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Disabling conditions and work outcomes among enrollees in a Medicaid buy-in program

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Abstract. Working-age adults with severe disabilities face many barriers to reaching their employment potential. One important barrier is the concern that working will result in the loss of Medicaid benefits, which cover many needed healthcare services for people with disabilities at little or no cost. Now offered by over 30 states, Medicaid buy-in programs address this concern by allowing people with disabilities to retain Medicaid while they work and increase earnings. Prior reports of buy-in programs have not examined whether work outcomes vary with characteristics of buy-in enrollees. Using data from a statewide survey of Massachusetts buy-in program members, we found type of disabling condition to predict three work outcomes: current work status of all members; annual earnings over $10,000 among currently working members; and future work intentions of currently non-working members. Members with developmental or psychiatric disabilities were generally more likely to work but had lower earnings than other members. Members with a physical disability were generally less likely to work than other members, but when working tended to have higher earnings. Those with co-occurring psychiatric and physical disabilities had the poorest work outcomes. Across all conditions, few members had earnings at levels consistent with economic self-sufficiency. Policy and practice implications are discussed.

Keywords: Disability, employment, earnings, work barriers, health insurance

1. Introduction

Unemployment among working-age adults with disabilities is a significant problem. National data showed declining employment among adults with disabilities along with an increasing gap between employment rates of people with and without disabilities during the 1990's and early 2000's [4,21]. Employment rates are particularly low for those with severe disabilities, and even lower among members of this group who receive Social Security Disability Insurance (SSDI) or Supplemental Security Income (SSI) benefits [28]. Yet, many adults with disabilities want to work [24]. The barriers to employment for people with severe disabilities can be substantial. One important policy-related barrier is the fear that working will result in a loss of health insurance. Federal legislation enacted in the 1990's – the Balanced Budget Act (BBA) of 1997 and the Ticket-to-Work and Work Incentives Improvement Act (TTW) of 1999 – attempted to address this barrier by encouraging states to expand coverage to workers with disabilities who do not meet Medicaid income qualifications through the creation of *buy-in programs*. Only limited data are currently available on buy-in program participants [15,38], and the extent to which work participation is related to characteristics of buy-in participants has not been fully investigated. The study reported here examined the relationship of type of self-reported disabling condition to work outcomes among enrollees in the Massachusetts Medicaid buy-in program.

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1.1. Medicaid buy-in programs

About half of all adults with severe disabilities rely, at least to some extent, on public health insurance offered through the Medicare and Medicaid programs [28]. In general, working age adults with disabilities become eligible for Medicare or Medicaid by qualifying for SSDI or SSI cash benefits. SSDI is a disability insurance program available to those who have worked and paid Social Security payroll taxes; SSI is a benefit available to those with disabilities who have limited income and assets. In order to qualify for either program individuals must demonstrate a severe disability – that is, a medically determinable mental or physical impairment that results in the inability to engage in *substantial gainful activity*[1] (SGA) [32] – and many individuals with disabilities qualify for both programs. Qualifying for these programs can involve multiple applications, denials and appeals. This arduous process, coupled with the complexity of and differences in the regulations governing the programs can make those who secure benefits hesitate to engage in activities they believe could risk benefits. People may choose not to work when they believe they could, or they may work but keep earnings at levels that do not jeopardize their eligibility for these programs. In particular, the fear of losing health insurance by returning to work or increasing earnings is a well-documented phenomenon [16,17, 25]. Medicaid buy-in programs attempt to address this problem by allowing individuals who qualify on the basis of disability but whose family income or assets are too high to qualify for standard Medicaid to purchase Medicaid through premiums or other cost-sharing [23]. In 2005, more than 30 states had buy-in programs.

