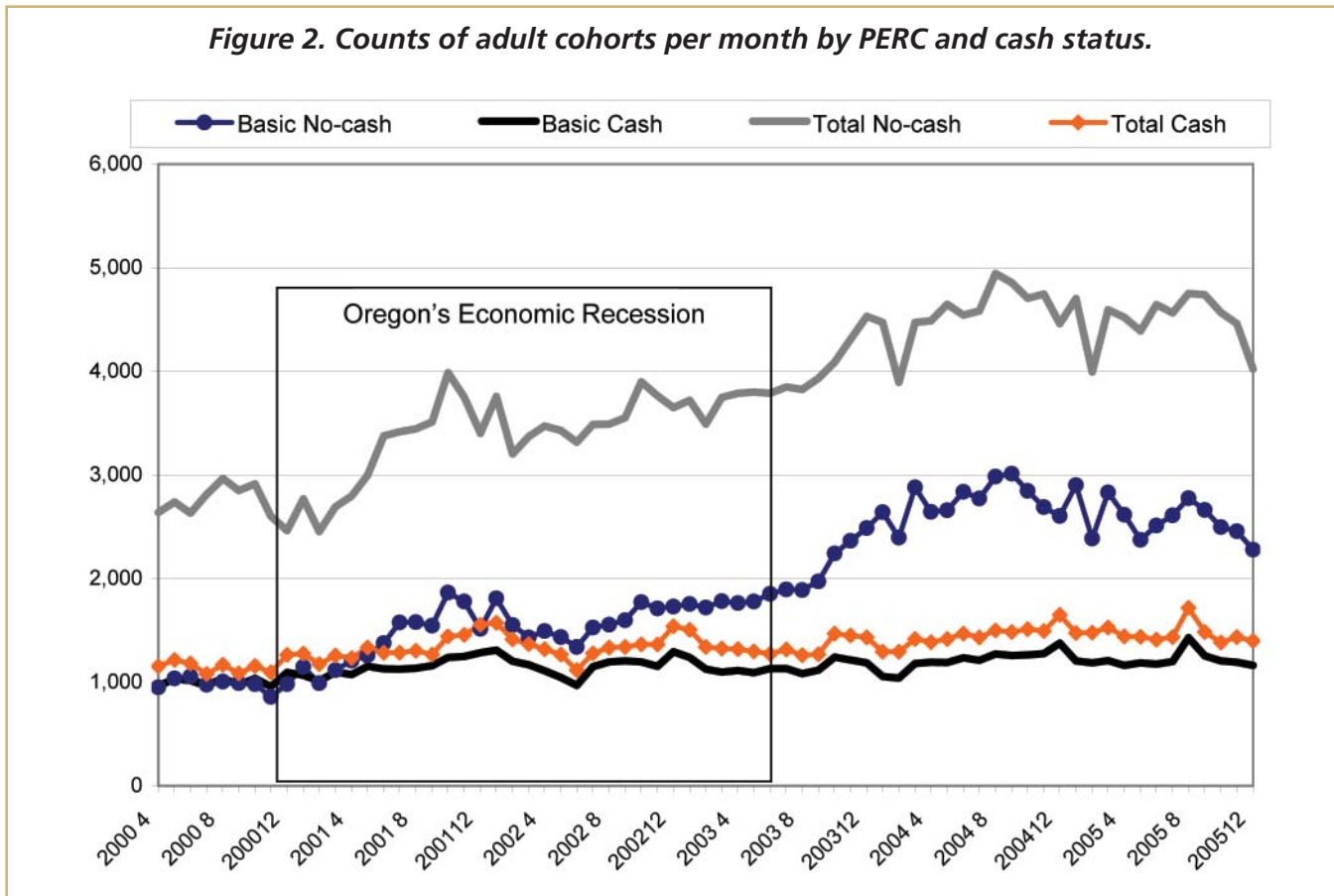


The monthly numbers of total TANF no-cash clients (Basic + UN + Extended) have continued to increase since late 2000, the approximate start of Oregon's recession. This number increased 46.3 percent during the recession, and 126.6 percent over the interval from April 2000 through December 2005. Data system changes in November 2003 artificially inflated the number of no-cash Basic clients while reducing that for no-cash UN; these errors were offsetting, however, so that the total number of no-cash clients remained realistic.

Monthly numbers of Basic no-cash clients have significantly increased since late 2000 as well. This number increased 224.8 percent during the recession, and 529.7 percent over the interval from April 2000 through December 2005.

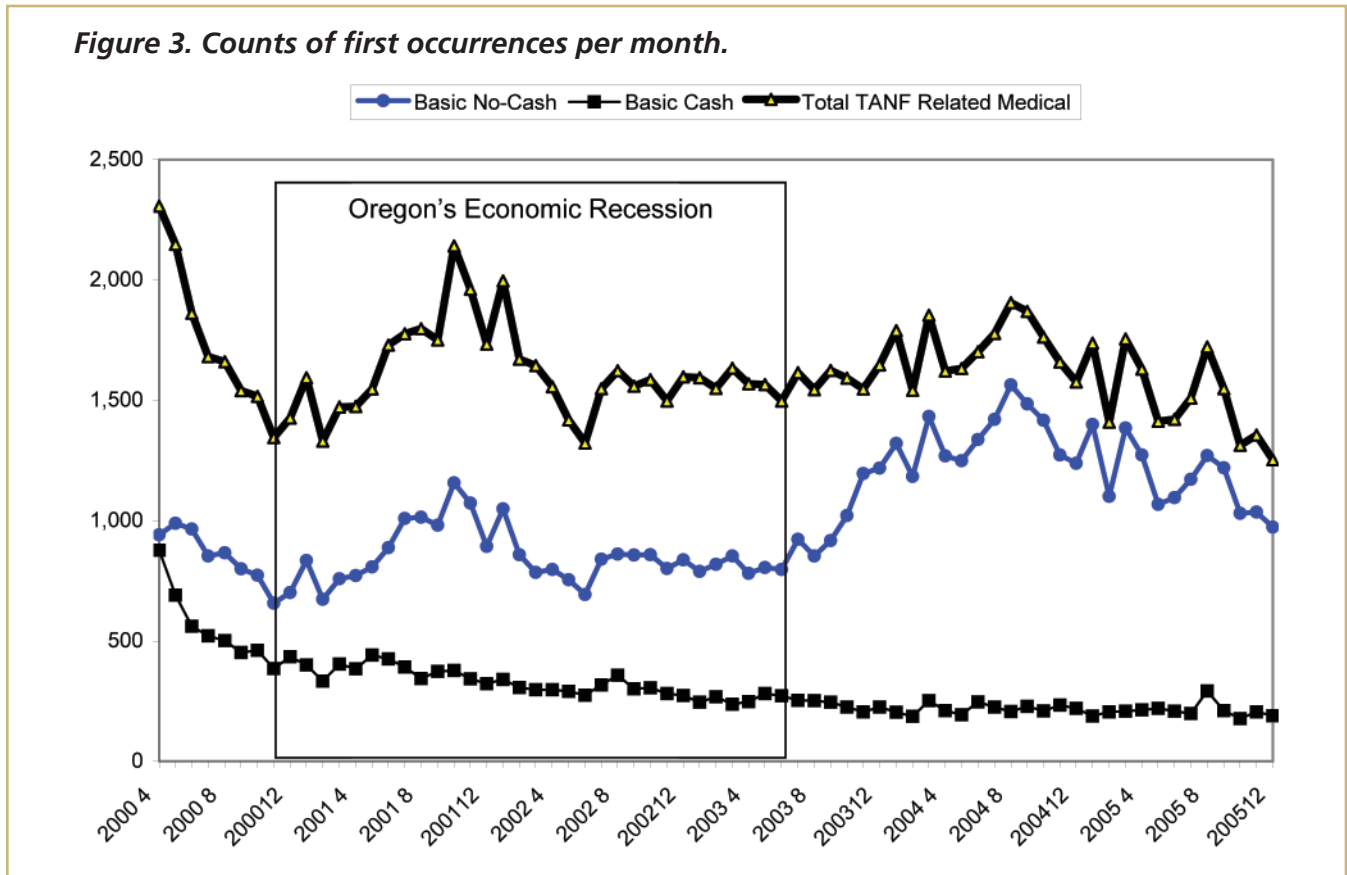
Conversely, the monthly numbers of total TANF Related Medical cash clients have slowly increased over the study interval. This number increased 27.4 percent during the recession, and only 7.4 percent over the interval from April 2000 through December 2005. Basic cash clients have increased 25.6 percent during the recession, and 4.3 percent over the interval from April 2000 through December 2005.

Figure 2. shows the total number of episodes per category by cohort-month; a client is counted only once in a combination for the initial month of that episode. These numbers represent individuals coming onto the caseload for a particular combination during the study interval. Clients can be counted more than once if they have two or more episodes in the same combination.



The monthly numbers of beginning TANF Related Medical no-cash clients have increased since mid-2000. This number increased 45.7 percent during the recession, and increased 52.5 percent over the interval from April 2000 through December 2005. The corresponding numbers for cash clients are 16.1 percent and 21.5 percent, respectively.

Figure 3. illustrates the numbers of brand new clients for the beginning month of their first initial episode and designation. In this case, clients are counted only once for the entire study interval.



Figures 2. and 3. illustrate similar trends, especially for Basic no-cash clients. The number of distinct individuals entering the caseload in this group peaked slightly during the recession, and then increased afterward. The average monthly count during the recession was 846; it was 1,212 for the remainder of the study interval.

Appendix VI: Movements between episodes

Movements between episodic categories

Please see *Appendix II* for an explanation of different types of movements.

Type One: Continuous episodes

Table 1. lists the total number of movements from the previous PERC code to the current PERC code for continuous episodes as well as unique occurrences per combination whereby clients are counted only once per group.

Table 1. Movements between episodes.

	Total movements per group				Unique occurrence per group			
	C to C	C to NC	NC to C	NC to NC	C to C	C to NC	NC to C	NC to NC
Other ¹	0	4	20,001	35,823	0	4	18,141	33,719
Initial 2	0	0	19,591	83,214	0	0	17,893	68,238
Initial 82	0	0	2,747	18,093	0	0	2,628	16,583
Initial XE	0	0	0	16,699	0	0	0	15,833
2 to 2	0	13,976	37,224	0	0	11,696	29,375	0
2 to 82	2,178	478	1,920	3,473	2,018	460	1,880	3,365
2 to XE	0	32,517	0	33,859	0	26,182	0	29,977
82 to 2	1,924	234	1,160	4,708	1,768	233	1,133	4,439
82 to 82	0	1,993	5,047	0	0	1,771	4,419	0
82 to XE	0	6,784	0	10,631	0	6,042	0	9,886
XE to 2	0	0	9,971	13,906	0	0	8,466	11,782
XE to 82	0	0	1,323	2,802	0	0	1,199	2,534
¹ There were 196,172 total initial episodes or movements from other PERC codes. Initial (very first designation) episodes assume a no-cash previous status.					¹ There were 173,039 total initial episodes or movements from other PERC codes. Initial episodes assume a no-cash previous status.			

The most numerous movement between PERC code/cash combination was from Basic no-cash to Basic cash status; this occurred for 37,224 episodes. Conversely, we observed only 13,976 movements from Basic cash to no-cash. There was little transition from Basic to UN. There was, however, significant transition from Basic to Extended in almost equal numbers from both cash and no-cash status.

We also noted movements between the TANF groups and other Medicaid programs, e.g., OHP Standard, as client incomes and eligibilities varied over the study interval. For the medical-only group, the majority of movements were from and to the OHP-Families group (64% and 60%, respectively). Most movements into the cash group came from Poverty Level Adults (52%) while cash clients moved to OHP-Families most often (36%). Many more clients moved into TANF Related Medical than moved out.

Appendix VII: Episode durations

As stated in *Appendix II*, we encountered “censored” episodes in the data set. To initially compare the Type One durations between cash categories, we used Kaplan-Meier Survival Analysis. The Kaplan-Meier procedure estimates time-to-event models using censored data, and is based on estimating conditional probabilities at each point of time when an event occurs and taking the product limit of those probabilities to estimate the survival rate at each point in time. We applied the (SPSS) Kaplan-Meier procedure to the entire data set, including the censored records, with the following results (*Table 1*).

Table 1. Means and medians for episode durations.

Cash?	Mean (days)				Median (days)			
	Estimate	Std. Error	95% Confidence interval		Estimate	Std. Error	95% Confidence interval	
			Lower Bound	Upper Bound			Lower Bound	Upper Bound
No	203	0.692	202	204	152	0.536	151	153
Yes	264	1.319	262	267	151	0.653	150	152
Overall	221	0.557	220	222	151	0.434	150	152

These results indicate that the average durations of episodes for cash (264 days) and no-cash clients (203 days) are dissimilar. Type One durations of cash clients were significantly longer than those of non-cash clients.

We then limited the analyses of episode durations to those that began and ended within the study interval (87 percent of Basic no-cash episodes), averaged episode durations for cohort months¹³ by PERC and cash status, and then compared these values using ANOVA. We looked at two data sets: (1) monthly averages for all 69 months of the study interval, and (2) the first 57 months of the study interval to minimize any artificial effects of shorter durations toward the end of this time. While both sets of durations were statistically different between cash categories, ANOVA’s assumption of equal group variances was valid only for the 57-month time series of Basic clients.

Table 2. lists the average duration of Type One episodes by PERC and cash status (over 60 and 72 months).

Table 2. Average durations in days of Type One episodes per Cash Status.

Cash status	Time series	PERC Code		
		Basic	UN	XE
Not a Cash Recipient	57 months	126.2	119.3	247.2
	69 months	117.2	109.1	223.5
Cash Recipient	57 months	216.2	117.3	---
	69 months	194.1	109.9	---

¹³Cohort month = monthly collection of all clients whose very first episode begins during that month.

Figure 1. shows the average durations of Basic cash vs. no-cash episodes for monthly cohorts.

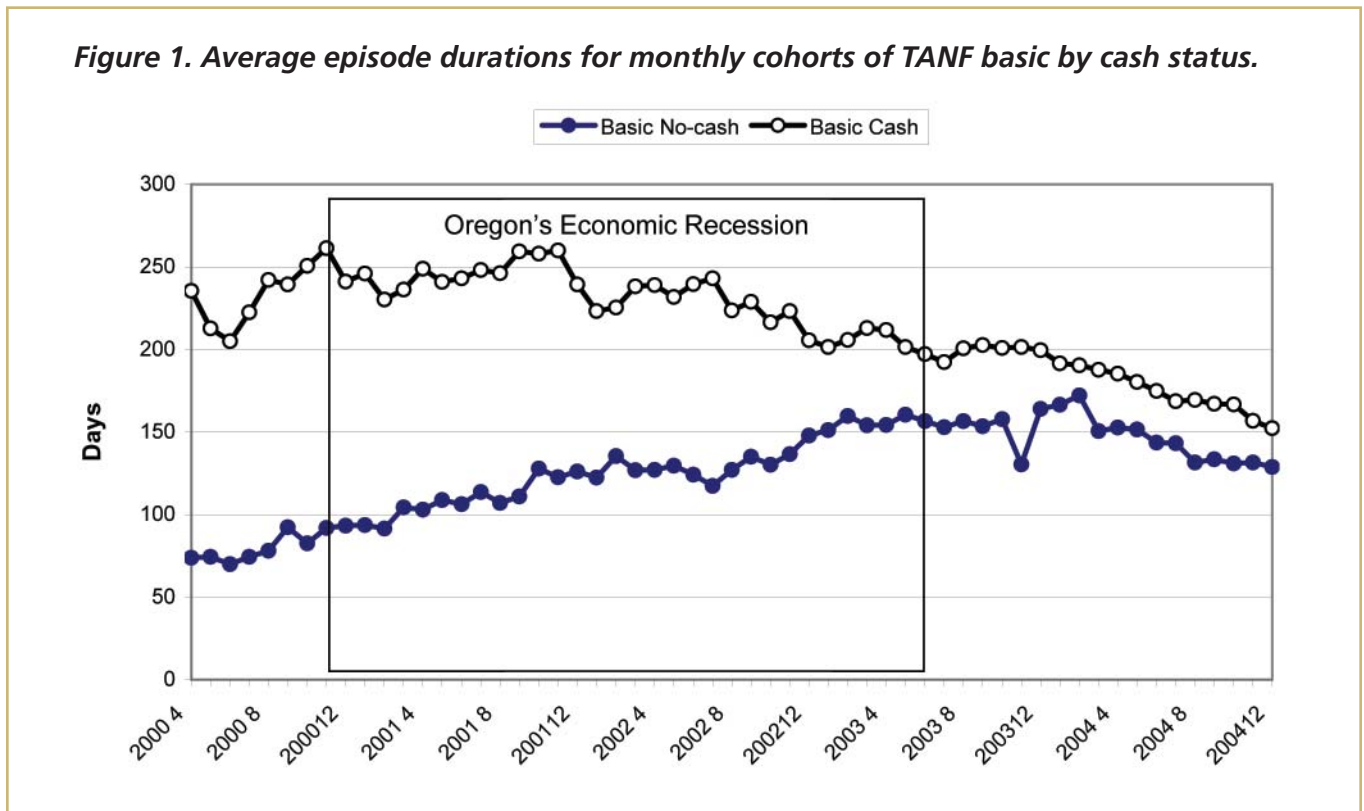


Table 2. and Figure 1. show that, overall, the Type One episode durations of Basic cash clients are longer than those of non-cash clients. Episodic durations of cash clients gradually decrease over the study interval, while those of non-cash clients increase until they differ by only 18 days in February 2004. Both series decrease after this date, however; durations of cash clients remain slightly longer than those of non-cash clients. We've limited these series to 57 months.

