

# **Oregon Supported Employment Center For Excellence**

## Final Evaluation Report

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## INTRODUCTION

Numerous research studies have identified supported employment as an evidence based approach to helping people with serious mental illness gain competitive employment. When supported employment has been compared in randomized controlled trials to other vocational interventions such as prevocational training and sheltered workshops, supported employment has consistently produced better competitive employment outcomes. In these studies individuals who received supported employment achieved competitive employment at a higher rate, 59% on average compared to 21% in comparison vocational programs (Bond, 2004a, 2004b; Lamier et al., 2005).

Several efforts are underway to implement evidence based supported employment programs throughout mental health agencies across the nation. For example, the Johnson & Johnson-Dartmouth Community Mental Health Program is one private-public-academic initiative sponsoring collaboration between state departments of mental health and vocational rehabilitation in implementing evidence based supported employment (Johnson & Johnson Community Mental Health Program, 2002). Through Johnson & Johnson, a total of 129 sites from twelve states (Connecticut, Illinois, Kentucky, Kansas, Maryland, Minnesota, Missouri, Ohio, Oregon, South Carolina, Vermont, Wisconsin) and the District of Columbia as of May 2011 ([http://www.chcreative.com/DPRC\\_MeetingPosters2011.pdf](http://www.chcreative.com/DPRC_MeetingPosters2011.pdf)). The Employment Intervention Demonstration Program, funded in 1995, established eight study sites in Maryland, Connecticut, Maine, Texas, Arizona, South Carolina, Pennsylvania, and Massachusetts and implemented evidence based supported employment (Cook et al., 2005). The National Evidence Based Practice Project began implementing five evidence based practices including supported employment across 53 sites in eight states (McHugo et al., 2007).

### **The Oregon Supported Employment Center for Excellence**

In 2008, the state of Oregon Addictions and Mental Health Division (AMH) funded the creation of the Oregon Supported Employment Center for Excellence (OSECE). OSECE is a collaboration between AMH, Options for Southern Oregon the Oregon Office of Vocational Rehabilitation and the Regional Research Institute (RRI) of Portland State University (PSU). OSECE was awarded a grant (RFP #2509) to implement and evaluate evidenced-based supported employment in community mental health centers serving individuals with severe mental illness in 12 sites across the state of Oregon. OSECE began in January 1, 2008 and is currently funded through June 30, 2013. The original 12 sites expanded to 16 high fidelity sites over the course of the

project to date with several new sites expected to achieve high fidelity within the next six months.

Options for Southern Oregon and Lifeworks NW emerged as leaders in the state of Oregon in supported employment, beginning in 1998 when both organizations secured separate Community Action Grants through the Substance Abuse and Mental Health Services Administration (SAMHSA). In 1998 and 2000, the RRI assisted Lifeworks NW in securing both Phase I and Phase II Community Action grants through SAMHSA to implement the evidence based Individual Placement and Support Model. Since that time, both Options' and Lifeworks NW's supported employment programs have thrived, and these two agencies have provided training and technical assistance to others interested in implementing supported employment across the state. Options was one of 22 sites in the U.S. working with Dartmouth University to measure the effectiveness of evidence based supported employment in the four-year Mental Health Treatment Study to be completed in January 2011

(<http://www.socialsecurity.gov/disabilityresearch/factsheets/mentalhealth.htm>).

This report provides a summary of findings from the evaluation conducted by the RRI for the 16 supported employment programs served by OSECE since 2008.

## METHODS

The evaluation was designed as a pre- post comparison study in which data was collected for individuals in the supported employment (SE) programs over 24 months prior to their enrollment in supported employment and 24 months post enrollment in SE. SE participants who enrolled in SE in one of the 16 SE sites from January 1, 2008, through December 31, 2008 were included in this study.

The data reported here include the following variables.

### **Outcome variables**

**Competitive employment rate.** Number and percent of individuals served by supported employment program who achieved competitive employment. Data provided by the State of Oregon Unemployment Insurance records.

**Competitive employment wages.** The State of Oregon Unemployment Insurance records track individual earnings summed across each of the four quarters of the year.

**Competitive employment hours worked.** Hours worked were also provided by the State of Oregon Unemployment Insurance records, and were reported as quarterly total hours worked per individual.

### **Program and service variables**

**Funding (revenue and expenditures) per program.** Total amount of revenue and expenditures was provided by the financial department of each agency. In April and May of 2011, each agency was asked to provide a cost survey detailing sources of revenue over 7 categories and expenditures over 10 categories. The average annual cost of providing SE services per program is provided, including an average hourly rate.

**Is Medicaid billing rate sufficient to cover cost of services provided by SE programs?** SE program directors completed a survey to ask their perspectives on whether the SE Medicaid rate is sufficient to cover the cost of providing SE services.

**Supported Employment Fidelity Scale scores.** Every 12 months, the OSCECE program staff conducted site visits with SE sites and completed the Dartmouth Fidelity Scale. Fidelity scale scores over the project are reported by site.

**Supported Employment service hours paid by Medicaid.** The office of Addictions and Mental Health provided Medicaid data including units of service and cost.

**Services provided by the Office of Vocational Rehabilitation Services.** The Office of Vocational Rehabilitation Services provided service utilization data and cost of services for each of the SE participants in this evaluation.

**Outpatient psychiatric service hours paid by Medicaid.** The office of Addictions and Mental Health provided Medicaid data including units of service and cost.

**Psychiatric hospitalization and ER use paid by Medicaid.** The office of Addictions and Mental Health provided Medicaid data including units of service and cost.

### **Individual/Contextual level variables**

**Mental health diagnosis.** DSM-IV diagnoses were provided by the Client Process Monitoring System (CPMS) at time of enrollment. SE outcomes were compared for individuals with a diagnosis of schizophrenia compared to other diagnoses, and for people with substance abuse co-morbidity compared to those without.

**Demographic information.** Demographic information was provided by the state office of Addictions and Mental Health and included: gender, age, race, marital status, and highest grade completed.

**State and county unemployment rate by quarter.** The state unemployment rate and each county's unemployment rate were reported on a quarterly basis over the evaluation period to OSECE stakeholders at the quarterly OSECE oversight committee meetings.

**Length of time enrolled in the SE program.** Each program provided enrollment data for all SE participants including enrollment and termination dates. From these dates, the number of days enrolled in the SE program was calculated.

## RESULTS

### Demographics

This evaluation examined the 504 individuals enrolled in OSECE from January 1, 2008, through December 31, 2008, the first year of implementation for 14 of the 16 sites. Key demographics are reported for the evaluation sample.