Buy-in programs are designed to remove what is believed to be a major obstacle to employment for people with disabilities. Yet people with severe disabilities can face a host of other work barriers, including factors related to disability itself, such as limitations in daily activities or the presence of co-occurring disabilities or secondary health problems; other person factors such as lack of education or poverty; broad environmental factors such as the stigma attached to many disabling conditions; or more local environmental factors such as inadequate public transportation or a poor local job market [17,31]. The effectiveness of buy-in programs may depend on the extent to which other barriers to employment have been identified and addressed. Recent reports of buy-in programs have described enrollment trends, changes in participants' earnings, their eligibility for other types of health insurance, and their Medicaid expenditures [15,23]. Studies have yet to examine whether work outcomes vary with characteristics of buy-in participants, such as demographic characteristics or types of conditions participants experience. Exploring these relationships would shed light on who among buy-in enrollees is likely to achieve the most positive work outcomes. Such findings would have important implications for evaluating the effectiveness of buy-in programs and for developing other policies and services that promote employment of people with disabilities.

The goal of the study reported here was to examine the extent to which type of disabling condition is associated with work outcomes among adults with disabilities enrolled in the Massachusetts Medicaid buy-in program. Using data from a survey of buy-in members, we asked: 1) is type of self-reported disabling condition associated with current self-reported work status among members? 2) Among currently working members, is disabling condition associated with work earnings in the past year? 3) Among currently non-working members, is disabling condition associated with future work intention?

2. Method

2.1. The Massachusetts Medicaid buy-in program

The Massachusetts Medicaid program (known as MassHealth) has had a buy-in program since 1988. Initially developed as a state funded program, the MassHealth CommonHealth program became a state and federally funded program under an 1115 Waiver in 1997, and was a model for the federal buy-in legislation (under BAA and TTW). Working age adults who meet federal Social Security Administration (SSA) or SSA-based state disability criteria but whose family income is too high to qualify for standard Medicaid can enroll. There are two eligibility categories within CommonHealth. Those who work 40 hours per month or more pay a family income adjusted premium. Those who are work less than 40 hours per month, or are not working, must meet a one-time deductible based on family income, and also pay a family income adjusted premium.

[1] People with disabilities are generally considered to be engaging in SGA when their countable monthly earnings from work exceed $860 (2006 level). SGA is higher for those who are blind. At the time of the current study (2003), SGA was $800 for non-blind individuals.

There are no income or asset limits for the CommonHealth program. CommonHealth enrollees represent a full range of work outcomes among individuals who would otherwise risk losing Medicaid by increasing their earnings.

2.2. The MassHealth Employment and Disability Survey (*MHEDS*)

The MHEDS is a 136-item survey, developed in 2003 under the Massachusetts Medicaid Infrastructure Grant (MMIG). The goal of the MMIG was to promote competitive employment of adults with disabilities in MassHealth through enhanced access to and coordination of health care and employment services. The MHEDS was targeted to adults from 19 to 64 years of age who qualified for any MassHealth program on the basis of disability, seeking to gather data on their disability, employment and health care experiences. Detailed discussions of the survey's development efforts and major findings are available elsewhere [18,19].

At the time the survey was administered, there were just over 8000 working-age adults with disabilities enrolled in the CommonHealth program. After obtaining Institutional Review Board approval, we administered the MHEDS to 1933 randomly selected CommonHealth members. We conducted a dual-mode administration of the survey, which included two mailings of an English language version of the MHEDS and telephone interviews with members who did not respond by mail. The telephone interview version of the MHEDS was available in English and Spanish. All data were collected between the last week of July and the fourth week of October 2003. Complete MHEDS data were available for 1093 CommonHealth members, for a 57% response rate.[2]

2.3. Measures

For the study reported here, we used variables derived from members' responses to MHEDS questions regarding demographic characteristics, disabling conditions, and work participation. *Disabling condition* was derived from members' responses (yes/no) to the following questions regarding six conditions:

1. Do you have any mental or emotional problems, such as depression, anxiety or bipolar disorder? (Psychiatric disability)
2. Do you have any physical disabilities that make it difficult for you to walk, move or get around? (Physical disability)
3. Do you have a disease or long-term illness such as cancer, heart disease, AIDS, or lung disease? (Long-term illness)
4. Do you have any type of developmental disability, such as autism or mental retardation? (Developmental disability)
5. Do you have any disabilities or health conditions as a result of a serious head injury? (Head injury)
6. Are you legally blind or deaf? (Sensory disorder)

There was no limit to the number of conditions to which members could answer "yes".