Appendix VIII: Reentries

Counts of clients who reentered per PERC and Cash-Status combination

We counted a total of 45,532 reentries over all possible combinations of PERC codes and cash-categories (45,532/137,620 = 0.33 reentries per adult client). *Table 1.* lists the total numbers of reentries per combination; individuals can be counted more than once.

Table 1. Reentries onto the caseload by category of TANF-Related Medical caseload¹

	C to C	C to NC	NC to C	NC to NC
2 to 2	2,679	6,149	1,650	10,118
2 to 82	97	488	90	497
2 to XE	na	561	na	441
82 to 2	74	286	171	1,412
82 to 82	142	241	106	1,030
82 to XE	na	64	na	182
XE to 2	na	na	2,592	12,775
XE to 82	na	na	236	1,734
XE to XE	na	na	na	1,423

¹There were 294 other reentry combinations. C = Cash, NC = No-cash.

The most numerous reentry was from Extended no-cash to Basic no-cash (12,775). The next most numerous was from Basic no-cash back to Basic no-cash (10,118).

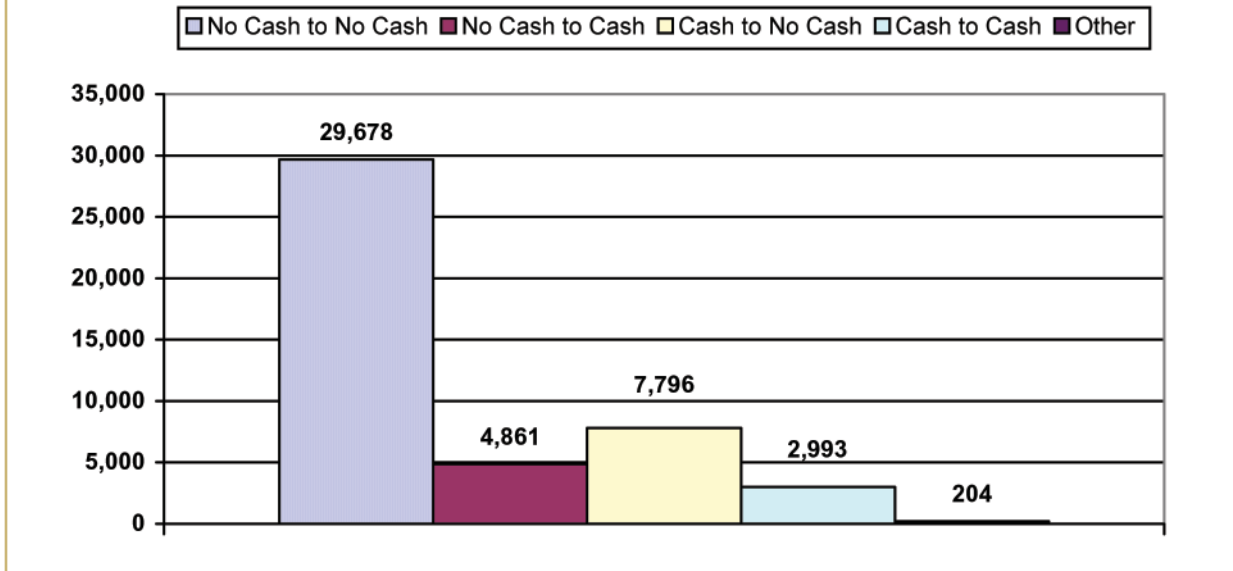
Table 2. lists the unique number of reentries per combination; clients are counted only once per combination but can be counted in more than one cell.

Table 2. Unique counts reentries onto the caseload by Category of TANF-Related Medical caseload.

	C to C	C to NC	NC to C	NC to NC	Total
2 to 2	2,507	5,824	1,635	9,102	19,068
2 to 82	96	487	90	494	1,167
2 to XE	na	558	na	440	998
82 to 2	73	285	171	1,408	1,937
82 to 82	134	232	106	985	1,457
82 to XE	na	64	na	181	245
XE to 2	na	na	2,542	12,126	14,668
XE to 82	na	na	236	1,703	1,939
XE to XE	na	na	na	1,389	1,389
Total	2,810	7,450	4,780	27,828	42,868

Figure 1. gives the total number of reentries by cash category over the study interval.

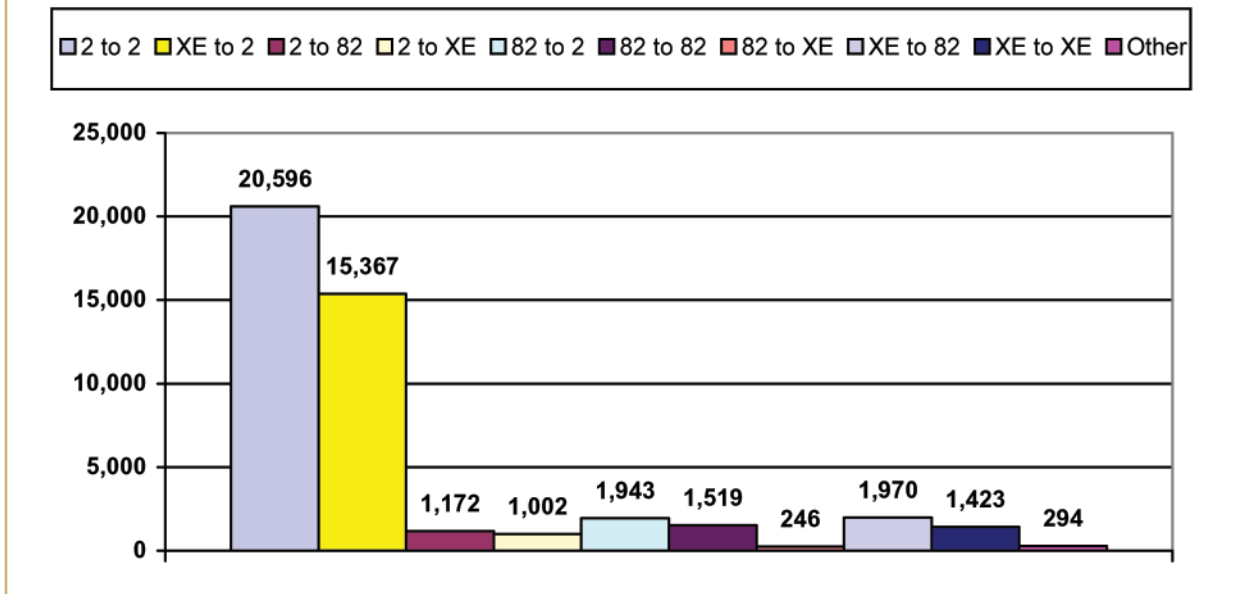
Figure 1. Total Number of Reentries by Exit-to-Reentry Cash Category.



As expected, the most common type of reentry pattern was exits from no-cash with reentry to no-cash (65.2%).

Figure 2. shows the total number of reentry combinations for the major PERC code combinations.

Figure 2. Total Number of Reentries by Exit-to-Reentry PERC Codes.



The most commonly-observed reentry pattern was exits from Basic with reentry back to Basic (45.2% of total); Extended to Basic (33.7%) was the second most common type.

Table 3. lists the frequencies of reentries by reentry-count per client, e.g., 27,068 clients reentered any caseload only one time. Basic, UN, and Extended are included. Clients are counted only once.

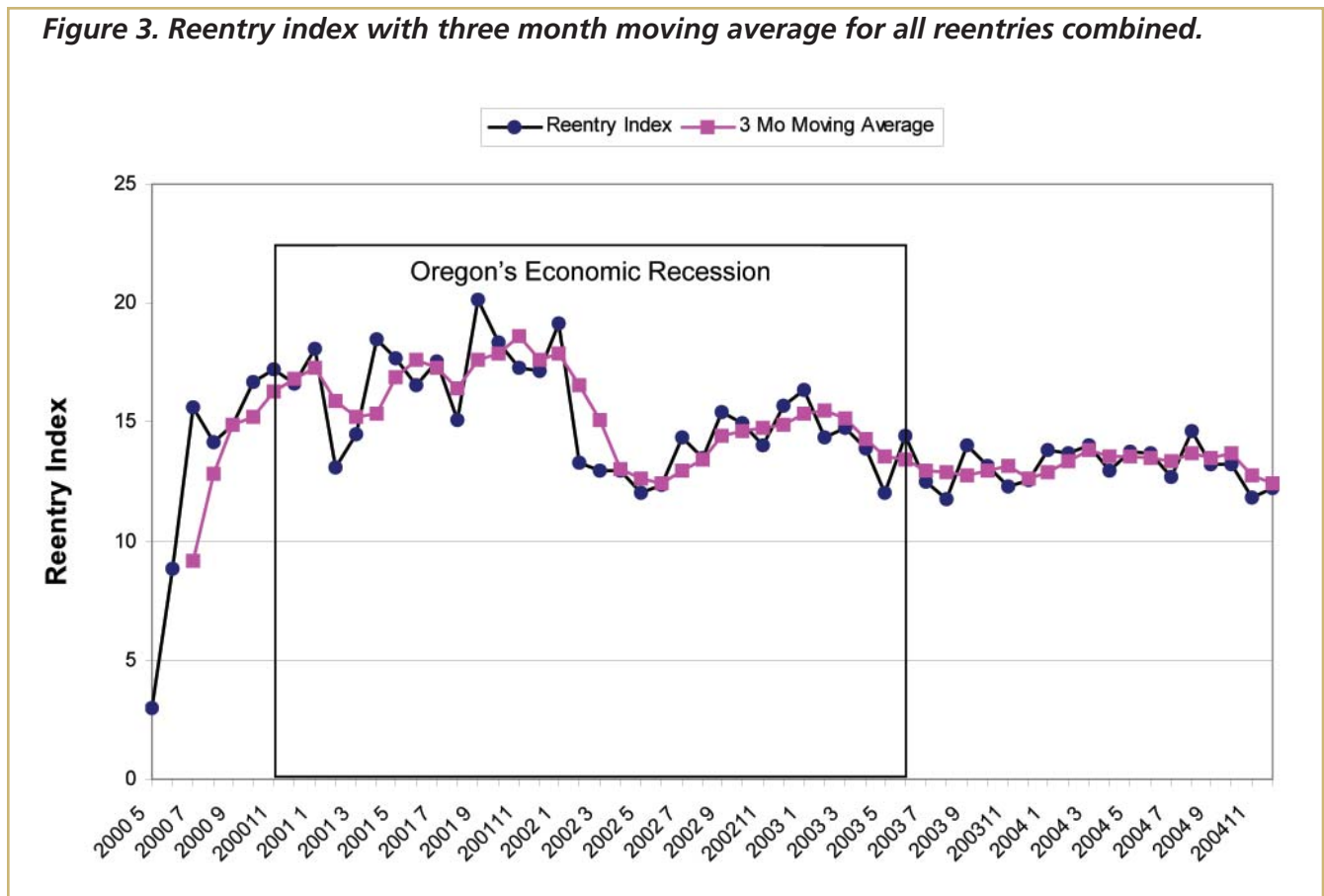
Table 3. Frequency of reentries onto the Caseload by Count Category.

Number of reentries	Frequency	Percent	Cumulative percent
1	27,068	76.0	76.0
2	7,036	19.8	95.8
3	1,327	3.7	99.5
4	158	.4	100.0
5	14	.0	100.0
6	2	.0	100.0
Total	35,605	100.0	

Basic no-cash clients comprised the majority of each of these counts except those for five and six reentries per client; Basic cash clients accounted for half of the clients counted in either of these two cells (seven and one, respectively).

Figure 3. illustrates the reentry index over the study interval for all reentries (see Appendix II for an explanation of the reentry indices).

Figure 3. Reentry index with three month moving average for all reentries combined.



Reentries per exit trended upward through the first half of the recession, but then decreased before increasing at a slower rate; the index stabilizes from mid-2003 through the end of 2004.

Figure 4. illustrates the reentry index for reentry PERC and cash combinations.

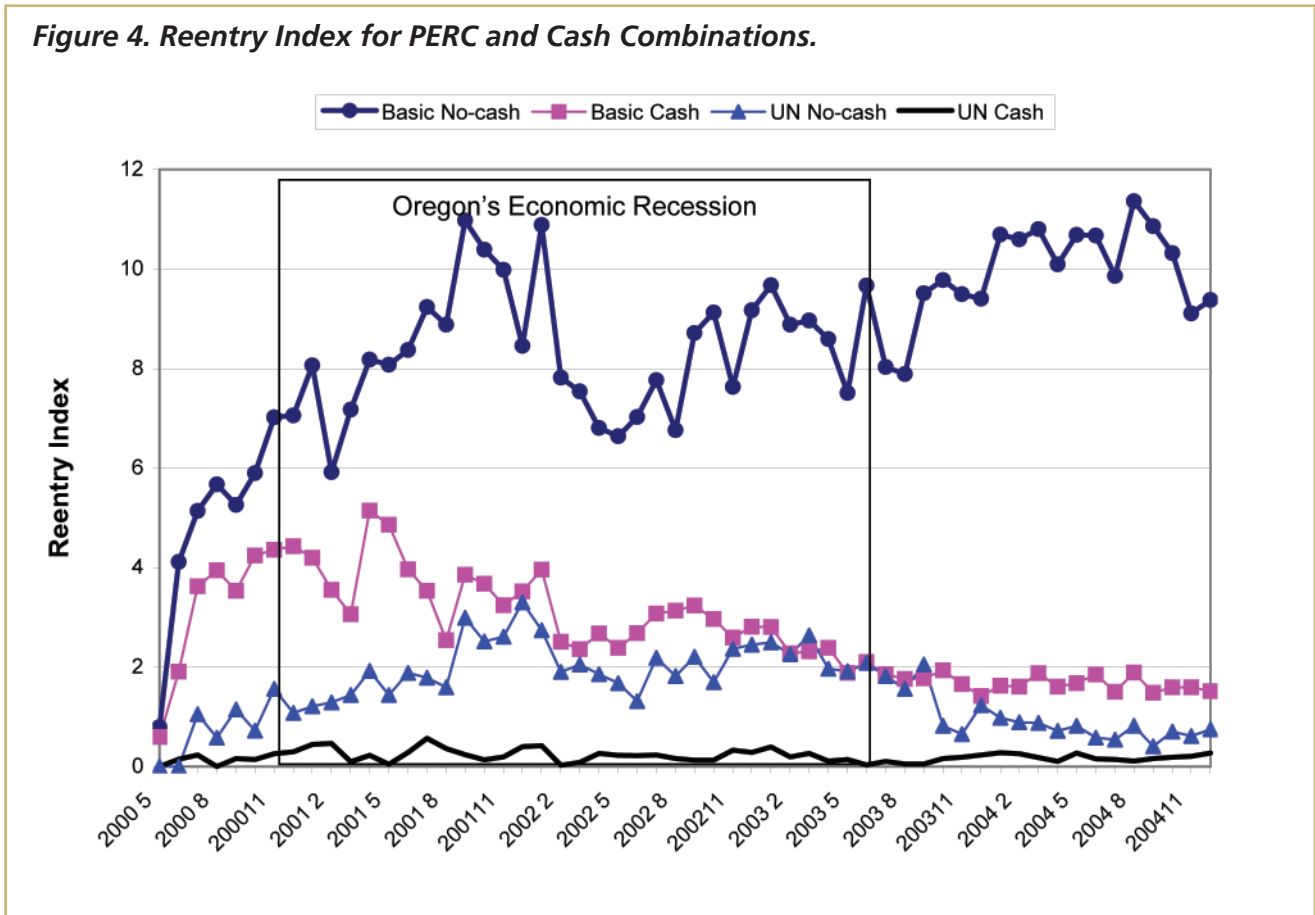


Figure 4. shows that more clients reentered the caseload as no-cash per the available pool than any other group. Reentries as Basic cash peaked in early 2001 and then steadily declined.