Gender. 224 (45%) identified as female and 277 (55%) as male.

Age. The average age of SE participants was 40 years. The age range was 19 to 66 years.

Ethnicity. The majority of SE participants were Caucasian - 439 (87%). African Americans represented 3.6% of sample. The following ethnic groups served by OSECE ranged from 2 to less than 1 percent: Asian, Hawaiian or Pacific Islander, Hispanic, Multi-Racial, and Native American. Five individuals (1%) were missing ethnicity/race data.

Highest Level of Education. The Client Process Monitoring System (CPMS) provided education data for 386 (77%) of the 504 individuals enrolled in SE, as reported in Table 1. One-third of SE participants had less than 12 years of education. The largest percentage (40%) had graduated from high school; 21% had some college; and 6% had a baccalaureate degree or higher.

Table 1: Highest level of education (n=386)

|  | Number (%) |
|--|------------|
| Less than 0-11 years                       | 129 (33%)  |
| 12 years                                   | 156 (40%)  |
| 13-15 years                                | 76 (21%)   |
| 16 years (baccalaureate degree equivalent) | 21 (05%)   |
| >16 years (graduate education equivalent)  | 4 (01%)    |
|  |            |
| TOTAL                                      | 386 (100%) |

Diagnosis Most individuals served by OSECE supported employment programs had a diagnosis of Schizophrenia or other psychotic disorder, followed by bipolar disorder, depression and other anxiety disorders.

Table 2: Diagnosis (n=450)

| <b>Diagnosis</b>          | <b>Number (%)</b> |
|---------------------------|-------------------|
| Schizophrenia             | 246 (49%)         |
| Psychotic NOS             | 27 (5%)           |
| Bipolar                   | 72 (14%)          |
| Depression                | 45 (9%)           |
| Drug/Alcohol              | 9 (2%)            |
| Anxiety                   | 18 (4%)           |
| Personality               | 16 (3%)           |
| Other                     | 17 (3%)           |
| <b>Total</b>              | <b>450 (89%)</b>  |
| Missing                   | 54 (11%)          |
| <b>Total with Missing</b> | <b>504 (100%)</b> |

### **Employment Outcomes**

Employment data was obtained from the State of Oregon Unemployment Insurance records for the first 504 individuals enrolled in OSECE supported employment. These enrollment dates were chosen in order to have at least 24 months post-enrollment in SE in the study period. The number of hours worked and wage earnings 24 months pre enrollment in OSECE and 24 months post enrollment in OSECE are compared. The State of Oregon Unemployment Insurance data is recorded quarterly. These data then represent the 8 quarters pre enrollment – based on the individual OSECE client enrollment date – and 8 quarters post enrollment.

### **Wages and Hours Worked from the State of Oregon Unemployment Insurance Records: pre and post enrollment in supported employment**

Of the 504 individuals, 245 (49%) had recorded hours worked and wages for at least one quarter of the 8 quarters prior to enrollment in OSECE supported employment. In the 24 months post enrollment in OSECE 284 (56%) individuals had recorded hours worked and wages. Table 3 provides the average number of quarters worked, and earnings 24 months prior to enrollment in supported employment and 24 months post enrollment in supported employment. The majority of all SE participants (58%) earned more wages in the 24 months post enrollment in SE compared to the 24 months pre-enrollment. Supported Employment participants earned \$967 more in total earnings over the 24 months post enrollment compared to 24 months pre-enrollment in SE. This increase in wages is largely attributed to the fact that

SE participants also worked on average 90 more hours over the 24 months post-enrollment compared to 24 months pre-enrollment.

The median number of hours worked and earnings was 0 pre-enrollment because 51% of SE participants did not work. However, post enrollment the majority of OSECE participants had worked and the median increased to 38 median hours \$348 median earnings post-enrollment.

Table 3: Employment Hours and Wage Earnings 24 months (8 quarters) pre-OSECE enrollment and 24 months (8 quarters) post-OSECE enrollment

|   | <b>24 Months Pre-OSECE</b> | <b>24 Months Post-OSECE</b> |
|---|----------------------------|-----------------------------|
| Employed                                    | 245 (49%)                  | 284 (56%)                   |
| Average number of quarters Worked*          | 2.0                        | 3.0                         |
| Average hours worked over 24 month period** | 399                        | 489                         |
| Average earnings over 24 month period***    | \$3625                     | \$4592                      |

\* statistically significant increase (paired t-test;  $t=-5.94$ ,  $df=503$ ,  $p<.0001$ )

\*\* statistically significant increase (paired t-test;  $t=-2.2$ ,  $df=503$ ,  $p<.027$ )

\*\*\* statistically significant increase (paired t-test;  $t=-2.0$ ,  $df=503$ ,  $p<.040$ )

Figure 1 shows the average earnings of all SE participants in the 8 quarters pre-OSECE compared to the 8 quarters post-OSECE enrollment. The data includes both working and non-working (\$0 earners) participants. Earnings increased by 27% in the eight quarters post SE enrollment compared to pre-SE levels. Similarly, Figure 2 shows that the number of hours worked in the 24 months post enrollment in SE increased by 23% in the eight quarters post SE enrollment.

Figure 1: Average total earnings over 24 months pre-SE enrollment and post-SE enrollment