Current *work status* (currently working vs. not working) was derived from members' response to the question "are you currently working at a job for pay?" For currently working members, the MHEDS yielded *hours working per week* ($\leqslant$ 10 hours; 11 to 20; 21 to 30; $\geqslant$ 31 hours); *earnings in the past year* ($\leqslant$ \$5,000; \$5,001 to \$10,000; \$10,001 to \$20, 000; $\geqslant$ \$20,000); *and current job tenure* ($\leqslant$ 1 year; $>$ 1 year). For currently non-working members, the survey yielded *work history* (worked $<$ 2 years ago; worked within past 2–5 years; worked $>$ 5 years ago; never worked for pay), and *future work intentions* (currently looking or planning to look for work in the next few years vs. neither looking nor planning to look for work).

2.4. Study participants

Characteristics of currently working ($n = 510$, 47%) and non-working ($n = 583$, 53%) CommonHealth members are shown in Table 1. Working members were significantly younger, more likely to have higher education and speak English as their primary language, and less likely to live with a spouse or partner and to be receiving SSDI cash payments than non-working members. Among all members, psychiatric disability, physical disability and long-term illness were the most commonly reported conditions, at 61%, 55% and 37% respectively. Workers were significantly less likely than non-workers to report these three conditions, but more likely to report a developmental disability. Over 55% of all members reported more than one disabling condition; workers reported significantly fewer conditions than non-workers.

[2] Using MassHealth administrative data, we found that respondents were significantly more likely to be female, older, have higher family income and have higher Medicaid expenditures than non-respondents. Respondents and non-respondents did not differ in CommonHealth eligibility category or in Medicare enrollment.

Table 1
Demographic, disability and employment characteristics of currently working and non-working members with disabilities in the CommonHealth Program

	Currently working ($n = 510$)	Currently non-working ($n = 583$)	P value
Demographic Characteristics			
Age (mean, sd)	44 (11.0)	47 (9.3)	< 0.0001
Gender (male)	239 (47%)	293 (50%)	0.263
Race (Caucasian)	482 (95%)	539 (93%)	0.171
Ethnicity (Latino)	18 (3%)	18 (4%)	0.683
English is primary language	484 (95%)	535 (92%)	0.04
Living with spouse or partner	123 (24%)	189 (32%)	0.002
Some college or more	272 (53%)	261 (45%)	0.005
Received SSDI within past 12 months	234 (46%)	413 (71%)	< 0.0001
*Disabling Conditions**			
Psychiatric disability	294 (58%)	374 (64%)	0.03
Physical disability	193 (38%)	406 (70%)	< 0.0001
Long term illness	160 (31%)	244 (42%)	< 0.0003
Developmental disability	68 (13%)	28 (5%)	< 0.0001
Head injury	44 (9%)	53 (9%)	0.788
Sensory disorder (blind or deaf)	28 (6%)	26 (5%)	0.433
Number of Disabling Conditions			
One	294 (58%)	195 (33%)	
Two	162 (32%)	245 (42%)	
Three	54 (10%)	143 (25%)	< 0.0001
Work Effort of Currently Working Members ($n = 510$)			
Hours working per week			
$\leqslant$ 10 hours	72 (14%)		
11–20 hours	195 (38%)		
21–30 hours	78 (15%)		
$\geqslant$ 31 hours	165 (32%)		
Annual earnings (past year)			
$\leqslant$ \$5,000	131 (26%)		
\$5,001 to \$10,000	166 (32%)		
\$10,001 to \$20,000	100 (20%)		
$\geqslant$ \$20,001	113 (22%)		
Job tenure $>$ 1 year	428 (85%)		
Work History and Future Work Intentions of Currently Non-Working Members ($n = 583$)			
Work history			
Worked $<$ 2 years ago		85 (15%)	
Worked within past 2–5 years		171 (29%)	
Worked $>$ 5 years ago		275 (47%)	
Never worked for pay		52 (9%)	
Intends to work in the future		219 (38%)	

$N = 1093$; *Members could report any number of disabling conditions, so these percentages exceed 100%.