Figures 5. and 6. illustrate the MRI indexes (see Appendix II for an explanation of the reentry indexes).

Greater proportions of Basic non-cash clients reentered as the same type than those in the other two groups we compared, and did so at an increasing rate over the study interval.

Figure 5. Reentry index for PERC and cash combinations.

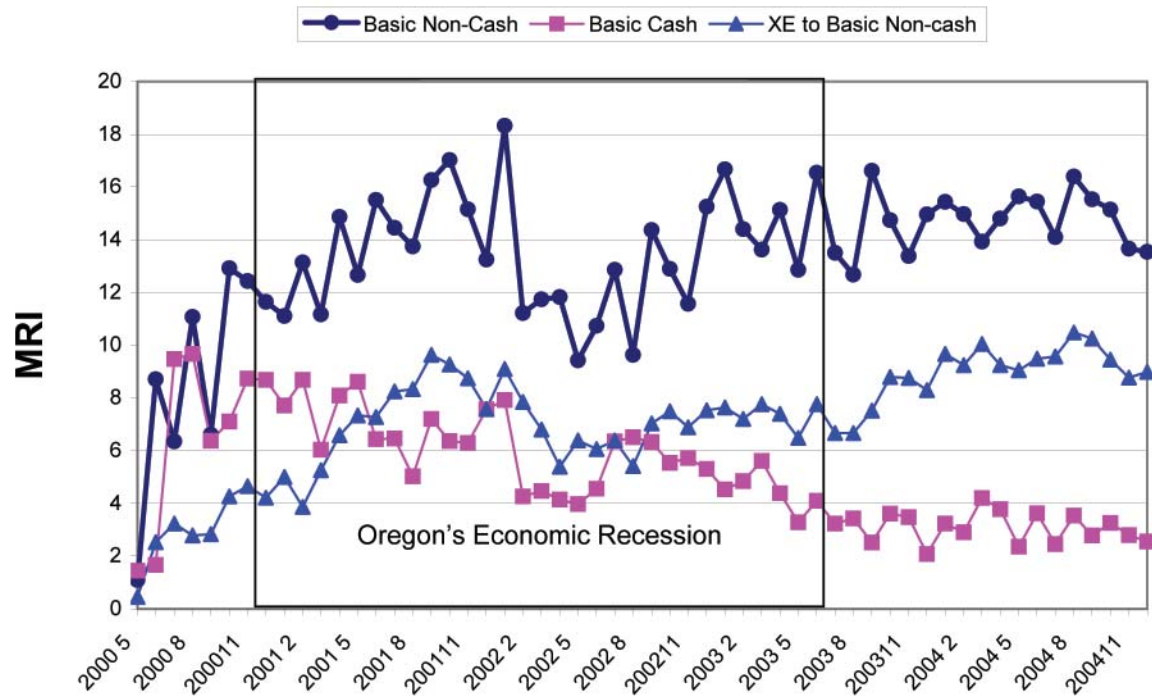
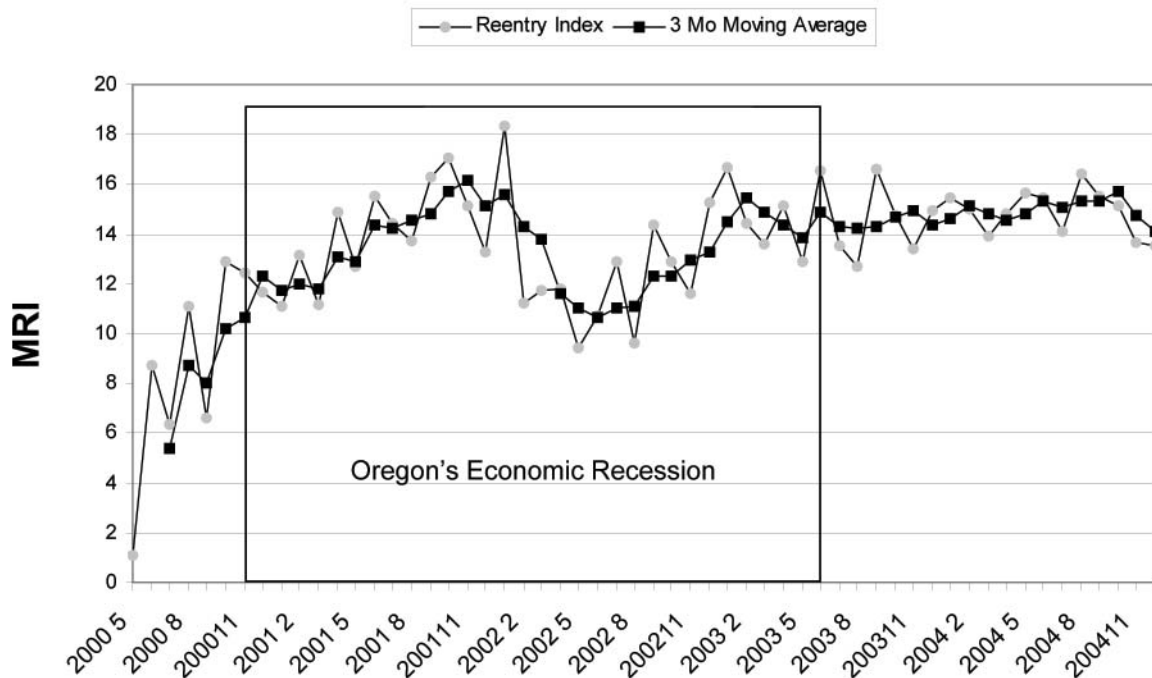


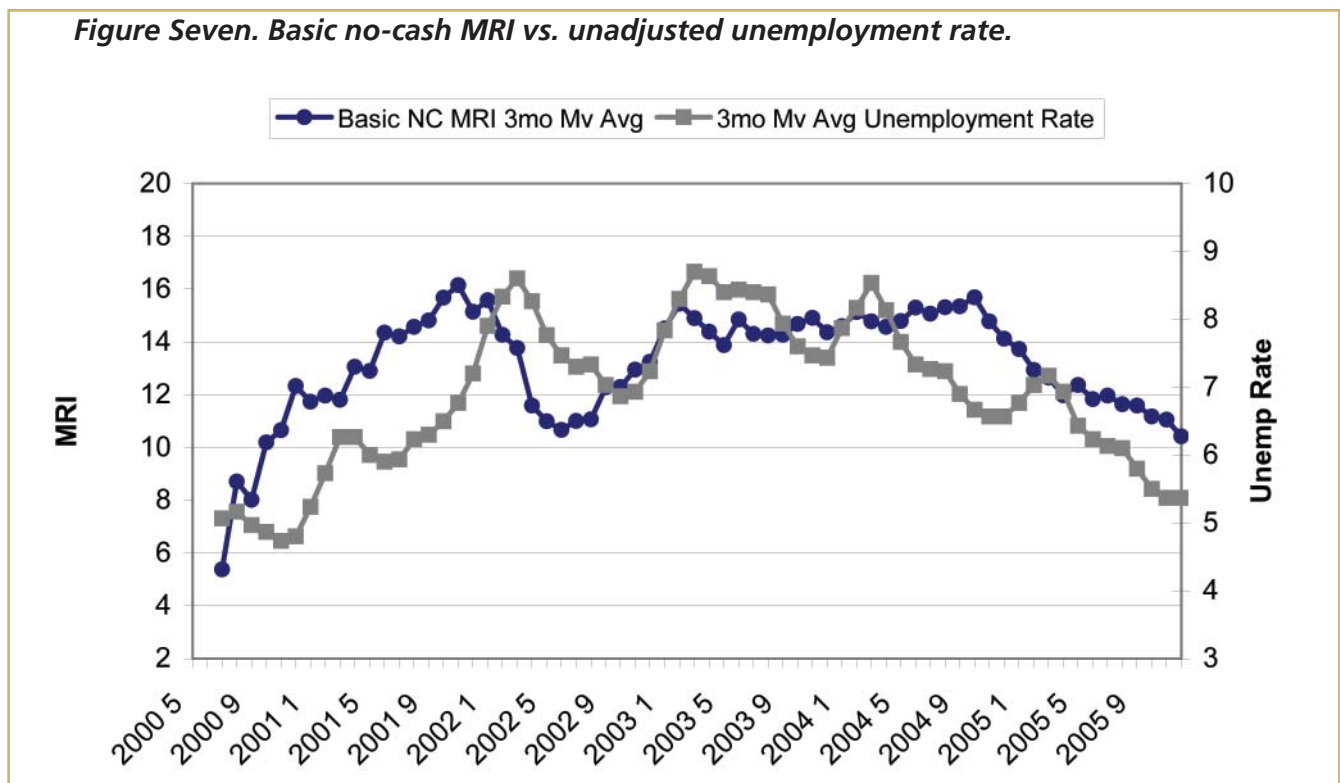
Figure Six. Modified reentry index with three month moving average for TANF basic no-cash.



Reentry and the economy

When examined graphically, both the numbers of reentries onto the caseload and the times-to-reentry seemed to vary over time. Since we focused the study on the time of Oregon's economic recession, we performed simple statistical analyses to quantify and test the relationships among various types of reentry and common economic indicators. Although statistical significance in observational studies like ours does not "prove" cause-and-effect, it does indicate a non-random association of the included variables.

Figure 7. illustrates the relationship between the MRI for Basic no-cash clients and Oregon's statewide unemployment rate (unadjusted) through December 2005 ($r = 0.660$, $p \leq 0.01$).¹⁴



The unemployment rate is a common indicator of economic well-being. In Figure 7., increasing rates indicate more workers without jobs during the recession. Likewise, we interpret the MRI as a quantification of our clients' response to these changes in the economy; more unemployed and underemployed clients would reenter when jobs were scarce. We would expect to see some degree of association between the variances of these two indicators over this time interval, as is evident in Figure Seven. Of interest is the "dip and recovery" in both series that starts around January 2002 and lasts for approximately 13 months.¹⁵ Economists characterize Oregon's economy during this time as a "double-dip" recession due to this short period of quasi-recovery that was followed by additional job loss. As the recession slowed during this time, these clients remained off the caseload. When the economy worsened for a second time, clients returned to the caseload.

¹⁴ For Basic no-cash monthly cohorts, both the median interspell duration and the number who first entered were significantly correlated with the per-capita number of jobs ($r = .697$ and $r = -.676$, $p \leq 0.01$, respectively).

¹⁵ The actual "dip" is a decrease in employment, and the "recovery" is the following increase. Figure Seven shows the unemployment rate which is essentially the opposite of employment. So "recovery" would be indicated by the unemployment rate going down.

Appendix IX: Time-to-reentry

Reentries over time per PERC and Cash-Status combination.

Table 1. lists the average times-to-reentry, or interspell durations, for clients exiting the caseload from the primary PERC-cash categories.

Table 1. Mean durations of total interspells by Exit PERC and Cash Category with 95% Confidence Interval.

Exiting from:	N	Mean (Days)	95% Confidence Interval for Mean	
			Lower bound	Upper bound
XE No Cash	18,760	488.7	483.0	494.5
82 No Cash	2,901	436.2	422.9	449.5
2 Cash	9,974	381.7	374.7	388.6
2 No Cash	12,796	357.9	352.2	363.6
82 Cash	807	343.5	321.0	366.0
Total	45,238	422.2	418.7	425.6

Clients exiting from Extended exhibited the longest mean interval before reentering the caseload. Clients exiting from Basic cash exhibited interspell durations that were longer than those for Basic no-cash; Basic no-cash times-to-reentry overlapped with those for UN cash.

Table 2. gives both the mean times-to-reentry and counts for the primary exit-reentry combinations.

Table 2. Mean interspell durations for the Primary Exit-Reentry Combinations.

		Exit PERC and Cash Category									
		2 No Cash		2 Cash		82 No Cash		82 Cash		XE	
		Mean	Count	Mean	Count	Mean	Count	Mean	Count	Mean	Count
Reentry PERC and Cash Category	2 No Cash	364.0	10,118	407.8	6,149	562.6	1,412	458.4	286	524.4	12,775
	2 Cash	353.5	1,650	336.2	2,679	419.5	171	367.2	74	457.5	2,592
	82 No Cash	333.6	497	442.3	488	309.3	1,030	294.5	241	422.7	1,734
	82 Cash	403.5	90	423.6	97	359.2	106	236.8	142	489.3	236
	XE	253.5	441	252.0	561	233.4	182	224.1	64	305.8	1,423
	Total	357.9	12,796	381.7	9,974	436.2	2,901	343.5	807	488.7	18,760

Clients leaving the caseload from UN no-cash and reentering into Basic no-cash exhibited the longest time-to-reentry (563 days); the shortest time was noted for UN cash to Extended (224 days over 64 reentries). Interspell durations from Basic no-cash to Basic no-cash and Basic cash were similar (364 vs. 354 days).

We used the median values and shortened the intervals for both time series by 12 months (through December 2004) to avoid oversampling shorter durations toward the end of the study interval. The overall trend indicates that the times-to-reentry from Basic gradually shortened over the study period.

Figure 1. shows the trend for median times-to-reentry for clients exiting from Basic per month of reentry. Figure 2. gives the Basic no-cash intervals as a three-month moving average.

Figure 1. Median interspell durations for TANF Basic combinations.