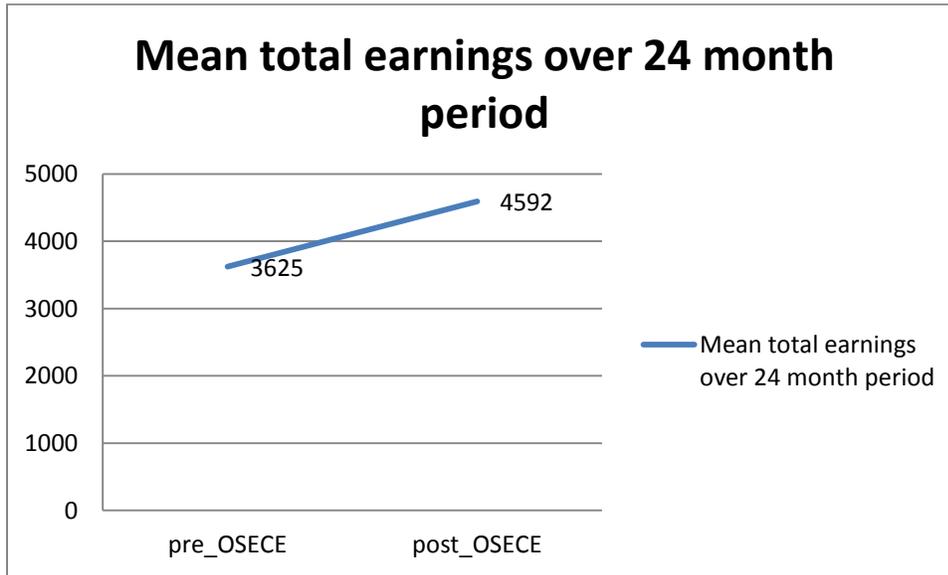
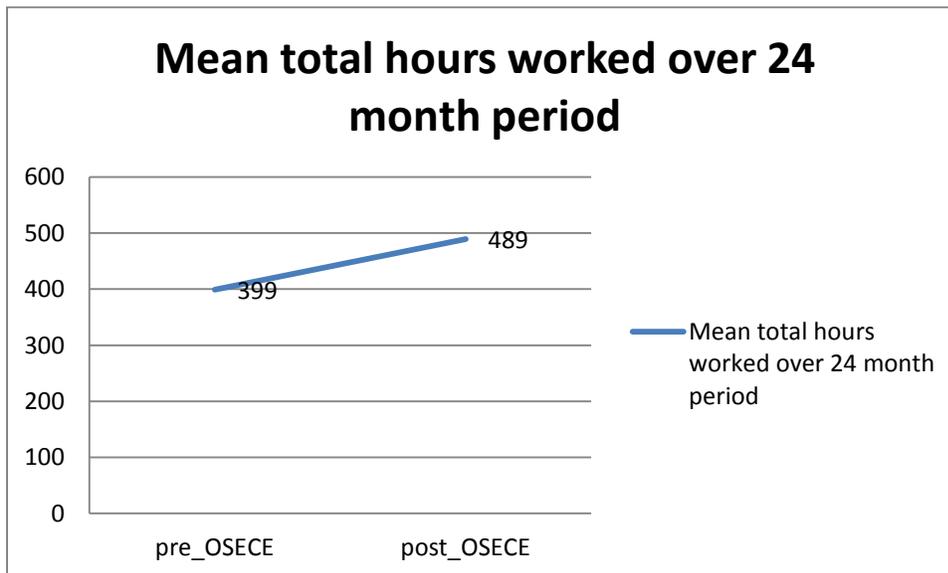


Figure 2: Average total hours worked over 24 months pre-SE enrollment and post-SE enrollment

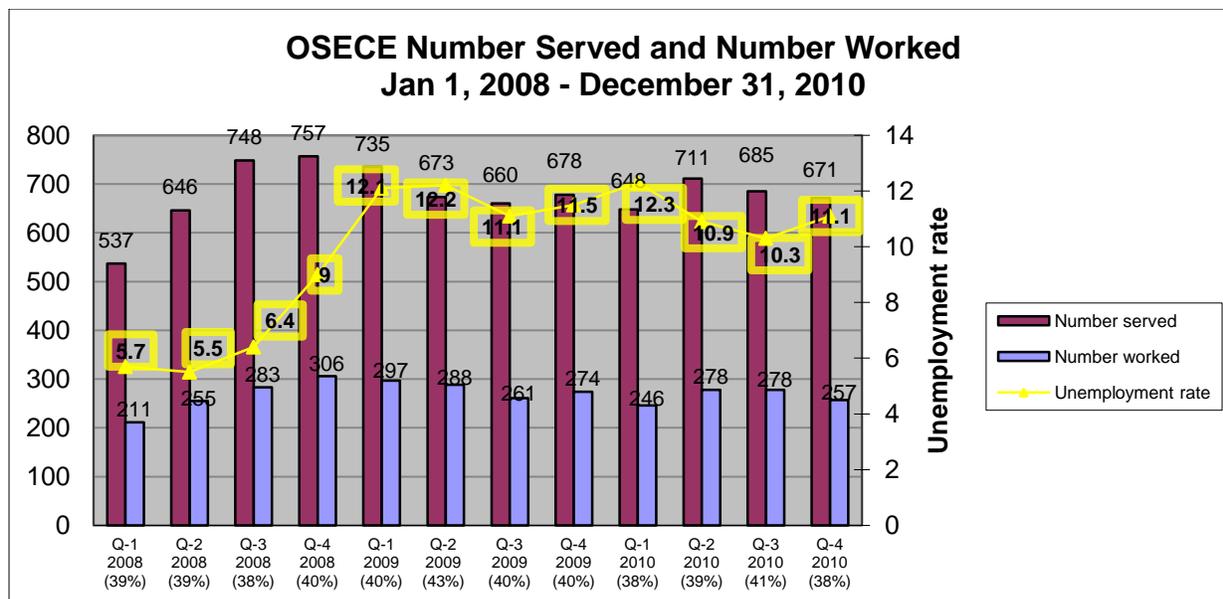


### Number and Percentage of SE Clients Who Worked by Quarter

Figure 3 illustrates the number and percentage of individuals who worked each quarter compared to the number of individuals enrolled in the SE programs across all OSECE sites over 12 quarters (January 1, 2008, through December 31, 2010). This graph illustrates that while the state unemployment rate doubled from 5.7 percent in the first quarter of 2008 to a sustained

10-12% starting in the first quarter of 2009, the OSECE sites were consistently maintained 38-43% of SE participants in competitive employment each quarter.

Figure 3: Number enrolled in OSECE, number worked and state unemployment rate by quarter



### Length of Time in SE Program

Of the 504 SE participants in this study, 239 had a recorded “end date” for SE services. The remaining 265 had no “end date” for the SE program and it is assumed they were in services through the end of the study period (December 31, 2010). Length of time in the SE program was calculated by subtracting the enrollment date from the end date. The average days in SE was 717 (out of 1185 maximum days possible over study period). Of the 504 SE participants, only 10 (2%) were terminated in the first 30 days. Within 60 days, 28 (6%) withdrew or were dropped from service; by 90 days the number was 38 (8%) and by 180 days, 87 (17.6%) were terminated.

Employment outcomes (quarters worked, total wages, and total hours worked 24 months post enrollment in SE) for the 87 individuals who received supported employment for less than 180 days was compared to those who received SE for longer than 180 days (See Table 4). These employment outcomes were compared over the entire 24 months post initial enrollment in SE for early terminators compared to those who stayed enrolled in SE. Early terminators worked fewer quarters 1.5, fewer hours 199 and earned less money \$2025 compared to the SE cohort that received more services and worked 3.4 quarters, an average of 550 hours, and earned \$5130 on average over 24 months.