Over half of all working members reported working 20 hours per week or less. For the most part, workers reported low earnings in the past year. Seventy-eight percent of workers earned \$20,000 or less, while 58% earned \$10,000 or less. Hours and earnings were highly correlated ($r_{\mathrm{phi}} = 0.62$, $p < 0.0001$). Workers had relatively long job tenure, with 85% holding their current job for one year or more. Notably, earnings were low even among those with longer job tenure; 56% of workers with a year or more of job tenure reported earning \$10,000 or less in the past year. Only 9% of non-working members had never worked for pay in the past. Most non-working members reported being unemployed for two years or more. Thirty-eight percent of non-working members indicated an intention to work in the future. Recent employment was significantly correlated with future work intention among non-workers ($r_{\mathrm{phi}} = 0.30,\ p < 0.0001$).

3. Results

Because many members reported more than one disabling condition, we first categorized members by all possible combinations of the six conditions included in the MHEDS, initially creating 40 mutually exclusive groups with at least one member. These groups were then condensed into six *single condition* and five *multi-*

Table 2
Number and percentage of current workers among all members, of current workers reporting annual earnings over $10,000, and of current non-workers intending future work, for those reporting one versus multiple disabling conditions

	All Members ($n = 1093$)	Current Workers ($n = 510$)		Current Non-Workers ($n = 583$)	
	Number of members	Number (%*) working	Number (%**) earnings over $10,000	Number of non-workers	Number (%***) intending future work
Single condition groups					
Psychiatric disability only	230	148 (64%)	54 (37%)	82	43 (52%)
Physical disability only	139	56 (40%)	30 (54%)	83	24 (29%)
Long term illness only	67	45 (67%)	33 (73%)	22	10 (46%)
Developmental disability only	30	27 (90%)	4 (15%)	3	1 (33%)
Sensory disorder only	16	12 (75%)	7 (58%)	4	3 (75%)
Head injury only	7	6 (86%)	1 (17%)	1	0 (0%)
Multi-condition groups					
Psychiatric disability w/other conditions, w/o physical disability	126	67 (53%)	28 (42%)	59	27 (46%)
Physical disability w/other conditions, w/o psychiatric disability	148	58 (39%)	32 (55%)	90	32 (36%)
Psychiatric and physical disabilities only	134	35 (26%)	11 (31%)	99	37 (37%)
Psychiatric and physical disabilities, w/other conditions	178	44 (24%)	10 (23%)	134	38 (28%)
All other multiple conditions, w/o psychiatric or physical disabilities	18	12 (67%)	3 (25%)	6	4 (67%)

*Percentage of all members; **Percentage of current workers; ***Percentage of current non-workers.

condition groups. The distribution of the 489 members reporting a single condition ranged from seven for head injury to 230 for psychiatric disability. Of the 604 members reporting multiple conditions, 73% reported a psychiatric disability and 76% reported a physical disability; 52% reported both conditions. Because of the prevalence of these two conditions, we created the five multi-condition groups based on combinations of the two, ranging in size from 18 to 178.

Table 2 shows three dichotomous work outcomes – number (%) of members working; number (%) of workers with annual earnings over $10,000 (i.e. earnings over SGA); and number (%) of non-workers intending to work in the future – for the six single condition and five multi-condition groups. Rates of working ranged from 40% to 90% for members reporting a single condition and from 24% to 67% for those reporting multiple conditions. There was a lack of concordance across the three work outcomes ($p = 0.20$). The lack of concordance is most clearly illustrated by members reporting a developmental disability; 90% (the highest percentage) of these members reported working yet only 15% (the lowest percentage) of workers had earnings over $10,000.