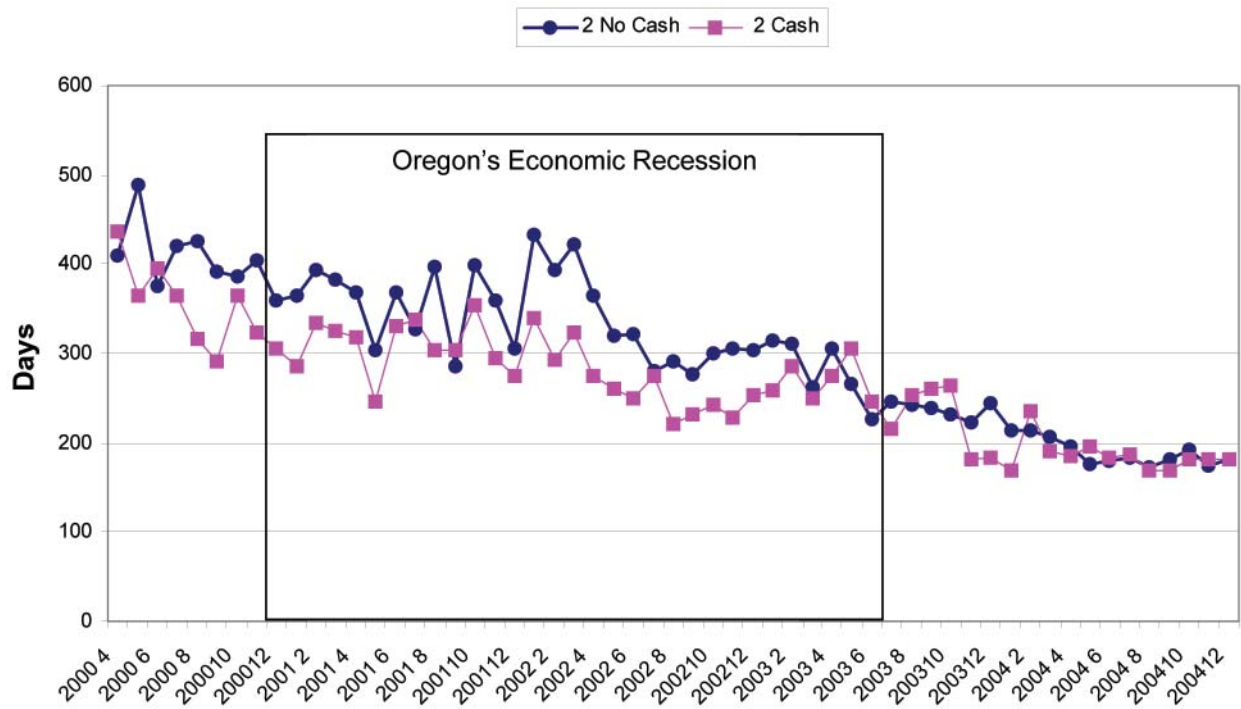
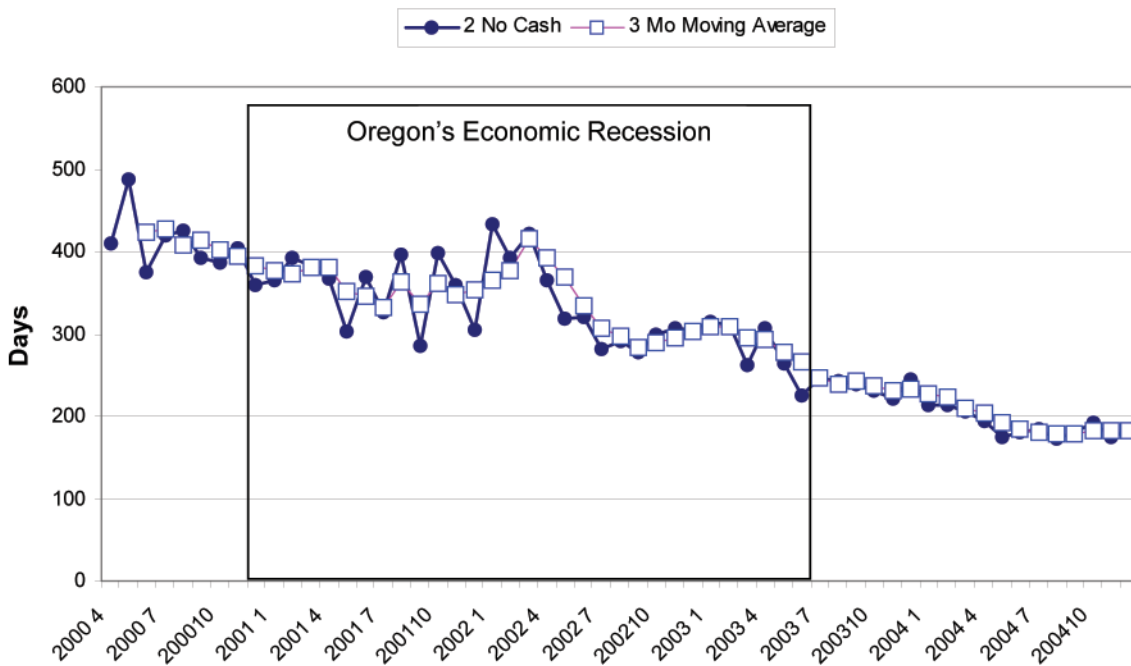


Figure 2. Median interspell durations for TANF Basic No Cash.



Appendix X: Wages and work

We identified 113,077 individuals with wages and work during the study interval (81.4% of the total number of clients in the data set); the average quarterly wage was \$2,667 with 265 hours of work (51% of a 40 hour week) over all clients regardless of group membership.

We then calculated the average quarterly wage, with hours worked, for individuals occurring in one or more of the three primary combinations of PERC and cash-status (*Table 1.*). Due to the dynamic nature of the data, individuals can be counted more than once, but wages and hours worked were prorated among groups within a quarter.

Table 1. Average quarterly wages and hours worked by group, episodes only.

	Basic No-cash	Basic Cash	Extended
Wages	\$1,657	\$1,323	\$2,699
Work (hrs)	176	153	288

Differences among the groups for wages and work were statistically significant. Extended clients earned and worked the most. No-cash Basic clients earned and worked more than cash clients.

We also calculated these data for all earnings and work for all quarters with wages (*Table 2.*). We made group assignments for non-episode data based on the initial group designation (for pre-episode wages and hours) or the last designation of the spell for post episode data.

Table 2. Average quarterly wages and hours worked by group, all quarters with wages.

	Basic No-cash	Basic Cash	Extended
Wages	\$3,167	\$2,372	\$3,539
Work (hrs)	293	243	347

Only TANF Extended clients earned more than the average minimum wage per quarter (\$3,527) over this time.

We also calculated average wages and work by group relative to episodes. Tables Three, Four, and Five give this information for pre-, during- and post episodes.

Table 3. Average quarterly wages and hours worked by beginning group: pre-first episode.

	Basic No-cash	Basic Cash	Extended
Wages	\$3,291	\$2,667	\$2,580
Work (hrs)	301	273	262
Hourly rate	\$10.93	\$9.77	\$9.85

Table 4. Average quarterly wages and hours worked by group: within-episode.

	Basic No-cash	Basic Cash	Extended
Wages	\$1,189	\$875	\$2,453
Work (hrs)	125	103	262
Hourly rate	\$9.51	\$8.50	\$9.36

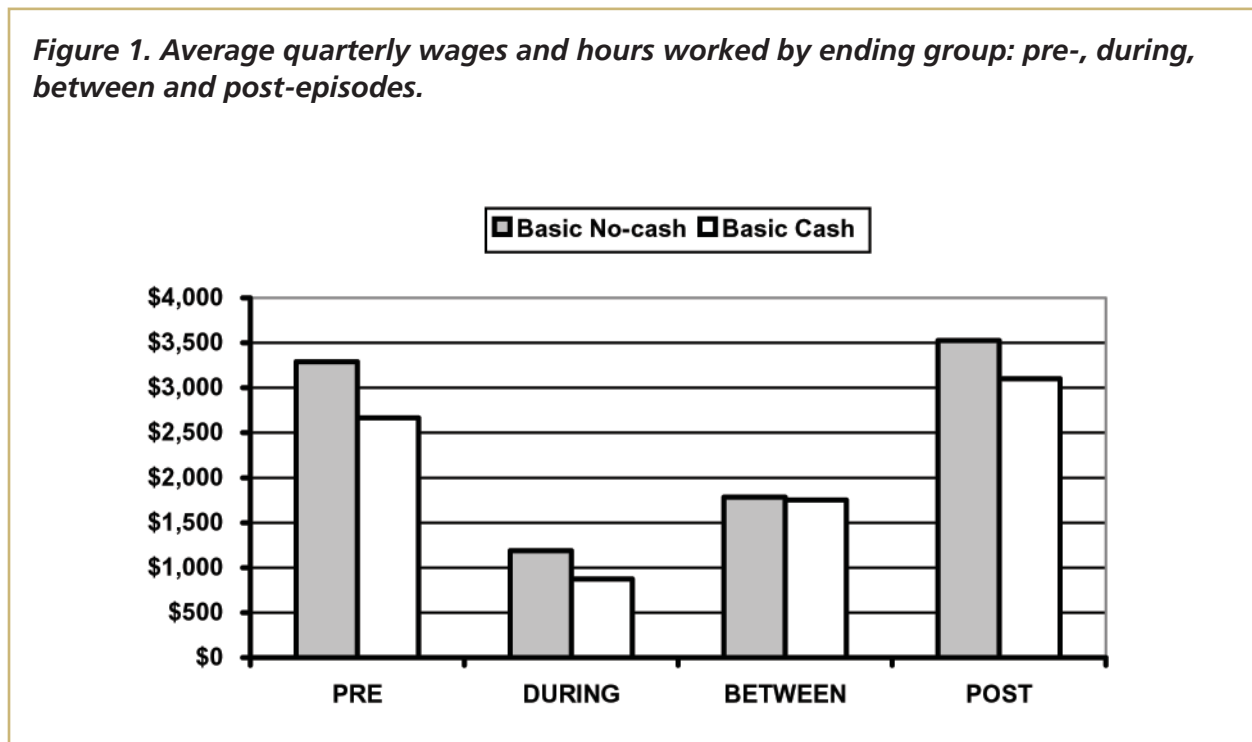
Table 5. Average quarterly wages and hours worked by ending group: post-last episode.

	Basic No-cash	Basic Cash	Extended
Wages	\$3,526	\$3,100	\$4,177
Work (hrs)	317	296	373
Hourly rate	\$11.12	\$10.47	\$11.20

Clients in the three groups exhibited a similar pattern: wages and work generally dropped after entering the caseload, and then increased to maximal levels after exiting the caseload. Basic cash clients experienced the greatest loss of wages and work (-67% and -62%, respectively) after joining the program; they also showed the largest drop in their hourly rate of pay (from \$9.77/hr to \$8.50/hr, or -13%). Cash clients had the greatest increases in wages, hourly pay, and work after leaving the caseload (254%, 23% and 187%, respectively).

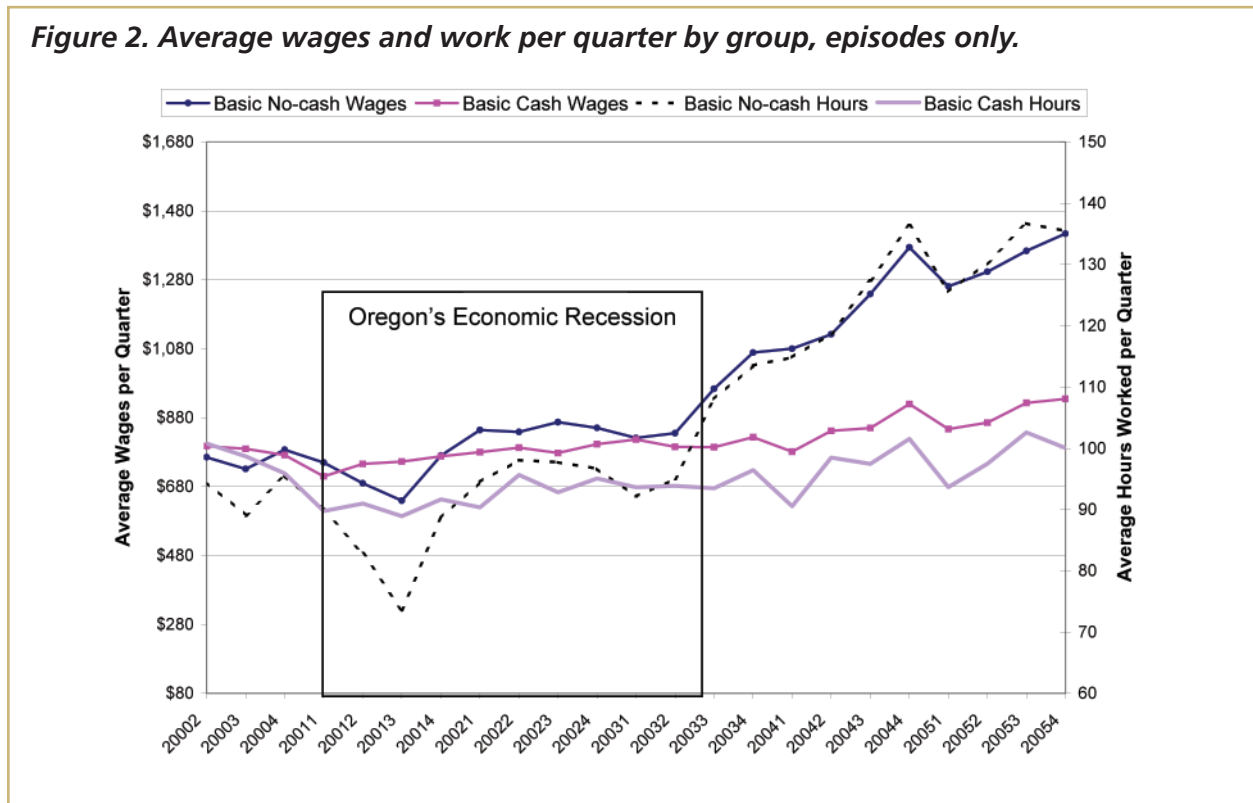
Figure 1. illustrates these wage data.

Figure 1. Average quarterly wages and hours worked by ending group: pre-, during, between and post-episodes.



Clearly, all clients earned and worked less while on the caseload. One possible explanation would be that the income requirements for eligibility may have affected client choices regarding the amount of work they performed; lower wages with Medicaid benefits might be better than slightly higher wages and no medical benefits. The notion that clients receiving public assistance have to experience significant wage gains to replace their benefits after exiting is a commonly researched phenomenon. Another explanation is that clients first experienced wage and work declines and then needed these services and benefits for a period of time.

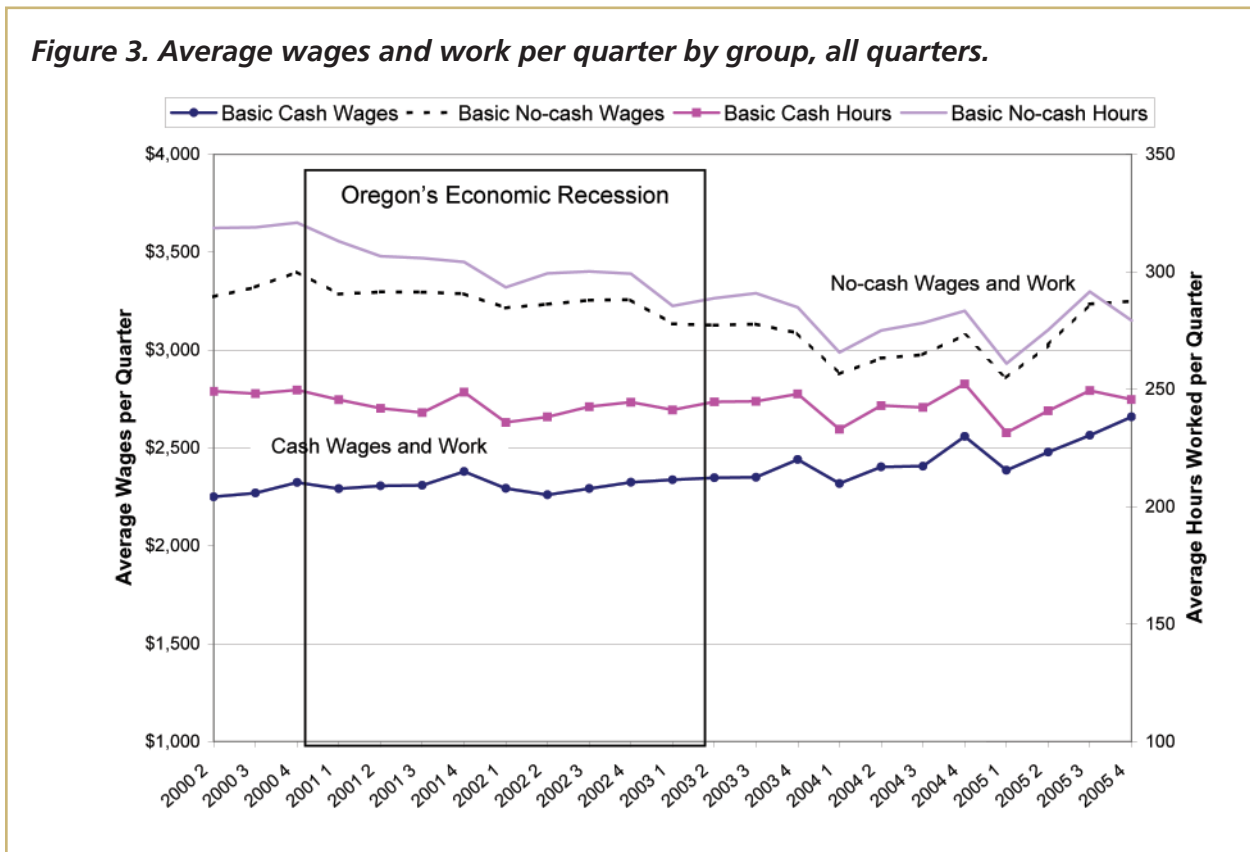
Figure 2. illustrates earnings and hours worked per quarter for the two primary groups over the study interval. These are wages earned during their episodes.