Table 4: Comparison of Employment Outcomes for SE participants with less than 180 days of service and SE participants with greater than 180 days of service.

|   | Length in SE <180 days (n=87) |                           | Length in SE >180 days (n=415) |                           |
|---|-------------------------------|---------------------------|--------------------------------|---------------------------|
|   | 24 months pre-enrollment      | 24 months post-enrollment | 24 months pre-enrollment       | 24 months post-enrollment |
| Employed  |                               | 35 (40%)                  |                                | 247 (59%)                 |
| Average number of quarters worked               | 2.1                           | 1.5*                      | 2.1                            | 3.4*                      |
| Average total hours worked over 24 month period | 329                           | 199**                     | 414                            | 550 **                    |
| Average total earnings over 24 month period     | 2885                          | 2025***                   | 3814                           | 5130***                   |

\* statistically significant increase (paired t-test;  $t=4.1$ ,  $df=500$ ,  $p<.0001$ )

\*\* statistically significant increase (paired t-test;  $t=-3.2$ ,  $df=500$ ,  $p<.002$ )

\*\*\* statistically significant increase (paired t-test;  $t=-2.8$ ,  $df=500$ ,  $p<.005$ )

### Employment after exiting the SE program

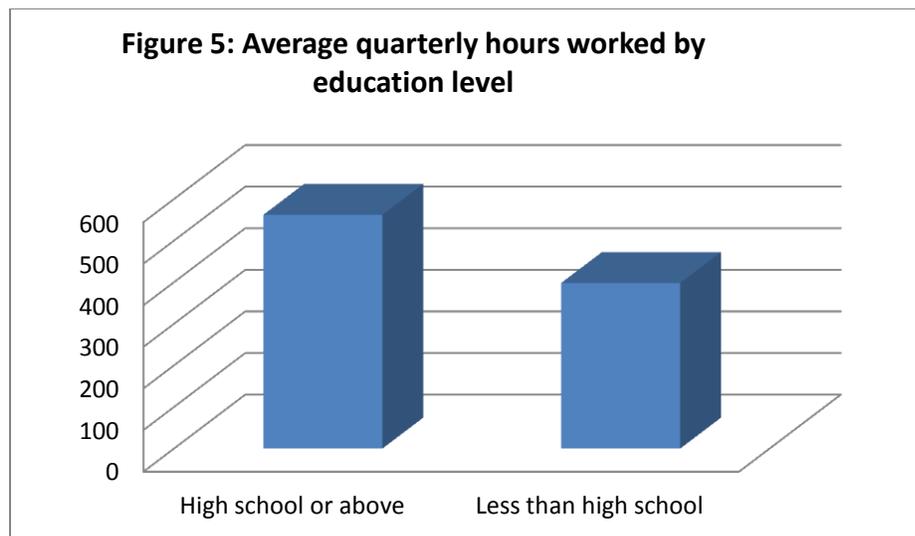
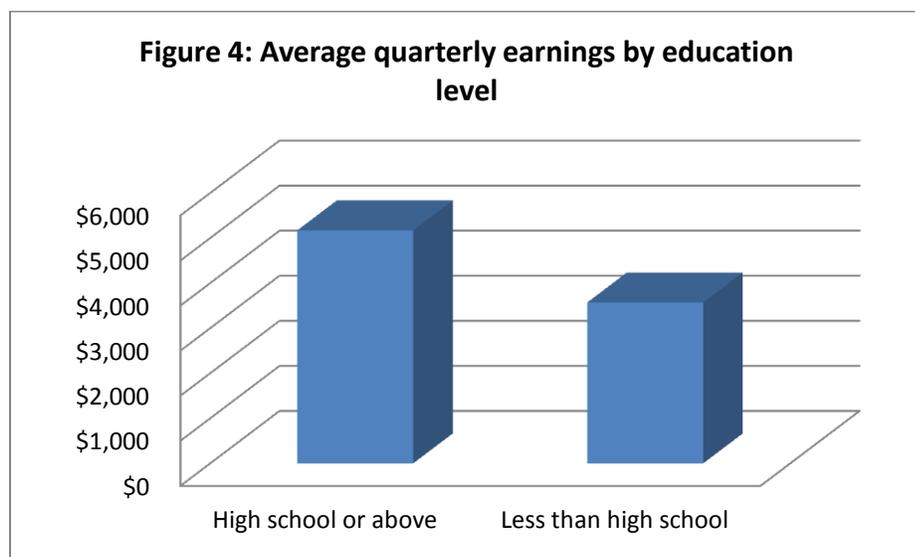
Seventy-six individuals (32%) of the 239 SE participants who ended SE services during some point in the study continued working after supported employment services ended. Because of the way the employment data reports total wages and hours worked by quarter, it is impossible to know if they were working in the same job continuously over the time after ending supported employment services. Nevertheless, the employment data indicates that these 76 former SE participants worked at least some hours and earned wages in the quarters after SE services ended. After SE services ended, these 76 individuals earned an average of \$879 per quarter (median=\$570), worked an average of 94 hours (median=60) over an average of 2.3 quarters.

### Employment History

The state provided employment records for the entire cohort of 504 SE individuals going back to the year 2000. Even prior to the study period (24 months pre-enrollment in SE), many of the individuals in this cohort had an extensive work history. Overall, 343 individuals (67%) had worked at least one quarter from 2000-2006. The average number of quarters worked over this six year period was 10 (out of 24), averaging 156 hours worked and \$1,443 earned per year. It is clear from the employment data, that this cohort was especially interested in work and the Supported Employment program helped them earn more wages and work more hours.

### Employment outcomes by demographic variables

Employment outcomes (wages, hours and number of quarters worked) were compared across demographic variables (gender, race, age, diagnostic categories, level of education). For this analysis age was grouped into 4 groups 18-29, 30-39, 40-49, and over 50. The age range was 18-65. Diagnosis was analyzed by comparing those with a diagnosis of schizophrenia compared to all other psychiatric diagnoses. Race was also dichotomized to compare whites to all other races. There were no statistically significant differences in employment outcomes across diagnostic categories, race, gender or age. However, SE participants with 12 years of education or higher, earned more wages on average, \$5170 compared to \$3570 over 24 months, and worked more hours, 562 compared to 398, and worked more quarters 3.4 compared to 2.7 than those who didn't complete high school (see figures 4 and 5).