Work outcomes for some members reporting multiple conditions did not differ substantially from their counterparts reporting a single condition (Table 2). Specifically, the three work outcomes for members reporting a psychiatric disability along with any condition *except* physical disability were similar to those reporting a psychiatric disability only. The same was true for members reporting a physical disability along with any condition *except* psychiatric disability in comparison to those reporting a physical disability only. Similarly, members reporting co-occurring psychiatric and physical disabilities along with other conditions had similarly low rates on all three work outcomes as members reporting co-occurring psychiatric and physical disabilities only. Nine separate chi-square analyses comparing three paired groups of members reporting similar conditions (psychiatric only to psychiatric with others except physical; physical only to physical with others except psychiatric; psychiatric and physical only to psychiatric and physical with others) on the three work outcomes were all non-significant (p's from 0.15 to 0.89) except for one. Members reporting a psychiatric disability only were significantly more likely to be working than members reporting a psychiatric disability with any other condition except physical disability ($p = 0.04$). Given its borderline statistical significance and the multiple comparisons we conducted, this finding could be due to chance.

Based on these findings, we further collapsed members into five groups comprised of those reporting: 1) *long-term illness* only; 2) *developmental disability* only; 3) *psychiatric disability* with or without other

Table 3
Results of logistic regression analyses predicting current work status of all members, annual earnings over $10,000 among current workers, and intention to work in the future among current non-workers from disabling conditions

	Odds Ratio	(95% CI)
Model 1: Current work status of all members ($n = 1052$)		
Physical disability (ref) ($n = 287$)	1.00	
Long term illness ($n = 67$)	**3.24**	(**1.82–5.77**)
Developmental disability ($n = 30$)	**13.48**	(**3.09–46.60**)
Psychiatric disability ($n = 356$)	**1.93**	(**1.38–2.69**)
Co-occurring psychiatric and physical disabilities ($n = 312$)	**0.47**	(**0.33–0.68**)
Age	**0.86**	(**0.75–0.98**)
Education	**1.46**	(**1.12–1.91**)
Model 2: Annual earnings over $10,000 among current workers ($n = 480$)		
Physical disability (ref) (114)	1.00	
Long term illness ($n = 45$)	**3.22**	(**1.43–7.27**)
Developmental disability ($n = 27$)	**0.15**	(**0.05–0.51**)
Psychiatric disability ($n = 215$)	**0.47**	(**0.29–0.78**)
Co-occurring psychiatric and physical disabilities (s) ($n = 79$)	**0.31**	(**0.16–0.60**)
Age	**0.69**	(**0.57–0.84**)
Education	**2.11**	(**1.39–3.01**)
Model 3: Intention to work in the future among current non-workers ($n = 572$)		
Physical disability (ref) ($n = 173$)	1.00	
Long term illness ($n = 22$)	1.67	(0.63–4.45)
Developmental disability ($n = 3$)	0.87	(0.08–10.08)
Psychiatric disability ($n = 141$)	**1.66**	(**1.01–2.71**)
Co-occurring psychiatric and physical disabilities ($n = 233$)	0.94	(0.60–1.46)
Age	**0.62**	(**0.51–0.76**)
Education	**1.91**	(**1.32–2.77**)

Current work status: 1 = currently working, 0 = currently not working; Annual earnings over $10,000 and Intention to work in future: 1 = yes, 0 = no; Age is grouped in 10 year increments from 20 to 60+ years; Education: 1 = some college or more, 0 = HS graduate or less. Other demographic variables controlled in the regression analyses included gender, race, ethnicity, primary language, and marital status (living w/spouse or partner); all were non-significant. Significant odds ratios are **bolded**.

conditions except physical disability; 4) *physical disability* with or without other conditions except psychiatric disability; and 5) *co-occurring psychiatric and physical disabilities* with or without other conditions. The small number of members reporting sensory disorders only ($n = 16$), head injury only ($n = 7$) or other multiple conditions excluding psychiatric and physical disabilities ($n = 18$) were dropped from further analyses, yielding a reduced sample of 1052 members, with 480 (46%) workers and 572 (54%) non-workers.