Both wages and hours for Basic cash clients during episodes trended slightly upward over the study interval. Basic no-cash income and hours increased during the second half of this interval, after the recession. By the end of 2005, no-cash wages were 51.3 percent greater than those of cash clients, having grown 81.8 percent since 2000 (compared with 17.2 percent for cash clients).

Figure 3. illustrates quarterly wages and hours worked by group during all quarters, not just during caseload episodes.

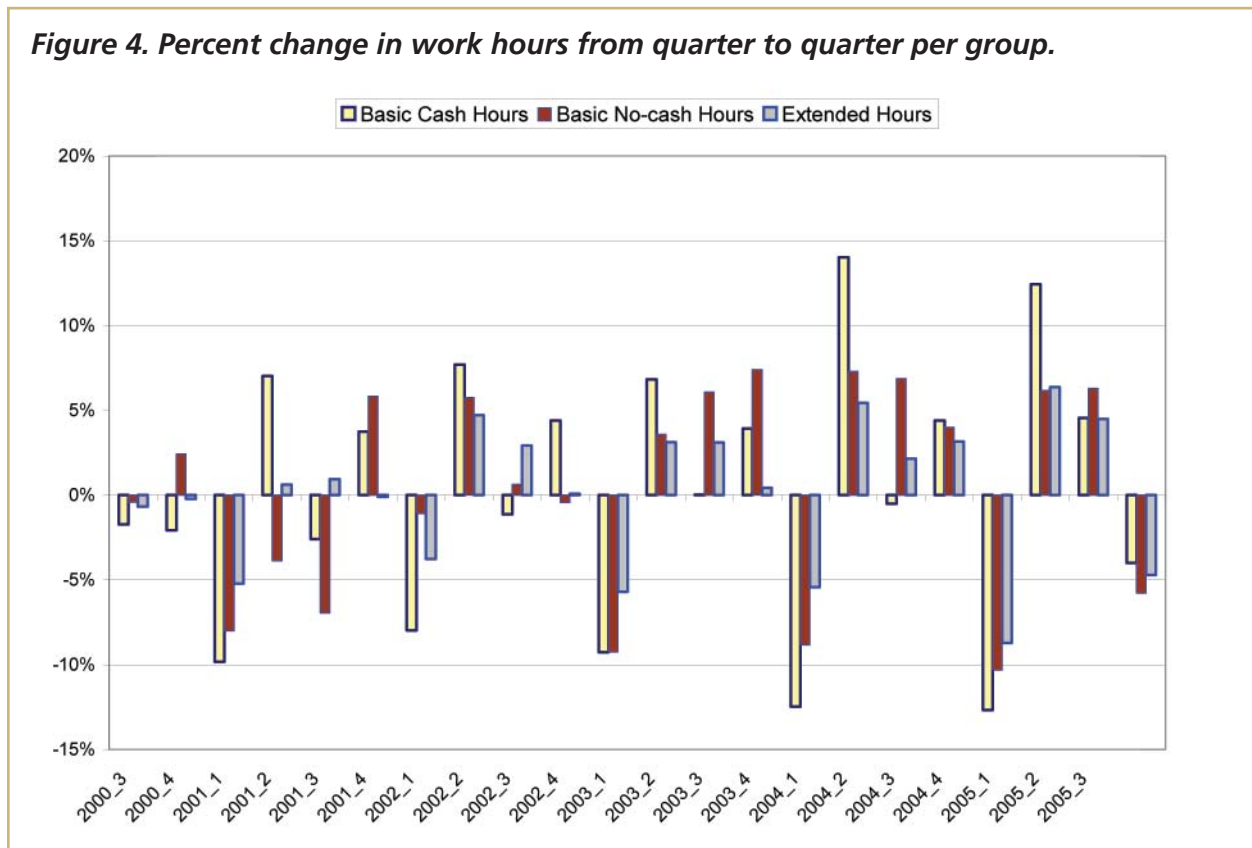
Figure 3. Average wages and work per quarter by group, all quarters.



The increasing trend in wages and work for Basic no-cash clients while on the caseload (*Figure 2.*) is not evident when considering all work and wages (*Figure 3.*). Indeed, both wages and work for this group decrease over time. It may be that the dampening effect of program participation on wages (*Figure 1.*) has an increasing impact as no-cash caseload durations and reentries increase over time.

Also, the relative magnitudes of wages and work for both groups are greater when considering all periods of earning (*Figure 3.*). This finding is consistent with the information in *Figure 1.* — both sets of clients earn the least when they are actually receiving benefits.

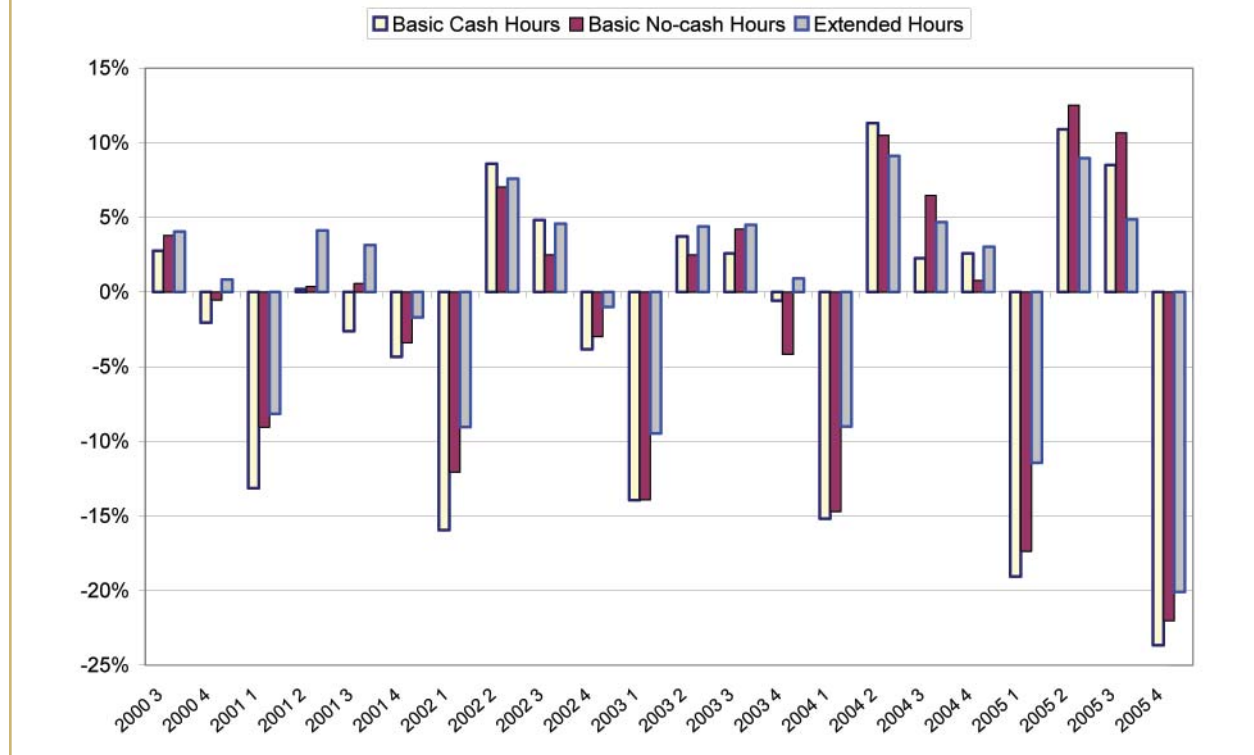
Figure 4. shows the quarter-to-quarter percent change in total per-capita hours worked per group while receiving services and benefits.



Overall, *Figure 4.* reveals strong seasonality in employment. We see a significant loss of hours worked from the fourth quarter to the first quarter of every year during the study interval for all three groups. Cash clients exhibit the greatest fluctuation during a year. These results are no doubt related to the fact that the most common types of jobs (*Tables 1. and 2., Appendix X*) have a significant seasonal component.

We also calculated the percent-change from one quarter to the next over all quarters of wages and work, not just for those quarters when clients were on the caseload (*Figure 5.*). Again, the repeating negative change from the fourth quarter to the first quarter indicates a strong seasonal component in the work histories of these clients.

Figure 5. Percent change in work hours from quarter to quarter per group, on and off the caseload.



We also calculated the relative proportion of “full time” work (520 hours per quarter) per client per group per quarter (*Figure 6.*). We found that clients of all groups, on average, worked part time during all quarters of the study interval. The overall average for all groups was 34.8 percent of full time. The averages for each of the three groups were statistically distinct for the study interval as a whole as well as for quarter-to-quarter. *Figure 6.* shows that extended clients worked the most of the three groups (\bar{X} = 35.1 percent). The two Basic groups exhibited similar levels per quarter through mid-2003, but the no-cash clients then increased their relative work hours throughout the latter half of the study interval. Overall, the clients in all three groups worked less than half time per quarter.

Figure 7. shows these data for Administrative and Support Services jobs, the most numerous for cash and no-cash clients (*Tables 1. and 2., Appendix X*). The patterns are similar; however, all groups worked fewer hours in these specific jobs relative to all jobs combined (*Figure 6.*).

Figure 6. Work hours as a percentage of full time per quarter per group.

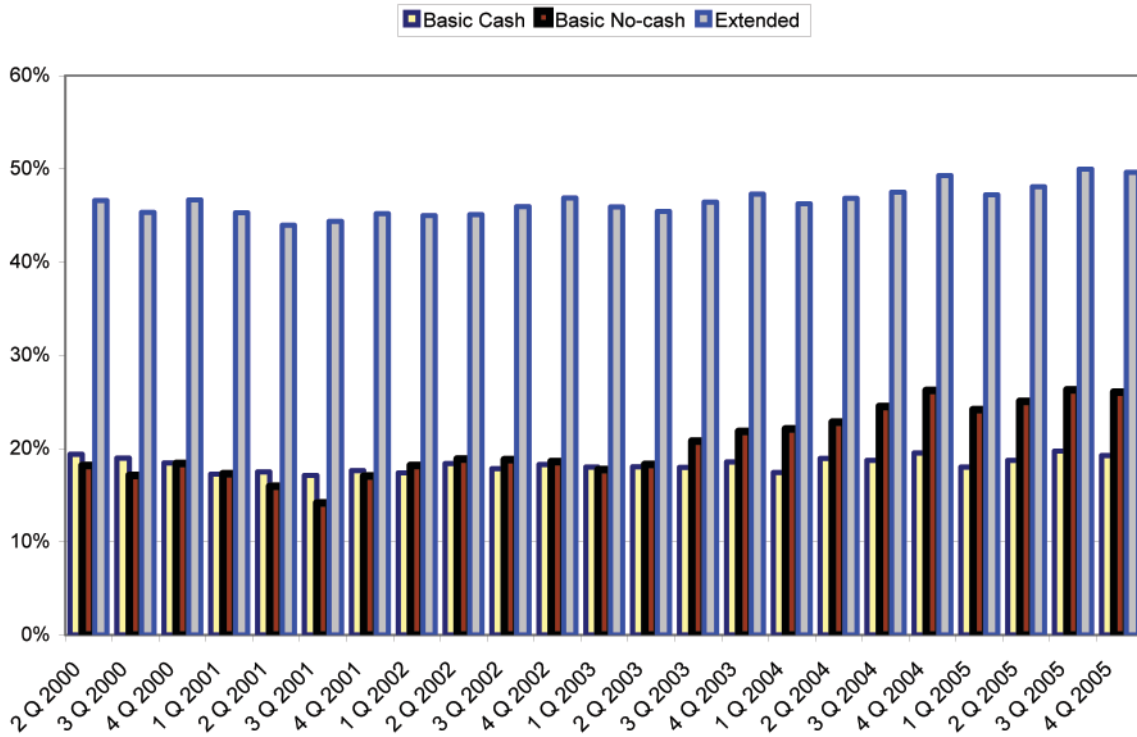
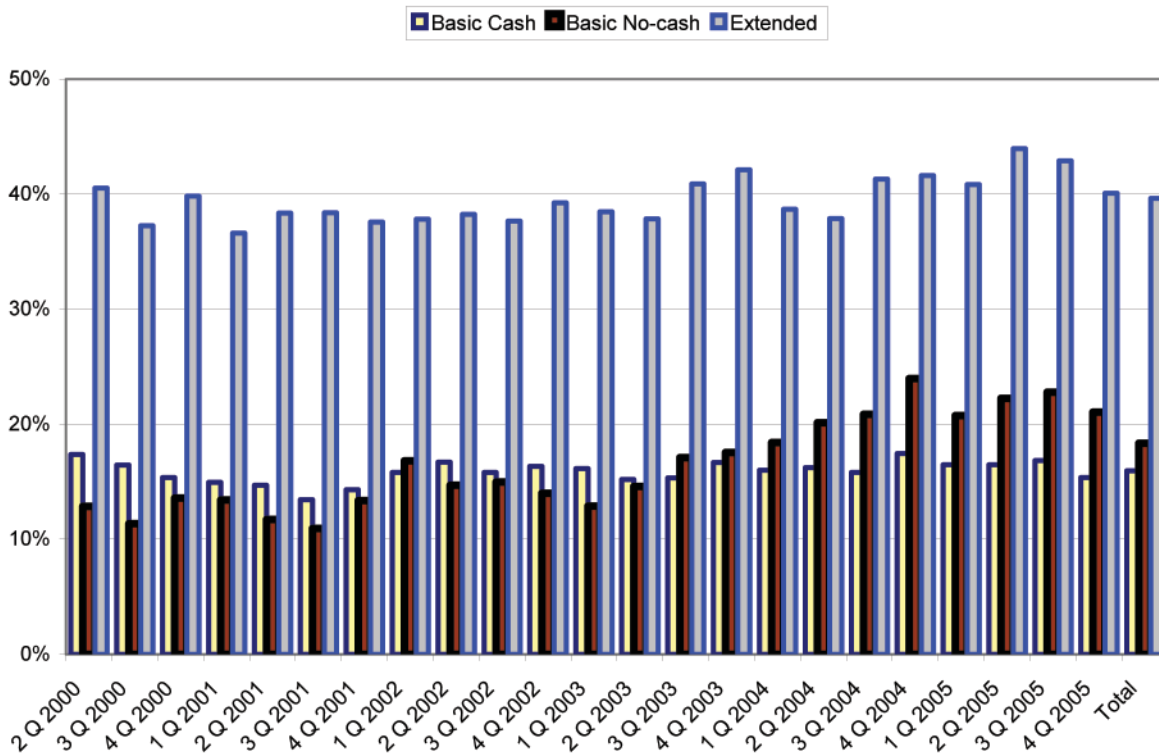
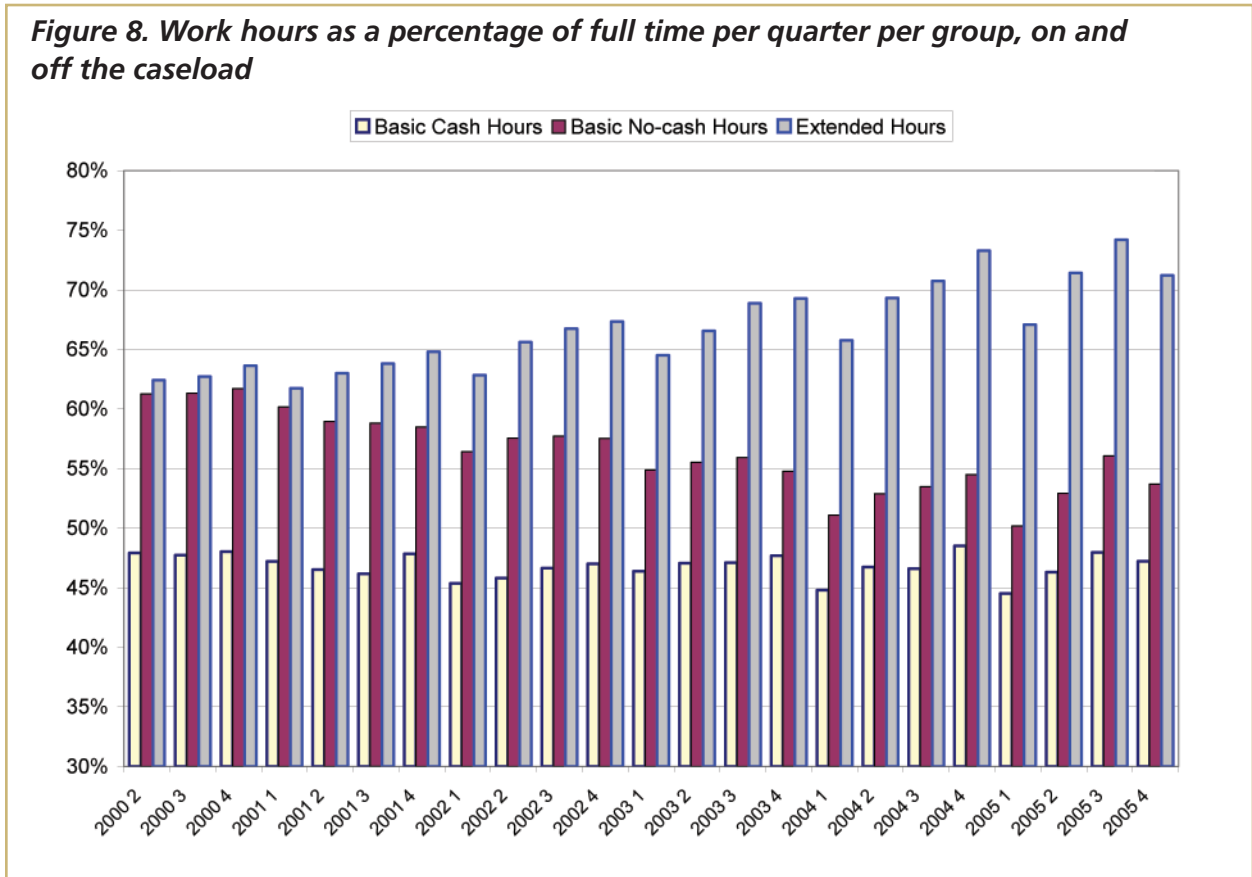


Figure 7. Admin/support services jobs: work hours as a percentage of full time per quarter per group.