## **Funding for High Fidelity Supported Employment Services**

In conjunction with the creation of OSECE in 2008, Oregon began using a Centers for Medicare Medicaid Services (CMS) code in accordance with the existing State Plan. The service criteria for H2023 T, is described as follows:

*Supported employment services are available to individuals with serious mental illness. Employment specialists assist in obtaining and maintaining employment in the community and in continuing treatment for the client to ensure rehabilitation and productive employment. Services to promote rehabilitation and return to productive employment. Programs use a team approach to engage and retain clients in treatment and provide the supports necessary to ensure success at the workplace. Use of this code requires authorization from AMH.*

Oregon restricted the use of this code to programs that achieve a score of 100 or better out of a possible score of 125 on the Dartmouth Supported Employment Fidelity Scale (2008) and placed the funding outside of Oregon Health Plan (OHP) capitation as fee for service reimbursement. This funding mechanism was originally conceived as a rate study pilot to determine the cost of providing high fidelity IPS services for the purpose of including SE services in the OHP capitation rates. This funding structure also served to incentivize implementation of SE through enhanced funding. Programs may still choose to provide employment services using services codes available through the OHP such as individual skills training and case management. However, these programs are not included in this study as their fidelity to the IPS model is unknown.

Other supplemental funding is also available to high fidelity SE programs. Fee for service funding (outside of OHP capitation) for Assertive Community Treatment (ACT) Teams which include employment specialists that are part of a high fidelity IPS team may be billing the ACT code as it reimburses at a higher rate than the SE code. SE programs included in this study may count income from employment specialists billing the ACT code as part of their program income.

Limited State general fund dollars are available to some high fidelity SE programs to serve indigent, uninsured clients through Service Element 38 funding. High fidelity IPS sites may contract with The Oregon Office of Vocational Rehabilitation (OVRs) to supplement program revenue. For clients being dually serviced (concurrently open cases) between the IPS program and OVRs, payments for successful employment placements and retention can occur. For the Federal Ticket to Work (TTW) program - when high fidelity IPS sites opt to serve eligible TTW clients, OVRs will track Ticket outcome/milestone payments and split these with the

participating SE program. This revenue is not considered payment for services provided but is intended to incentivize attainment of specific employment outcomes.

### **Cost to Programs for Providing Supported Employment Services**

In April and May 2011, RRI evaluation staff collected surveys from SE programs regarding cost and revenue for the SE program. Telephone interviews were also conducted with SE program directors or managers to learn about the extent to which their SE program had the resources and capacity to meet the needs of clients served by the agency. Twenty telephone interviews were completed with SE program directors and managers. In addition, thirteen of the sixteen SE programs completed the cost and revenue surveys. Two SE programs cited the reason they declined to provide cost and revenue surveys was because they had decided to discontinue their SE programs within the last six months due to lack of funding available to sustain the program.

### **SE Program Director Interviews**

Most SE program directors felt that their program had a solid foundation of trained, qualified and capable staff to provide supported employment services. However, all but one (92%) stated the need for additional resources to meet the demand for supported employment services and serve all consumers interested in work. Program directors most often cited the need for additional supported employment specialists, stating the need for a minimum of .5 FTE up to 2.0 additional FTE (average was 1.25). Most cited the need for additional staff because they maintain a waiting list to receive supported employment services of between 5 and 40 individuals (average was 17).

When SE directors were asked what qualifications were needed for supported employment specialists, almost all stated that they hired qualified mental health associates (QMHA's) to fill SE specialist positions. Program directors felt that this level of qualifications was sufficient; however, several also noted that there are additional skills specific to SE specialists that are required, especially job development skills. SE directors noted that job development requires the ability to meet with and develop relationships and networks with employers. This requires excellent communication skills and the ability to develop strong working relationships. Directors noted that the ability to market a program and job seekers may be more commonly taught in marketing and sales courses than in social work or social service training programs. However, this skill is critical to a supported employment specialist. Program directors most often sought supported employment specialists with skills that included: job development; strong communication skills with both job seekers and employers; ability to interact with a wide variety of job seekers; a strength-based perspective; problem-solving skills; ability to work with

people with criminal background; assertiveness to promote the program; flexibility; and the ability to work independently.

Several SE directors noted that a SE specialist does not need to be a qualified mental health professional (QMHP) because the SE program is integrated into other comprehensive mental health programs that provide a variety of additional mental health services. Typically, these services are provided by a multidisciplinary staff that includes QMHPs, psychiatrists, nurse practitioners, case managers, peer specialists and others. Three SE programs (19%), however, did have QMHP- level supported employment specialists.

SE program directors were asked: **“Has your agency had to make cuts in the SE program regarding staff or services provided in the last 12 months due to budget shortfalls or the recession?”** In response, the majority (77%) stated that their programs were financially stable and they had not made cuts in the past twelve months and don’t foresee any cuts in the next twelve months.

SE program directors were asked: **“From your perspective, is the Medicaid reimbursement rate adequate, too low, or too high?”** Almost all (92%) reported that the Medicaid reimbursement rate was too low. Only one SE director stated that the rate was adequate.

One SE director stated that they are highly dependent on the legislative process, and said, *“Vocational Rehabilitation and Medicaid, those programs don’t fully cover costs for Supported Employment. The maintenance of all sources of funding—Medicaid and OHP funds, revenue from Vocational Rehab, supported employment, grant money, and transportation funds—will all be necessary to maintain services at the current level.”*

Another SE director stated, *“We struggle to make the Medicaid reimbursement pay for the program itself, without having to raise money elsewhere to make the program work.”*

A third SE director stated, *“We constantly struggle with transportation costs. . . . and seeking more transportation dollars for cab use and gas for vehicles. Many clients live more than 30 minutes away and don’t drive or have access to public transportation.”*

Finally, one SE director stated, *“The Medicaid rate is way too low. If it stays the way it is, it will be a death sentence for supported employment.”*

### **Cost and Revenue Surveys**

The RRI evaluation team asked all SE programs to complete a cost and revenue survey providing all revenue and expenses for the SE program from July 1, 2010, through December 31, 2010. These figures were used to calculate annualized revenue and expenses. The financial department at each agency completed the survey. Table 5 provides the sources of revenue for

SE programs across seven categories. Only one third of revenue for a SE program comes from Medicaid SE reimbursement (33%). An additional third of revenue comes from Service Element 38 Indigent funds (28%). Mental health agencies are supplementing the SE programs by contributing 18% of operational funds to cover the shortfall in funding for the SE programs.