Finally, we generated three separate multivariate logistic regression models testing associations between our new groupings of disabling condition and each of the three dichotomous work outcomes, using physical disability as the referent group and controlling for demographic characteristics. Odds ratios and 95% confidence intervals (CIs) for each model are shown in Table 3. In Model 1, predicting work status, odds ratios show that members with a psychiatric disability were almost twice as likely, those with a long-term illness were over three times as likely, and those with a developmental disability were over 13 times as likely to be working as those with a physical disability. Conversely, those with co-occurring psychiatric and physical disabilities were less than half as likely to be working as those with a physical disability. In Model 2, predicting annual earnings over $10,000, workers with a long-term illness were over three times as likely to report annual earnings over $10,000 as those with a physical disability. On the other hand, members with a psychiatric disability, co-occurring psychiatric and physical disabilities, and particularly a developmental disability were significantly less likely to have earnings over $10,000 than those with a physical disability. In Model 3, predicting future work intention among unemployed members, those with a psychiatric disability were over 1.5 times as likely to intend to work in the future as those with a physical disability. In all three models, younger age and a higher level of education were significantly associated with more positive work outcomes.

4. Discussion

Among adults with disabilities enrolled in the CommonHealth program, we found type of self-reported disabling condition to be significantly associated with three work outcomes. Members with a developmental disability, those with a long-term illness, and those with a psychiatric disability were all significantly more likely to be working at the time of the survey than members with a physical disability. While members with multiple conditions were generally less likely to be working than those with a single condition, the combination of psychiatric and physical disabilities,accounting for 25% of study participants, appeared to put members at the greatest risk for not working. These members were less than half as likely to be currently working as members with a physical disability.

We observed a notable lack of concordance between working and earning among members in three of the disability groups. This lack of concordance was most evident for members with a developmental disability who, although the most likely to work, were the least likely to have higher earnings. A similar pattern, although not as pronounced, was seen among members with a psychiatric disability. On the other hand, those with a physical disability were less likely to be working than most other members, but when working had higher earnings than all other members except those with a long-term illness. Members with a long-term illness were the only group to show a both high likelihood of working and earning at higher levels. Conversely those with co-occurring psychiatric and physical disabilities had both a low likelihood of working and of earning over $10,000.

The varied patterns that we observed in working, earning, and intending future work among CommonHealth members suggest that people with different types of disabling conditions face different types of work barriers. For some, a disabling condition may not prevent work but may limit earnings, as appears to be the case for CommonHealth members with a developmental disability. Other studies have documented low earnings among workers with developmental disabilities, both in the population as a whole and among those participating in vocational rehabilitation services [5,35, 39]. The cognitive impairments often associated with developmental disabilities (e.g. mental retardation) are likely the factors that limit the potential of these individuals to earn at higher levels [26]. Federal legislation (e.g. Developmental Disabilities Act of 1984; Developmental Disabilities Assistance and Bill of Rights Act of 2000), advocacy efforts, and advances in services, particularly the advent of supported employment over the past two decades, have made it possible for many people with developmental disabilities to enter the workforce or to move from sheltered to competitive work [35]. Thus, the high rate of working that we found among members with a developmental disability is not surprising. It is possible that some members with a developmental disability were in sheltered employment, which might also account for the lower earnings of this group.

Psychiatric disabilities are also often associated with impairments that can negatively impact earning potential. People with serious mental illness (SMI) (e.g. schizophrenia) often have cognitive deficits, such as impairments in working memory, verbal learning, psychomotor speed and executive functions, which can compromise the ability to learn new job skills. Cognitive functioning has been consistently found to predict work outcomes among people with SMI [11,27]. Additionally, social skill deficits and other behavioral problems associated with some psychiatric disorders can increase the likelihood that people quit or are fired from a job [1]. The onset of a psychiatric disorder during late adolescence or early adulthood can disrupt formative educational and employment experiences, leaving the person without the skills needed to qualify for jobs beyond the entry-level. Cognitive and social skill deficits and limited education, coupled with the cyclic nature of SMI, can often make it difficult for people to achieve sustained work at higher earning levels. Over the past decade, supported employment (SE) approaches, which began in the developmental disabilities field, have been adopted and adapted by psychiatric rehabilitation researchers and practitioners. Studies have shown that people with SMI receiving SE services achieve superior work outcomes compared to those in standard mental health and vocational rehabilitation services [2,9]. Even in programs consistent with evidence-based practice standards, jobs obtained by SE participants are often part-time and entry-level, paying minimum wage or slightly higher [3,9].