We also calculated the relative proportion of “full time” work per client per group over all quarters of reported wages and hours (Figure 8.) We found that clients of all groups, on average, still worked part time during all quarters of the study interval. The overall average for all groups was 56.7 percent of full time. Again, the averages for each of the three groups were statistically distinct for the study interval as a whole as well as for quarter-to-quarter. Extended clients worked the most of the three groups (X = 66.8 percent of full time). Basic no-cash and Extended clients exhibited similar rates at the beginning of the study interval, but diverged over time as the proportions of full-time work decreased for no-cash clients. The two Basic groups exhibited dissimilar levels per quarter. Over all quarters, Basic no-cash clients worked more than half-time; cash clients always worked less than half-time.

Figure 8. Work hours as a percentage of full time per quarter per group, on and off the caseload



Appendix XI: Types of employment

Table 1. gives the 10 most common job types held by Basic cash clients during their episodes and the associated 2003 annual average wage over all Oregon workers. We recorded 97 job types for Basic cash clients. Job types were counted only once per client per quarter.

Table 1. Total quarterly unique occurrences of the ten most common jobs: Basic Cash Clients

Job type	Statewide 2003 average annual wage	Total quarterly unique occurrences	
		Number	Percent
Administrative and support services ¹	\$22,663	10,527	25.9%
Food services and drinking places ²	\$12,877	8,553	21.1%
Nursing and residential care facilities ³	\$19,109	4,948	12.2%
Social assistance	\$19,095	3,442	8.5%
General merchandise stores	\$20,833	2,879	7.1%
Accommodation	\$16,239	2,712	6.7%
Food and beverage stores	\$20,124	2,535	6.2%
Administration of human resource programs	N/A	2,005	4.9%
Educational services	N/A	1,594	3.9%
Professional, scientific, and technical services	N/A	1,378	3.4%

¹Industries in the administrative and support services group support the day-to-day operations of other organizations. The processes employed in this sector (e.g., general management, personnel administration, clerical activities, cleaning activities) are often integral parts of the activities of establishments found in all sectors of the economy. These establishments have specialized in one or more of these activities and can, therefore, provide services to clients in a variety of industries and, in some cases, to households. Temporary "help" agencies are included in this group.

²Industries in the food services and drinking places subsector prepare meals, snacks and beverages to customer order for immediate on-premises and off-premises consumption.

³Industries in the nursing and residential care facilities subsector provide residential care combined with either nursing, supervisory or other types of care as required by the residents.

Table 2. gives the 10 most common job types held by Basic no-cash clients during the study interval. We noted 97 job types for these clients.

Table 2. Total quarterly unique occurrences of the ten most common jobs: Basic No-cash Clients

Job type	Statewide 2003 average annual wage	Total quarterly unique occurrences	
		Number	Percent
Administrative and support services ¹	\$22,663	13,128	25.9%
Food services and drinking places ²	\$12,877	11,472	22.6%
Nursing and residential care facilities ³	\$19,109	5,261	10.4%
Social assistance	\$19,095	4,191	8.3%
Accommodation	\$16,239	3,402	6.7%
General merchandise stores	\$20,833	3,353	6.6%
Food and beverage stores	\$20,124	3,205	6.3%
Educational services	N/A	2,885	5.7%
Gasoline stations	\$14,497	2,000	3.9%
Specialty trade contractors	\$36,466	1,853	3.7%

These lists are very similar, in both ranked content and relative proportions per job, for the four most-common jobs. The most numerous job for either group was in Administrative and Support Services. The two lists do differ, however, in the presence of two unique job types per group: "Administration of human resource programs" and "professional, scientific and technical services" were noted for the cash clients, while "gasoline stations" and "specialty trade contractors" jobs were listed for no-cash clients. The first group of employers was probably entities that provided job-related training and services for the cash recipients.

We duplicated this count over all quarters of work and wages; the results were very similar. The top two industries changed places for both groups, while gasoline stations and clothing and clothing accessories stores were numbers nine and ten, respectively, for cash clients. Ambulatory health care services was number ten for no-cash clients.

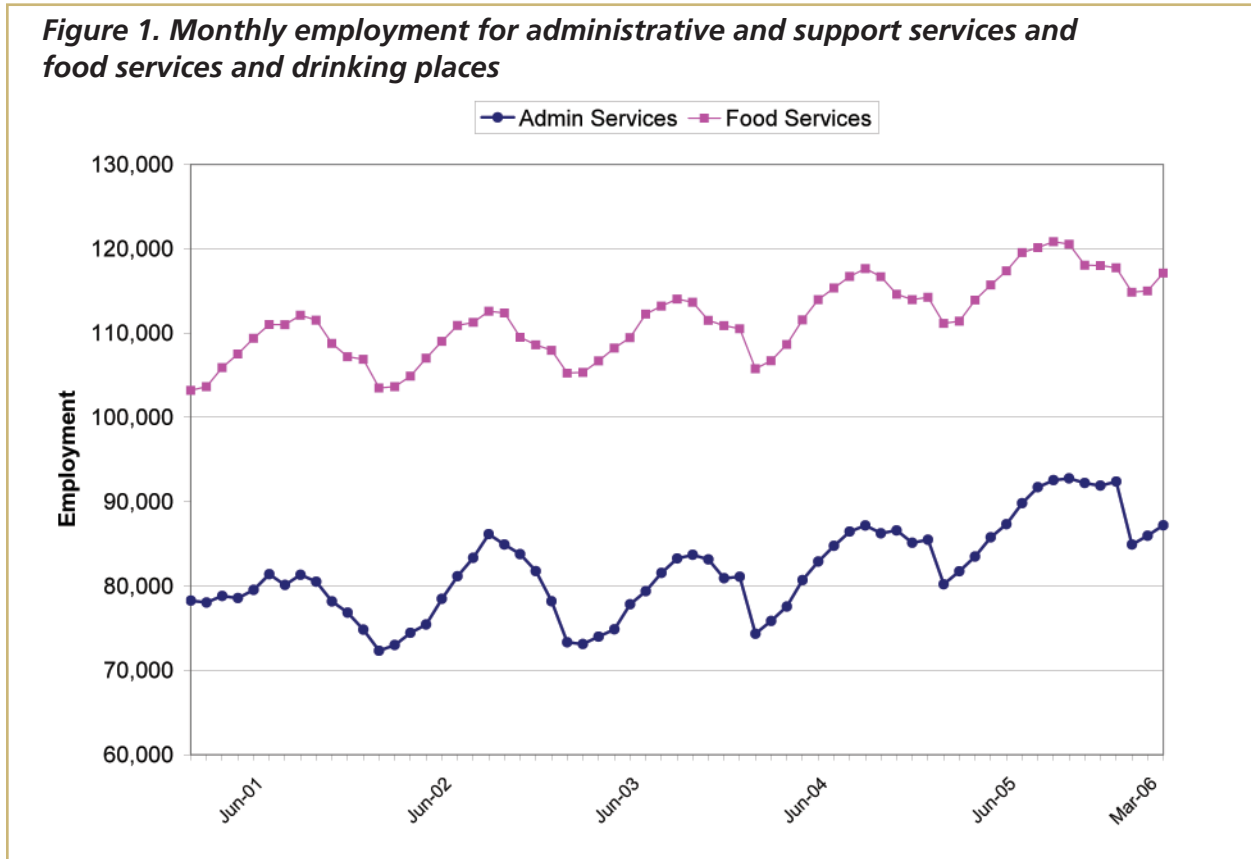
Following is detailed information regarding the two dominant job types, administrative and support services and food services and drinking places.

Table 3. Industry detail, 2005 annual data, total statewide

NAICS	Industry	Units	Employmt	Payroll	Avg Pay
561	Administrative and support services	5,456	88,490	\$2,054,806,765	\$23,221
56132	Temporary help services	663	36,518	\$757,556,304	\$20,745
56142	Telephone call centers	119	10,644	\$241,303,070	\$22,670
56172	Janitorial services	877	9,429	\$146,485,479	\$15,536
56173	Landscaping services	1,317	8,270	\$203,556,300	\$24,614
56161	Security and armored car services	224	4,453	\$92,262,826	\$20,719
56133	Professional employer organizations	135	4,368	\$123,993,978	\$28,387
56199	All other support services	378	3,692	\$116,739,926	\$31,620
56151	Travel agencies	234	1,527	\$46,859,397	\$30,687
56143	Business service centers	195	1,260	\$33,316,932	\$26,442
56111	Office administrative services	203	1,174	\$65,128,580	\$55,476
56144	Collection agencies	89	1,123	\$37,082,821	\$33,021
56162	Security systems services	140	1,101	\$42,514,273	\$38,614
56179	Other services to buildings and dwellings	147	652	\$18,226,318	\$27,954
56174	Carpet and upholstery cleaning services	174	642	\$14,404,527	\$22,437
56131	Employment placement agencies	56	523	\$18,260,720	\$34,915
56171	Exterminating and pest control services	89	511	\$16,261,221	\$31,822
56121	Facilities support services	30	477	\$13,810,574	\$28,953
56149	Other business support services	69	472	\$12,007,933	\$25,441
56192	Convention and trade show organizers	91	465	\$16,562,869	\$35,619
56141	Document preparation services	114	433	\$11,477,766	\$26,508
56152	Tour operators	35	269	\$8,303,935	\$30,870
56159	Other travel arrangement services	41	237	\$9,182,726	\$38,746
56145	Credit bureaus	29	176	\$7,277,117	\$41,347
56191	Packaging and labeling services	9	73	\$2,231,173	\$30,564
722	Food services and drinking places	7,835	117,034	\$1,598,916,100	\$13,662
72211	Full-service restaurants	3,260	56,926	\$854,189,814	\$15,005
72221	Limited-service eating places	3,555	49,145	\$581,594,283	\$11,834
72241	Drinking places, alcoholic beverages	694	5,526	\$75,539,888	\$13,670
72231	Food service contractors	185	4,281	\$72,582,768	\$16,955
72232	Caterers	118	1,047	\$13,834,923	\$13,214
72233	Mobile food services	23	110	\$1,174,424	\$10,677

For all workers, the most common sub-industry in administrative and support services is temporary help services with 41.3 percent of the total employment. Most probably, many Basic clients were employed in this sector. Full-service restaurants comprised the largest portion (48.6%) of the food services and dining places industry.

Figure 1. illustrates the statewide monthly employment for these two industries.



The seasonal nature of these industries is evident in Figure 1. Administrative and support services exhibited greater degrees of fluctuation than did Food Services and Dining Places, however. The average percent difference between the minimum and maximum monthly numbers within a year was 15.1 percent for the former, and 9.1 percent for the latter.

Appendix XII: Regression analyses

Methods

Data. The following table summarizes the independent variables that we used to represent exogenous factors that influenced the caseload.

Table 1. Exogenous factors and associated variables

Factor	Variable	Acronym	Source
Oregon's economy	Employment Index (Per capita Jobs)	<i>EmpIndx</i>	Oregon Office of Economic Analysis; Oregon Employment Department
	Unemployment Rate	<i>UnempRt</i>	Oregon Employment Department
	Total Non-farm Employment	<i>TotNFEmp</i>	Oregon Employment Department
	Initial UI Claims	<i>InUIClms</i>	Oregon Employment Department
	University of Oregon Index of Leading Indicators	<i>UofO</i>	University of Oregon
	Categorical Variable for the Duration of the Recession	<i>Recession</i>	n/a
Demographics	Total Female-headed Households with Children <18 Years In Poverty	<i>FHHPOv</i>	American Community Survey, U.S. Census Bureau
	Total Female-headed Households with Children <18 Years	<i>FHHAll</i>	American Community Survey, U.S. Census Bureau
	Percent of All Female-headed Households with Children <18 Years In Poverty	<i>FHHPOvIndx</i>	n/a
Health insurance coverage	Total Uninsured 18 – 64 years in Poverty	<i>UninsPov18</i>	Oregon Population Survey; Current Population Survey – Bureau of Labor Statistics
	Total Uninsured	<i>UninsAll</i>	Current Population Survey – Bureau of Labor Statistics
	Employers Offering Health Insurance per Low-wage Industry	<i>EmpIns</i>	Medical Expenditure Panel Survey, Oregon Employment Department
Medicaid program events	Categorical Variable for the Duration of the Modified Eligibility Determination Process	<i>CPU</i>	n/a
	Categorical Variable for the Duration of the OHP Standard Program	<i>Standard</i>	n/a

Data issues. We obtained most of the demographic and insurance data from national and state surveys that published annual figures. The economic data were published monthly or quarterly. We required a monthly time series for our analyses, and had to prorate the annual and quarterly change in numbers across the 12 months of a year or the three months of a quarter, respectively. We included female-headed households because this is a dominant characteristic of public-assistance clients.

Analyses. As previously stated, we wanted to determine the relative contribution of the exogenous factors in *Table 1.* to the observed month-to-month changes in the TANF Related Medical caseload. Because we determined that the disproportionate increase in caseload was due to large numbers of medical-only clients, we focused the analysis on this group.

A common methodology used by researchers for these types of studies is multiple regression. A multiple regression model is an equation that determines the value of a dependent variable as a function of two or more independent variables. Multiple regression can establish that a set of independent variables explains a proportion of the variance in this dependent variable at a significant level (through a significance test of R²). Categorical, or binary, variables

(those with values of 0 or 1 to indicate absence or presence of a characteristic or event) can also be included in the analyses. Multiple regression can also establish the relative predictive importance of the independent variables by comparing their beta weights¹⁷.

We began the analysis by calculating Pearson correlation coefficients among all of the exogenous and caseload variables¹⁸. More highly-correlated variables were then included in multiple regression procedures using SPSS. We did include at least one variable from each area regardless of the significance of the correlation, however.

Results

Correlation analyses. Table 2. lists the initial correlations among the economic and caseload variables (n = 69).

Table 2. Correlation Coefficients (r) and P Values among caseload and economic variables.