Table 5: Total Annualized Revenue for OSECE programs

| Source of Revenue for SE programs                 | Total Revenue Across All Programs (%) | # with revenue source, n=13 (%) |
|---|---------------------------------------|---------------------------------|
| <b>Medicaid SE reimbursement</b>                  | \$683,554 (33%)                       | 12 (92%)                        |
| <b>Service Element 38: Indigent SE</b>            | \$589,044 (28%)                       | 11 (85%)                        |
| <b>OHP capitated codes</b>                        | \$49,468 (2%)                         | 2 (15%)                         |
| <b>Grant or foundation funding</b>                | \$41,398 (2%)                         | 3 (23%)                         |
| <b>Vocational Rehabilitation contract funding</b> | \$118,090 (6%)                        | 8 (62%)                         |
| <b>Agency contributions</b>                       | \$385,922 (18%)                       | 9 (69%)                         |
| <b>Other miscellaneous (MHO, etc.)</b>            | \$235,991 (11%)                       | 5 (38%)                         |
| <b>TOTAL</b>                                      | \$2,103,683 (100%)                    |                                 |

Table 6 provides the average revenue by category per agency across the revenue source codes.

Table 6: Average Annualized Revenue per OSECE programs

| Source of Revenue for SE programs                 | Average Revenue Annualized |
|---|----------------------------|
| <b>Medicaid SE reimbursement</b>                  | \$60,861                   |
| <b>Service Element 38: Indigent SE</b>            | \$55,050                   |
| <b>OHP capitated codes</b>                        | \$24,842                   |
| <b>Grant or foundation funding</b>                | \$13,799                   |
| <b>Vocational Rehabilitation contract funding</b> | \$16,870                   |
| <b>Agency contributions</b>                       | \$43,968                   |
| <b>Other miscellaneous (MHO, etc.)</b>            | \$47,198                   |
| <b>Average Total Revenue</b>                      | \$174,351                  |

The largest expenditure for SE programs are related to staff wages and associated personnel costs, benefits and other payroll taxes, accounting for 70% of all costs. Administrative costs accounted for 22% of spending and included administrative staff costs, human resources, management information systems, clinical supervision and other costs shared to operate the SE program through the agency. Travel was the third highest cost to programs and included cost for client and staff travel to provide services to SE participants in the community.

Table 7: Total Expenditures Annualized for all OSECE programs

| Cost Category  | Total Expenses Across All Programs Annualized (%) |
|--|---|
| <b>SE staff wages</b>  | \$1,074,169 (50%)                                 |
| <b>SE staff benefits (fringe)</b>                              | \$313,028 (15%)                                   |
| <b>SE staff payroll taxes</b>                                  | \$105,564 (5%)                                    |
| <b>SE office expenses</b>                                      | \$13,478 (1%)                                     |
| <b>SE program expenses/ client assistance</b>                  | \$29,011 (1%)                                     |
| <b>Telephone/communication and Information Technology (IT)</b> | \$28,889 (1%)                                     |
| <b>Insurance</b>   | \$11,455 (1%)                                     |
| <b>Travel (vehicle and mileage)</b>                            | \$70,714 (3%)                                     |
| <b>Other</b>   | \$38,396 (2%)                                     |
| <b>Administrative Costs</b>                                    | \$473,520 (22%)                                   |
| <b>TOTAL</b>   | \$2,141,398 (100%)                                |

Table 8 provides the average annualized expenses per OSECE program. The average total cost to operate the supported employment programs was \$178,450 (See Table 8). The average hourly cost for SE programs to deliver SE services is \$104.14. However, the state Medicaid reimbursement rate for SE services is only \$68.00 per hour. The average annual salary for a QMHA supported employment specialist was \$36,503, with \$17,444 additional for fringe benefits. Annual salary for a QMHP SE specialist was \$40,656, with \$14,281 in fringe benefits. For a SE supervisor the annual salary was \$55,700, with \$21,070 in fringe benefits. As can be seen from Table 6, the largest expense for SE programs is staff salary and fringe benefits. Providing travel to staff and participants is the fifth largest expense and is not covered by Medicaid. Supported employment program directors express the greatest difficulty in covering this cost.

Table 8: Average Annualized Expenses per OSECE programs

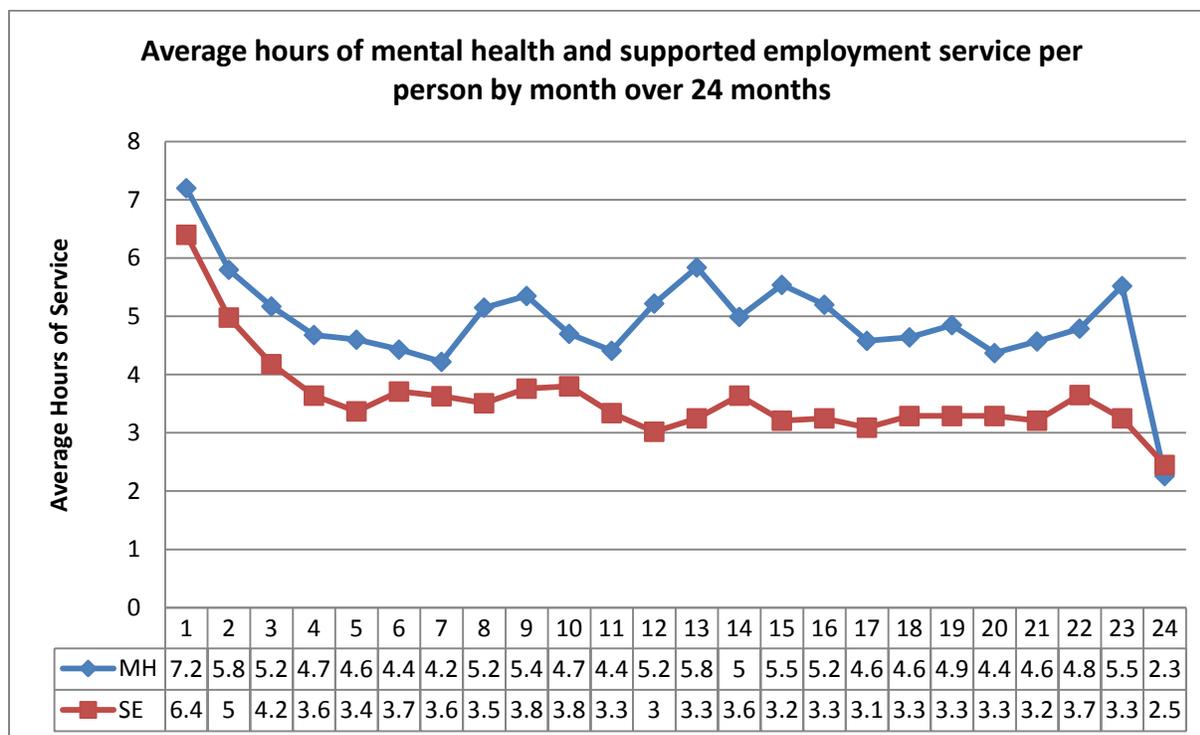
| <b>Cost Category</b>   | <b>Average Expenses Annualized (%)</b> |
|--|--|
| <b>SE staff wages</b>  | \$89,514                               |
| <b>SE staff benefits (fringe)</b>                              | \$26,086                               |
| <b>SE staff payroll taxes</b>                                  | \$8,797                                |
| <b>SE office expenses</b>                                      | \$1,123                                |
| <b>SE program expenses/ client assistance</b>                  | \$2,418                                |
| <b>Telephone/communication and Information Technology (IT)</b> | \$2,407                                |
| <b>Insurance</b>   | \$955                                  |
| <b>Travel (vehicle and mileage)</b>                            | \$5,893                                |
| <b>Other</b>   | \$3,200                                |
| <b>Administrative Costs</b>                                    | \$39,460                               |
| <b>TOTAL</b>   | \$178,450                              |