If some types of conditions limit the earning potential of a worker, other types may make it difficult for an individual to enter the workforce. We found CommonHealth members with physical disabilities to be significantly less likely to be working than most other members with disabilities, yet when they worked these members had earnings that were higher than those of most other members. Barriers to entering the workforce for

people with physical disabilities can include the actual and/or perceived severity of physical/mobility impairments the individual experiences, as well as environmental barriers such as physically inaccessible workplaces, a lack of workplace assistive technology or personal assistant services (PAS), and a lack of transportation [6,13,22,34,36].

Overcoming these barriers can be challenging for both individuals with severe physical disabilities and the rehabilitation providers who work with them. Individuals' own perceptions about the severity of their physical limitations and the potential complexity of the workplace accommodations they need may discourage them from pursuing employment [34]. An individual's ability to use certain supports within the workplace, such as PAS, may be limited either because the individual does not have sufficient hours of PAS to meet both home and work needs or because employers are reluctant to accept PAS in the workplace [7]. Inge and colleagues [22] described a small, successful program providing intensive workplace supports to people with severe physical disabilities, including individualized job development, job restructuring and on-site training, job specific assistive technology, and workplace PAS provided by the program. They noted several challenges to making such intensive supports widely available, including overcoming employers' reluctance to hire people with severe physical disabilities and securing flexible and long-term funding for supports.

Not surprisingly, we found that CommonHealth members with co-occurring psychiatric and physical disabilities had the overall poorest work outcomes. These members were the least likely of all to be working, and among workers had earnings that were lower than all other members except those with a developmental disability. Data from national surveys, such as the Survey of Income and Program Participation and the National Health Interview Survey, show that rates of working are lower among people with co-occurring disabilities (e.g. physical and mental) compared to those with a single condition [12,28]. Individuals with co-occurring conditions are more likely than those with a single condition to have poorer overall health and to contend with daily activity limitations across multiple domains (e.g. cognitive, social and physical) that may make it difficult to both enter the workforce and to earn at higher levels [12]. In addition, employment services, which are often delivered by agencies with a mandate to serve a single disability group (e.g. adults with SMI), may not effectively meet the complex support needs of those with co-occurring conditions. Consequently, people with co-occurring conditions may be even less likely to receive employment services than those with only one condition.

It seems clear that disabling conditions differentially create barriers to work participation and higher earnings among people with disabilities. Certainly other barriers exist. A lack of access to employment services, environmental barriers (e.g. lack of transportation) or a lack of understanding of buy-in program regulations – studies show that some buy-in enrollees are unaware that they are in a program that allows them to have higher earnings [15,33] – may all act to restrict work among people with disabilities. However, even when people understand program regulations and may want to work or work more, people with disabilities might choose to restrict work participation and/or earnings. People with physical symptoms such as fatigue or pain may restrict their work activity if they are concerned that the stress of work may lead to an exacerbation of symptoms and relapse [30]. Workers with SMI, particularly those with limited education and earning potential, may determine that a combination of cash benefits (e.g. SSDI) and earnings from part-time work is the most economically advantageous, particularly if they do not want to jeopardize other means-tested benefits such as housing subsidies [8,14,25].

Buy-in programs are designed to provide health care coverage for individuals with disabilities in order to enable them to increase their earnings from work and potentially to reduce their dependency on cash benefit programs [15]. Yet, the relatively low earnings that we saw among most CommonHealth members, and that have been observed in buy-in program around the country, suggest that buy-in programs alone are unlikely to lead to substantial increases in earnings among people with disabilities [15,23]. At this point, buy-in programs may function more to provide needed health care services to those who would not otherwise get them than to be a means to higher earnings and enhanced economic well-being for most people with disabilities [15]. For many individuals with disabilities, work may provide an opportunity for meaningful social participation, rather than a means to enhanced economic well-being or self-sufficiency.