	Medical-only cohort	Cash Cohort	EmplIdx	UnempRt	TotNFEmp	InUIClms	UofO	Recession
EmplIdx	-.676(**)	-.409(**)	1	-.837(**)	.434(**)	-.175	.230	.174
	.000	.000		.000	.000	.149	.057	.154
UnempRt	.290(*)	.257(*)	-.837(**)	1	-.731(**)	.478(**)	-.626(**)	.256(*)
	.016	.033	.000		.000	.000	.000	.034
TotNFEmp	.267(*)	.226	.434(**)	-.731(**)	1	-.493(**)	.749(**)	-.406(**)
	.026	.062	.000	.000		.000	.000	.001
InUIClms	-.215	.157	-.175	.478(**)	-.493(**)	1	-.567(**)	.569(**)
	.076	.197	.149	.000	.000		.000	.000
UofO	.365(**)	.061	.230	-.626(**)	.749(**)	-.567(**)	1	-.739(**)
	.002	.618	.057	.000	.000	.000		.000
Recession	-.583(**)	-.115	.174	.256(*)	-.406(**)	.569(**)	-.739(**)	1
	.000	.345	.154	.034	.001	.000	.000	

**** Correlation is significant at the 0.01 level (2-tailed).**

*** Correlation is significant at the 0.05 level (2-tailed).**

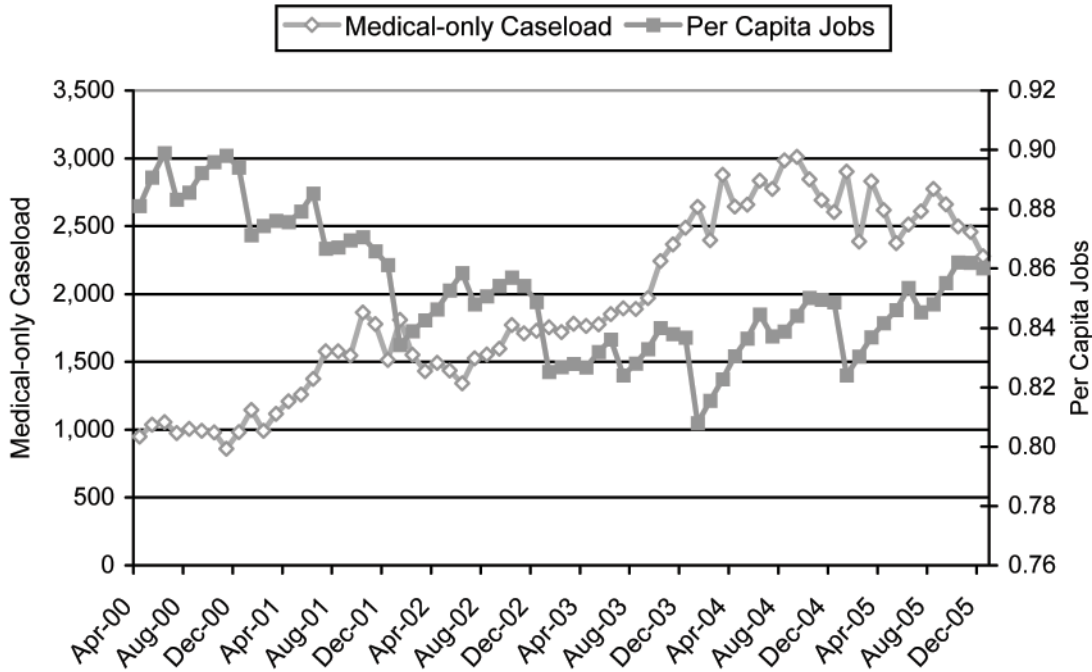
The medical-only-cohort caseload exhibited relatively large, negative correlations with per capita employment and the categorical variable representing the period of the recession. That is, the medical-only caseload increased as per capita jobs decreased. This is especially evident through 2003. In 2004, the numbers of new clients per month leveled off, but per capita jobs increased. In 2005, the caseload has a downward trend while jobs continue to increase. Figure 1. illustrates this relationship over time.

¹⁷ The beta weights are the regression (b) coefficients for standardized data. Beta weights are the average amounts the dependents increase when the independents increase one standard deviation and other independent variables are held constant. If an independent variable has a beta weight of 0.5, this means that when other independents are held constant, the dependent variable will increase by half a standard deviation (0.5 also). The ratio of the beta weights is the ratio of the estimated unique predictive importance of the independents. That is, the beta weights help assess the unique importance of the independent variables.

Beta weights reflect the unique contribution of each independent variable. Joint contributions contribute to R-square but are not attributed to any particular independent variable. The result is that the betas may underestimate the importance of a variable that makes strong joint contributions to explaining the dependent variable but which does not make a strong unique contribution. Thus when reporting relative betas, one must also report the correlation of the independent variable with the dependent variable as well, to acknowledge if it has a strong correlation with the dependent variable. Standardized means that for each datum the mean is subtracted and the result divided by the standard deviation. The result is that all variables have a mean of 0 and a standard deviation of 1. This enables comparison of variables of differing magnitudes and dispersions. Only standardized b-coefficients (beta weights) can be compared to judge relative predictive power of independent variables.

¹⁸ The primary caseload variables were the monthly cohort counts of medical-only and cash clients explained in the Part One report. These are monthly counts of the first occurrence of a client per episode type. We believe that this variable better measures change in response to exogenous influences.

Figure 1. Medical-only caseload and per capita jobs, 2000 – 2005.



Monthly numbers of new cash clients were somewhat correlated with per capita jobs, but remained much more level than the medical-only cohorts.

Table 3. lists the initial correlations among the demographic and caseload variables (n = 69).

Table 3. Correlation coefficients (r) and P values among caseload and demographic variables.

	Medical-only cohort	Cash cohort	FHPov	FHHAI	FHPovIndx
FHPov	.574(**)	.563(**)	1	-.664(**)	.966(**)
	.000	.000		.000	.000
FHHAI	-.818(**)	-.729(**)	-.664(**)	1	-.833(**)
	.000	.000	.000		.000
FHPovIndx	.706(**)	.662(**)	.966(**)	-.833(**)	1
	.000	.000	.000	.000	

**** Correlation is significant at the 0.01 level (2-tailed).**

All three indicators of the number of female-headed households were correlated with both caseloads and each other. This is to be expected because each of the three independent variables is numerically related to one another. The strong negative correlation between the total number of female-headed households and both caseload variables is interesting. Overall, this number decreases from a maximal value in December 2000 through 2005. The percentage of this group that lives in poverty, however, has increased over the study interval and is strongly correlated with both caseloads.

Table 4. lists the initial correlations among the health-insurance-coverage and caseload variables (n = 69).

Table 4. Correlation coefficients (r) and P values among caseload and insurance variables.

	Medical-only cohort	Cash cohort	UninsPov18	UninsAll
UninsPov18	.942(**)	.543(**)	1	.937(**)
	.000	.000		.000
UninsAll	.911(**)	.450(**)	.937(**)	1
	.000	.000	.000	
Emplns	-.177	.264(*)	-.235	-.302(*)
	.189	.047	.078	.022

*Correlation is significant at the 0.05 level (2-tailed).

**Correlation is significant at the 0.01 level (2-tailed).

Both variables representing the medically-uninsured are highly correlated with the medical-only cohorts and each other. Figure 2. illustrates this relationship over time. The number of employers in low-wage industries was not correlated with either caseload.

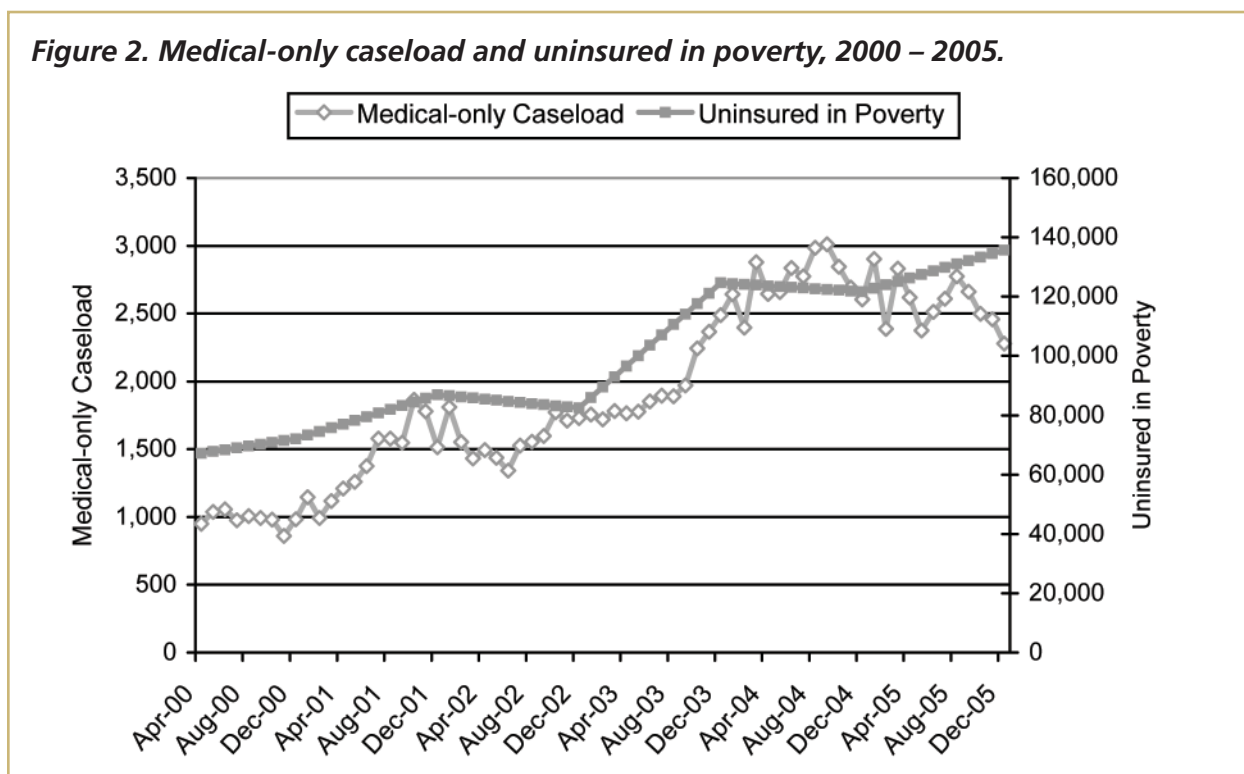


Table 5. lists the initial correlations among the program and caseload variables (n = 69).

Table 5. Correlation coefficients (r) and P values among caseload and program variables.

	Medical-only cohort	Cash cohort	CPU	Standard
CPU	.159	.181	1	.569(**)
	.193	.137		.000
Standard	.315(**)	-.049	.569(**)	1
	.008	.691	.000	

**Correlation is significant at the 0.01 level (2-tailed).

The revised process for eligibility determination at the Central Processing Unit exhibited little relationship with either caseload. The availability of the Standard program, however, had a significant but relatively-small association with the monthly numbers of new medical-only clients.

Multiple regression analyses. As discussed above, we wanted to determine the quantitative, relative contributions of the primary exogenous variables to the medical-only caseload. Based on the degrees of correlation with the caseload variable, we selected UninsPov18, FHHPovIndx, UninsAll, Emplndx, and Standard to represent the factors (*Table 1.*). We then ran several iterations of analytics using the SPSS Linear Regression package. These included the Enter, Forward, and Backward alternatives. The primary results follow:

We first used the stepwise Forward procedure to prioritize these independent variables: UninsPov18, FHHPovIndx, UninsAll, Emplndx, and Standard.

Model summary (d)

Model	R	R Square	Ad-justed R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.942(a)	.888	.886	218.08365	.888	528.911	1	67	.000	
2	.950(b)	.903	.900	204.48599	.015	10.207	1	66	.002	
3	.959(c)	.920	.916	186.74472	.017	14.136	1	65	.000	.865

- a Predictors: (Constant), UninsPov18
- b Predictors: (Constant), UninsPov18, FHHPovIndx
- c Predictors: (Constant), UninsPov18, FHHPovIndx, UninsAll
- d Dependent Variable: Medical-only cohort

Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Par-tial	Part	Toler-ance	VIF
1	(Constant)	-761.015	119.295		-6.379	.000					
	UninsPov18	.027	.001	.942	22.998	.000	.942	.942	.942	1.000	1.000
2	(Constant)	-1680.26	308.711		-5.443	.000					
	UninsPov18	.024	.001	.837	16.544	.000	.942	.898	.635	.577	1.735
	FHHPovIndx	3259.351	1020.201	.162	3.195	.002	.706	.366	.123	.577	1.735
3	(Constant)	-2902.29	430.259		-6.745	.000					
	UninsPov18	.012	.003	.418	3.470	.001	.942	.395	.122	.085	11.811
	FHHPovIndx	4548.105	992.741	.226	4.581	.000	.706	.494	.161	.508	1.969
	UninsAll	.004	.001	.402	3.760	.000	.911	.423	.132	.107	9.310

a Dependent Variable: Medical-only cohort

At this point, these results indicate that only the first three variables would help to explain the variance in the dependent caseload variable. The algorithm excluded Emplndx and Standard because their F probabilities never equaled the entry criterion ($\leq .05$).

The SPSS output tells us that the number of uninsured Oregonians living in poverty exhibits the greatest association (correlation or r value) with the medical-only cohort caseload (*Model 1*). The associated beta weight is 0.942, meaning that the monthly cohort caseload will increase 0.942 of its standard deviation (646) when the number of uninsured increases by one standard deviation (22,709); this equals $646 \times 0.942 = 609$ clients, or one new client for every 37 additional uninsured adult Oregonians living in poverty.

The percent of female-headed households in poverty, with a partial correlation of 0.366, is selected next¹⁹. This beta weight is 0.162, and that for uninsured in poverty changes to 0.837. The ratio of these two betas is $0.837 \div 0.162 = 5.2$; the uninsured variable has 5.2 times the unique predictive importance that the female-households variable has.

Finally, the total number of uninsured Oregonians is brought into the model. Its beta weight is 0.402, similar to, but less than, the current beta for the uninsured-in-poverty variable. At this point, however, the output indicates a problem with multicollinearity, or correlations among independent variables²⁰. The two parameters in the "Collinearity Statistics" segment of the second table above, "Tolerance" and the "Variance Inflation Factor" (VIF), indicate that the two uninsured variables remain correlated (see *Table 5.* above). Therefore, for the next phase of analysis, we kept *UninsPov18* and discarded *UninsAll*.

After excluding *UninsAll*, we added *CPU* to the original set of independent variables, and ran the Forward procedure again.

Model summary (d)

Model	R	R Square	Ad-justed R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square change	F Change	df1	df2	Sig. F change	
1	.942(a)	.888	.886	218.08365	.888	528.911	1	67	.000	
2	.950(b)	.903	.900	204.48599	.015	10.207	1	66	.002	
3	.961(c)	.923	.920	182.93495	.021	17.467	1	65	.000	.863

a Predictors: (Constant), UninsPov18

b Predictors: (Constant), UninsPov18, FHHPovIndx

c Predictors: (Constant), UninsPov18, FHHPovIndx, CPU

d Dependent Variable: Medical-only cohort

Coefficients (a)

Model		Unstandardized coefficients		Standardized coefficients	t	Sig.	Correlations			Collinearity statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	-761.015	119.295		-6.379	.000					
	UninsPov18	.027	.001	.942	22.998	.000	.942	.942	.942	1.000	1.000
2	(Constant)	-1680.26	308.711		-5.443	.000					
	UninsPov18	.024	.001	.837	16.544	.000	.942	.898	.635	.577	1.735
	FHHPovIndx	3259.351	1020.201	.162	3.195	.002	.706	.366	.123	.577	1.735
3	(Constant)	-2098.70	293.764		-7.144	.000					
	UninsPov18	.022	.001	.788	16.856	.000	.942	.902	.579	.540	1.851
	FHHPovIndx	4480.548	958.315	.222	4.675	.000	.706	.502	.161	.523	1.912
	UninsAll	193.854	46.384	.151	4.179	.000	.159	.460	.144	.903	1.107

a Dependent Variable: Medical-only cohort

Again, the algorithm excluded *EmplIdx* and *Standard*, but brought in *CPU* as the third independent variable²¹. The final model with these three variables explained 92.3 percent of the variance in the medical-only cohort caseload.

The lack of the covariate *UninsAll* better enables the determination of the relative contributions of the independent variables. The beta weight for *UninsPov18* is 3.6 times greater than that for *FHHPovIdx*, and 5.2 times that for *CPU*. Multicollinearity is not present.