### **Outpatient Mental Health and Supported Employment Service Type and Amounts**

All Medicaid paid outpatient mental health and supported employment services were provided by Community Mental Health Programs and their subcontractors for the 504 supported employment participants in this study sample. Outpatient mental health services included: 1) medication evaluation and management, 2) psychological testing, evaluation and psychiatric diagnosis, 3) individual counseling, 4) family counseling, 5) group counseling, 6) case management, and 7) peer services. Vocational services included one billing code for supported employment. Under this one code, evidence based supported employment includes many vocational services including: 1) vocational assessment and evaluation, 2) vocational treatment planning/career counseling, 3) job development and placement, 4) ongoing job support, 5) collaboration with employers, and 6) job related transportation and assistance with job search. For this analysis, the total service hours for mental health services and vocational services were calculated monthly for each client 24 months post-enrollment in SE. On average each SE

participant received 4.9 hours of mental health services and 3.6 hours of SE services per month over the 24 months post enrollment in SE, as shown in Figure 6. Participants received the highest amount of both mental health and supported employment services in the first three months. However, from months 4 through 23, supported employment services and mental health services stayed fairly constant – mental health fluctuated between 4 and 6 hours of service, and supported employment between 3 and 4 hours each month per person.

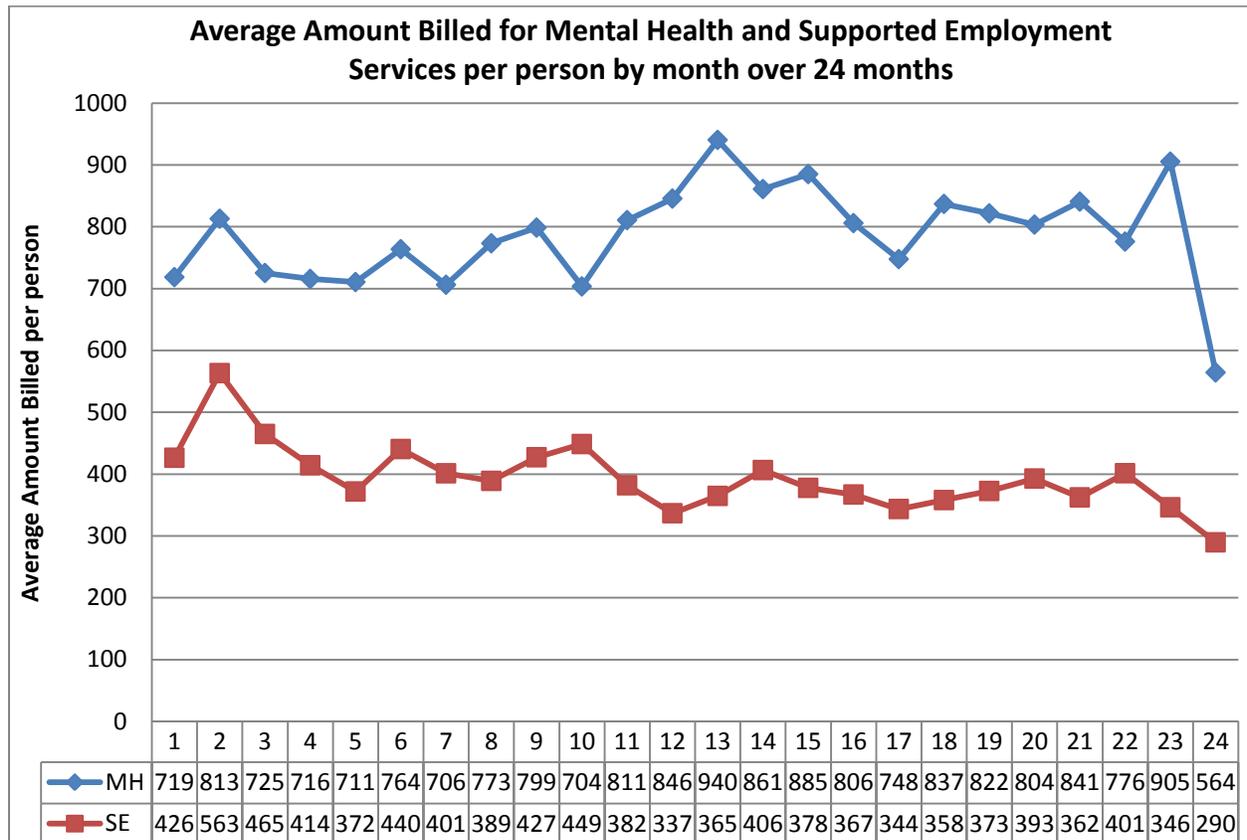
Figure 6: Hours of Mental Health and Supported Employment Services Provided Each Month



### Medicaid Payments for Mental Health and Supported Employment Services

For all SE sites, the same mental health agency provided both psychiatric and vocational services (not always at the same location—some agencies have more than one office within the service area). Figure 7 shows the average amount Medicaid paid for mental health and supported employment services per person per month. Over the 24 months post enrollment in SE program, the average Medicaid payment for mental health services was \$786 per month, while the average amount paid for SE was \$393 per month.

Figure 7: Dollars Billed for Mental Health and Supported Employment Services Each Month



**Emergency Room and Inpatient Mental Health for Employed versus Unemployed SE participants**

In this sample of 504 individuals with mental health diagnoses enrolled in supported employment programs, emergency room (ER) visits for mental health reasons (MH diagnosis or procedure codes) accounted for 14% of all ER visits paid for by Medicaid over 4 years (1/1/06-12/31/10). ER costs associated with MH diagnoses and procedures averaged \$1445 per individual while ER costs associated with physical health diagnoses and procedures averaged \$2902.