Our findings suggest that self-sufficiency may be an elusive goal for many buy-in program enrollees. Overall, very few people showed work patterns consistent with economic self-sufficiency, with only a third of members working at or near full-time and less than a quarter of members earning over $20,000. Workers with disabilities whose earning potential is com-

promised by limited education and/or skills deficits, who may work in part-time, low-wage jobs, are unlikely to become economically self-sufficient in Massachusetts [29]. Moreover, because jobs held by these workers rarely provide benefits such as employer-based health insurance (EBHI), these individuals are also unlikely to become "medically self-sufficient" [8, 37]. Some CommonHealth members did have earnings at levels consistent with economic self-sufficiency. Twenty-two percent of workers reported earnings over $20,000 in the past year, with 45% of these workers receiving EBHI. Presumably, those with EBHI still choose to purchase Medicaid because they find EBHI insufficient to cover their needs. Many health care services that are especially important to people with disabilities, such as medications, durable medical equipment or personal care attendant services are often not covered, or not adequately covered, by EBHI [10,20]. Thus, even workers who can achieve economic self-sufficiency may find it difficult to achieve medical self-sufficiency. It is likely that many individuals with disabilities will always need some form of public health insurance.

4.1. Limitations

Members' self-report of disabling conditions may differ from the primary condition they would be assigned as part of a disability evaluation, such as those conducted by SSA. We did not attempt to directly match SSA disability categories in the MHEDS questions, nor did we have data available that would have allowed us to confirm members' report of their conditions. However, we have no reason to believe that there would be any systematic bias in reporting among members that would affect our estimates of the associations between type of condition and work outcomes. In addition, survey respondents may have differed from non-respondents with regard to employment, which would have caused us to either over- or underestimate work participation among responding members. We have no reason to believe, however, that any differences between respondents and non-respondents would vary by disabling condition and so would not expect any such differences to change our estimates of the effect of condition on the work outcomes we examined. We also lacked any data on members' past or current use of employment services, and so do not know the role that services may have played in the work outcomes we examined.

Finally, an important consideration in examining relationships among disabling conditions and work outcomes is whether findings from the CommonHealth program generalize to buy-in programs in other states. Among buy-in programs, the CommonHealth program is the only one with two eligibility categories, with one category stipulating a *minimum number of work hours* (40 hours per month). This category has a much stricter definition of work in comparison to programs in other states, where people may work very little but still be in the buy-in program. By including members in both eligibility categories in our analyses we created a sample that more closely matches the populations in other buy-in programs.

5. Conclusions

We found type of disabling condition to be significantly associated with work outcomes among adults with disabilities enrolled in the Massachusetts Medicaid buy-in program. As efforts to evaluate buy-in programs across the country continue, it will be important to consider ways to capture data on enrollees' disabling conditions, since these data are not readily available in Medicaid administrative and claims data. Initial descriptive reports of buy-in programs have focused on changes in enrollees' earnings and earnings over SGA as key outcome indicators [15,38]. However, since at least some buy-in enrollees likely have a limit to their earning potential, other important outcomes, such as continuous program enrollment or job tenure, could be examined.

Our findings suggest that employment is a goal for many people with disabilities. Although the MHEDS provided no specific data that allowed us to examine the impact of services, the relationships that we observed between type of disabling condition and work outcomes suggest that enhancing access to specialized supports and services targeted to the particular needs of people with different types of disabling conditions might be a worthwhile effort, potentially helping to address the disparities in work participation across conditions. Our future research efforts will examine the role that services and supports may play in enhancing participation in work among people with disabilities, to attempt to more directly examine whether (and if so, why) people with disabilities chose to work less than they think they could, and to identify the factors that best allow people with disabilities to enhance their economic well-being.

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