The final step was to enter the independent variables simultaneously using the Enter procedure. This will produce a model using all independent variables regardless of their predictive power. The independent variables were *UninsPov18*, *FHHPovIdx*, *EmplIdx*, and *CPU*.

Model Summary (b)

Model	R	R Square	Ad-justed R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.961(a)	.923	.919	184.25639	.923	192.700	4	64	.000	.854

a Predictors: (Constant), CPU, UninsPov18, FHHPovIdx, EmplIdx

b Predictors: Medical-only cohort

Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	-1593.080	1920.286		-.830	.410					
	UninsPov18	.022	.002	.788	13.126	.000	.942	.854	.454	.341	2.936
	FHHPovIdx	4439.593	977.395	.222	4.542	.000	.706	.494	.157	.510	1.961
	EmplIdx	-534.444	2005.494	-.018	-2.266	.791	-.676	-.033	-.009	.257	3.887
	CPU	193.854	46.384	.151	4.179	.000	.159	.460	.144	.903	1.107

a Dependent variable: Medical-only cohort

The resultant model is highly statistically significant. This variable set explains 92.3 percent of the variation in the medical-only cohort caseload over the study interval. Again, uninsured adults in poverty exhibit the greatest association with the dependent variable; the predictive power of this variable is 44 times greater than that of per capita jobs (0.788/.018). In the model, per capita jobs is not significant and does not help explain the variation in the medical-only caseload.

¹⁹ *Semipartial, or part, correlation in its squared form is the percent of full variance in the dependent uniquely and jointly attributable to the given independent when other variables in the equation are controlled (not allowed to vary). The linear effects of the other independents are removed from the given independent variable (and not from the dependent variable), then the remaining correlation of the given variable with the dependent is computed, giving the semipartial (part) correlation. Part correlation is almost always lower than the corresponding partial correlation. Partial correlation squared, however, reflects the percent of unexplained variance in the dependent explained by adding the given variable. That is, it reflects the percent of unexplained variance uniquely attributable to the given independent variable. The linear effects of the other independents are removed from both the given independent variable and from the dependent variable, then the correlation of the remaining/adjusted given variable with the remaining/adjusted dependent variable is computed, yielding the partial correlation. Partial r will almost always be higher.*

²⁰ *When the independent variables are correlated, it is quite difficult to assess their unique contributions to the dependent variable.*

²¹ *Some authors warn that SPSS does not appropriately process categorical variables in stepwise regression procedures. We did make some recommended adjustments, but for our purposes, these procedures are adequate.*

Model Summary (b)

Model	R	R Square	Ad-justed R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.961(a)	.923	.920	182.93495	.923	260.634	3	65	.000	.863

a Predictors: (Constant), CPU, UninsPov18, FHHPovIdx
 b Dependent Variable: Medical-only cohort

Coefficients (a)

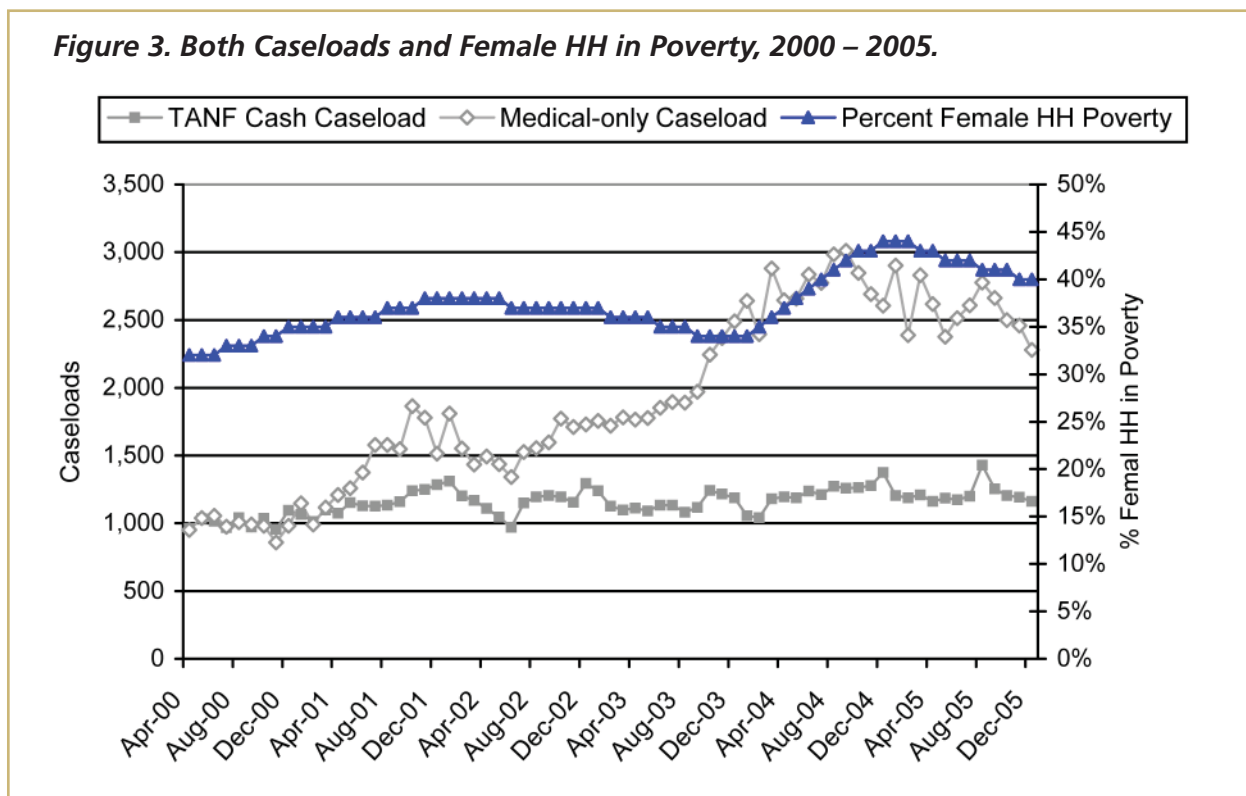
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics		
		B	Std. Error	Beta			Zero-order	Par-tial	Part	Toler-ance	VIF	
1	(Constant)	-2098.706	293.764		-7.144	.000						
	UninsPov18	.022	.001	.788	16.856	.000	.942	.902	.579	.540	1.851	
	FHHPovIdx	4480.548	958.315	.222	4.675	.000	.706	.502	.161	.523	1.912	
	CPU	193.854	46.384	.151	4.179	.000	.159	.460	.144	.903	1.107	

a Dependent Variable: Medical-only cohort

Like the last Forward procedure, the beta weight for *UninsPov18* is 3.6 times greater than that for *FHHPovIdx*, and 5.2 times that for CPU. Again, multicollinearity is not an issue.

Although not the focus of this analysis, we repeated this process for the TANF cash monthly cohorts. *FHHPovIdx* and CPU remained as significant contributors at the end. However, the resultant model was not as statistically powerful as that for the medical-only clients; it explained 53.6 percent of the variation in the TANF cash caseload with the beta weight for *FHHPovIdx* being 2.3 times as powerful as that for CPU. Differences between these two caseloads have been noted throughout the study.

Figure 3. Both Caseloads and Female HH in Poverty, 2000 – 2005.



Discussion and conclusions

We used multiple regression analysis to compare the primary factors that were identified in the first part of this report as having strong influences on the medical-only caseload. The final regression model indicated that the portion of Oregonians 18 to 64 years of age and living in poverty with no medical insurance had the greatest statistical association with the number of new clients per month on the medical-only caseload. The percentage of female-headed households with children in poverty exhibited a significant relationship with the caseload, as did the categorical variable representing the revised process within the Central Processing Unit. Direct measures of the recession and economy, the economic indicators, did not exhibit relative importance in predicting the caseload.

These results are logical. Although having medical insurance does not disqualify an applicant for TANF Related Medical, it is likely that most clients were initially uninsured. As shown in *Figure 2.*, the numbers of uninsured adults in poverty has grown over the study interval, a phenomenon that was, no doubt, related to the recession and resulting shift in available job types as explained in the first part of this report. Quantitatively, these numbers should have a closer association with the medical-only caseload than the economic indicators that are actually proxies for the various effects of economic change.

Female-headed households with children in poverty, as a percentage of all female-headed households, comprise a large portion of the actual TANF and medical-only caseloads. The increasing percentages of single mothers in poverty indicate that these numbers are growing faster than would be expected by overall population growth alone. Single parents have the greatest probability of minimal incomes and no health insurance. Again, the work and wage characteristics that were discussed earlier no doubt apply to these types of households.

Program and policy changes would also affect caseload dynamics albeit in a more “artificial” fashion than would the interplay between the economy and demographics. However, these effects are much more difficult to analyze in quantitative studies due to a lack of direct information on the outcomes of such change. In this study, we used “dummy” variables (0 or 1) to represent the monthly occurrence of the assumed effects of the Central Processing Unit and the opening and closing of the OHP Standard program. Although CPU was statistically associated with the medical-only caseload, and the TANF cash caseload as well, it had relatively little predictive power. CPU and either caseload did not exhibit a significant, independent correlation. Also, its value is “1” for most of the data series (October 2001 – September 2004), especially that portion in which we observed the greatest caseload growth. Therefore, the specific contribution of CPU to caseload growth is still not clear, but no evidence has emerged to refute our earlier conclusion that the CPU did not play a major role in the growth of the caseload. However, to clarify this function, staff should perform further analysis using administrative data that specifically represents the outcomes from the Central Processing Unit’s activities.

Appendix XIII: Method to calculate the costs of additional TANF related medical clients

In this report, we stated that Oregon's economic recession was primarily responsible for the rapid growth of the TANF Related Medical caseload since 2000. We determined that this growth was far greater than that which would be expected if only due to simple population growth, and the proportion of people in poverty who are uninsured remained constant. We then estimated that the total cost of this "extra" portion of the monthly caseload was \leq \$290,800,000. Following is an explanation of how we calculated this figure.

Primary question and assumptions. If unusual external factors contributed to a disproportionate increase in the TANF Related Medical caseload above a level that would have been expected without the occurrence of these factors, then how large was the "extra" portion and how much did it cost?

In reality, we do not have a control group because Oregon's recent levels of poverty and the recession are interrelated. Attempts to simulate the lack of a recession by statistically projecting poverty numbers for 2001 – 2005 using 1996 –2000 data were unsuccessful due to lack of monthly data; these analyses did indicate, however, that poverty levels would continue to decline if the recession had not occurred.

Methods. To answer the question, we first had to define the expected caseload growth in the assumed absence of the recession and other factors; this would be the baseline. We then subtracted this number from the monthly actual to calculate the extra clients per month:

1. We assumed that the caseload should grow no faster than the subpopulation that represents potential TANF clients; we believed that this subpopulation would be all Oregonians with incomes at or below the federal poverty standard, as well as having no health insurance.
2. Next, we applied the 2000 poverty rate for all Oregonians living below the FPL to the total population estimates for 2000 through 2005. These numbers represent the growth in poverty without the recession. We then calculated the number of uninsured individuals in this subgroup, and assumed that all available individuals living in poverty with no health insurance would enter the TANF Related Medical caseload every month starting in December 2000. Because Oregon's recession started in November 2000, and we are calculating costs attributable to the recession, we started the calculations one month after the start of this event.
3. To calculate the baseline, we initially added 87 clients to November's caseload actual ($45,962 + 87 = 46,049$). We then added 87 to each preceding sum ($46,049 + 87 = 46,136$, etc.). We continued this procedure through October 2005. This method unrealistically assumes that none of the 87 new clients per month leaves the caseload.
4. We subtracted the baseline numbers per month from the monthly actuals; the difference would be the clients whose enrollment was a function of other factors, e.g., the economy.
5. We multiplied the average monthly costs, including administrative expenses, for TANF Related Medical clients by this difference to calculate the total monthly expenditures for the "extra" clients.

Table 1. Values and steps to calculate the baseline growth in caseload.

Variable	Rate or value	Source
Percentage of Oregonians living below FPL in 2000	13.2 Percent	US Census Bureau
Percentage of Oregonians living below FPL with No Health Insurance in 2001	23.7 Percent	US Census Bureau and Oregon Population Survey
Number of Oregonians living below the FPL in 2000	452,901	3,431,066 x 0.132
Number of Oregonians living below the FPL in 2005	479,350	3,631,440 x 0.132
Per monthly difference over the 72 Months	367/mo	6,269/72 mo
Per monthly number of Oregonians living below the FPL and have no health insurance	87/mo	367/mo x 0.237

We used the following per-client average rates to calculate the total monthly costs of the extra clients.

Table 2. Annual costing rates for TANF Related Medical Clients.

Year	Average cost per client per month
2000-01	\$148
2002	\$158
2003	\$167
2004	\$194
2005	\$213

The following two graphs show the baseline number of clients, the extras and then the monthly costs of the “extras.”

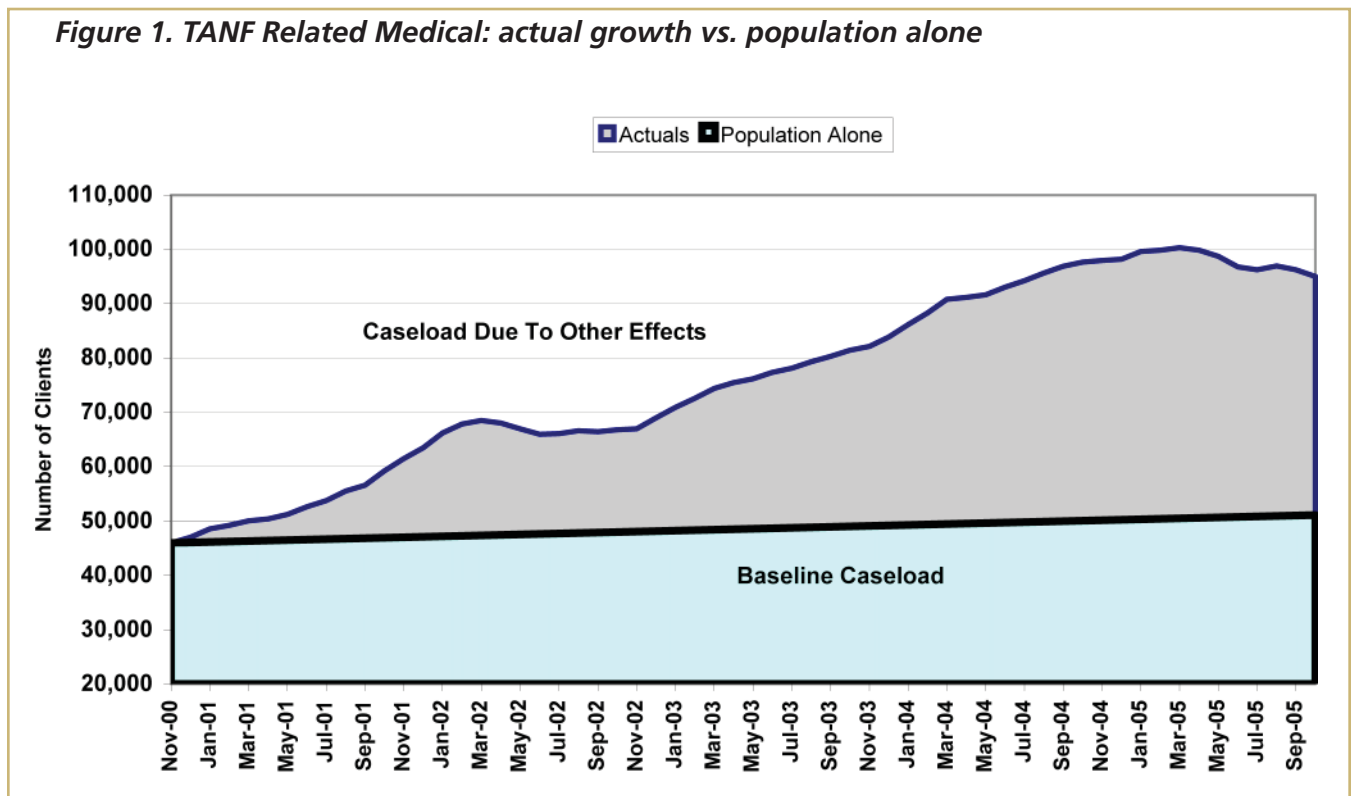


Figure 2. TANF Related Medical: Total monthly costs of extra clients