Inpatient hospitalizations for mental health reasons accounted for only 2% of Medicaid billings for this sample, while 98% Medicaid billings for inpatient hospitalization were for physical health reasons. Outpatient mental health services accounted for 41% of all outpatient services paid for by Medicaid (the remaining 49% for physical health or substance abuse services). Annual Medicaid cost for outpatient mental health services averaged \$7856 per OSECE client.

## VR Data and Expenditures

Approximately one third of SE participants (150 of 504) were dually enrolled with Vocational Rehabilitation Division. The types of additional services provided by VR included assistance with transportation; vocational services and supports (assessment, job development, coaching, and retention services); assistive technology; skills building and trainings; college courses; dental and vision care; and health assessments services, medical and psychological assessment, and evaluation. Services paid for by VR averaged \$4329 per person over the study period. Table 7 provides the total amount VR paid by service category for the 504 SE participants.

Transportation assistance including bus passes, taxi service, and bicycle purchases, was the second largest resource that VR provided to SE participants.

Table 9: Vocational Rehabilitation Services for SE participants

| VR service  | Amount VR paid for SE participants |
|---|------------------------------------|
| Vocational supports and services                                    | \$176,229                          |
| Transportation  | \$ 68,477                          |
| Medical or psychological assessment, record acquisition, evaluation | \$39,998                           |
| Assistive technology/computers                                      | \$23,778                           |
| Skills building/training  | \$10,275                           |
| College   | \$10,079                           |
| Dental, vision  | \$7838                             |

## SE program fidelity scores

Over the entire evaluation period, almost all (14 out of 16) SE sites maintained a SE fidelity score 100 or above. The average fidelity scale score across all sites was reported to the SE oversight committee on a quarterly basis. While fidelity measurement occurred on an annual basis, the last fidelity scale score was reported each quarter for each site and updated as the scores changed. Overall fidelity ratings across programs over the three year evaluation period averaged 104.75. Appendix 1 provides the quarterly reports that the RRI provided to the oversight committee. Each report provided: 1) the total number of SE clients enrolled; 2) number of clients with new job starts; 3) the last fidelity score for the program; 4) client to staff ratio; 5) total number of new client referrals; 6) number of new job starts; and 7) the unemployment rate for each county and the state updated each quarter. These data provided information that was used to give the oversight committee and each agency the overall picture of the extent to which OSECE was meeting its goals and objectives and achieving the desired competitive employment outcomes for SE participants.

## DISCUSSION

As of June 30, 2011, OSECE assisted a total of 16 new supported employment sites across Oregon by: 1) providing technical assistance in the implementation of evidence based supported employment models including trainings, supported employment toolkits, site-visits, and on-going consultation; 2) conducting annual supported employment fidelity reviews of each site; 3) establishing local stakeholder groups in each county to provide local oversight including mental health consumers, Vocational Rehabilitation Division staff, and the business community; and 4) organizing two state-wide conferences over the initial 18 month implementation period.

The RRI created and taught an upper division course on Supported Employment within the Graduate School of Social Work in the spring of 2010, and provided trainings, workforce development and CEUs for mental health and employment specialists already in the field. The RRI conducted the evaluation of the implementation of supported employment programs across the state and collected quarterly employment outcome data. Through PSU's connection with Oregon Consumer Technical Assistance, OCTA provided workshops and training to consumers of mental health services and local consumer agencies in supported employment.

Overall, OSECE programs achieved a sustained 40% competitive employment rate across the 12 quarters (2 years) post implementation. These employment outcomes are particularly impressive given that the state of Oregon had a sustained state unemployment rate greater than 10% over this time period. SE participants who received greater than 180 days of SE service earned more wages, worked more hours and had longer lengths of employment. Thirty-two percent (32%) of individuals who were working while enrolled in SE continued to work continued to work even after SE services ended.

Randomized clinical trials of supported employment, particularly individual placement and support (IPS), have demonstrated superior employment rates of 58% on average compared to 21% competitive employment rates for control conditions. In the SE literature, prior work history among individuals enrolled in SE programs has been shown to be a strong predictor of future employment outcomes. For example, in the Employment Intervention Demonstration Project study, prior work history was reported by subjects and coded as one or more jobs in the past 5 years versus none (Cook et al. 2005). In this study, of SE programs located in eight states, the majority of individuals with severe mental illness who participated reported holding one or more jobs in the 5 years before baseline. Work history was defined as one or more years of continuous competitive employment and participants who had a work history worked

more hours and earned more wages than those who had previously worked less than one year (Cook et al. 2005, page 1131). This study also found that the majority of individuals who enrolled in supported employment had an extensive work history, indicating their desire to work and prior success in securing work.

Cook and colleagues (2005) also found that higher ratio of vocational services relative to other outpatient psychiatric services had better employment outcomes. This may be because those who received more psychiatric service hours had more disabling disorders and needed additional intensity of service. However, they note that better outcomes may be attributed to more hours of employment-specific vocational services and perhaps longer stay in a vocational program. This study found similar ratio of supported employment services relative to mental health services delivered on a monthly basis over time with approximately two hours of mental health services provided for every one hour of supported employment services.

Many SE program directors expressed concern over the cost to the agency to provide SE services that are not completely covered by revenues generated by the SE program. Mental health agencies are subsidizing SE programs by 11% on average. It is possible that the SE programs could increase their revenue by more effectively leveraging resources available to SE participants from other community and state agencies. For example, VR covers transportation costs for VR clients- transportation is the second largest expenditure for services they provide. SE program directors cited transportation as a barrier to SE participants and expressed difficulty in covering transportation costs. A relatively small percentage of SE participants are dually enrolled in SE and VR. It could be that increasing dual enrollment and service coordination across both programs could greatly benefit both the SE program and SE participants. The Medicaid reimbursement rate is \$40 lower than the average hourly rate for providing SE services reported by the thirteen OSECE agencies in the cost study, undercutting the agencies' ability to continue to provide evidence based SE services.

All SE sites eventually achieved high fidelity ratings over the first 24 months post implementation. However, two high fidelity SE sites were forced to close their doors because they could not financially sustain the program. The state of Oregon and all OSECE staff have invested a great deal of money, time and effort to implement now 16 high fidelity SE programs that are achieving outcomes comparable to nationally recognized SE programs. The biggest challenge now facing OSECE and the evidence based SE programs is how to ensure program sustainability and economic viability in the current economic recession. In the 2011 survey, mental health agencies were supplementing the SE programs by contributing 18% of operational funds to cover the shortfall in funding for the SE programs. It is unlikely that this is a sustainable solution. Without creative problem solving, other evidence based supported employment programs may be forced to close operations.

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