

## **The Changing Medical and Long-Term Care Expenditures of People Who Transition from Institutional Care to Home- and Community-Based Services**

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### **EXECUTIVE SUMMARY**

The Money Follows the Person (MFP) demonstration grant program helps long-term residents of institutions move back to the community. While the statute that established the MFP demonstration program did not set forth cost savings as an explicit goal of the MFP demonstration, a program like MFP may only be sustainable after the demonstration period if MFP participants experience improved quality of life and higher quality of care at no additional expense, compared to what would have occurred had they remained in institutional care or transitioned without the benefits of MFP.

An initial analysis of expenditures finds evidence that total Medicaid and Medicare expenditures decline, sometimes substantially so, during the first 12 months after someone transitions from institutional care to home and community-based services (HCBS). In most instances, the post-transition total expenditures of MFP participants are similar to those of a matched sample of others who transition without the benefit of MFP. One exception is the population with mental illness—MFP participants in this group have higher post-transition total expenditures than other similar people with mental illness. For everyone who transitions, expenditures for LTSS shift from institutional care to HCBS as expected. After the transition, MFP participants have greater average HCBS expenditures compared to other transitioners with similar characteristics, which reflects the additional services MFP programs provide. However, MFP participants typically have lower post-transition Medicaid and Medicare medical care expenditures. Thus, MFP participants' higher HCBS expenditures are partially offset by the higher medical expenditures experienced by other transitioners, except in the population with mental illness where the greater HCBS expenditures of MFP participants appear to drive their overall higher total expenditures during the 12 months after the transition. This evidence suggests that MFP programs may be effective at helping many participants avoid acute care episodes that could lead to a return to institutional care.

## About the Money Follows the Person Demonstration

The MFP demonstration, first authorized by Congress as part of the Deficit Reduction Act of 2005 and then extended by the Patient Protection and Affordable Care Act of 2010, is designed to rebalance state Medicaid long-term care spending from institutional care to home and community-based services. Congress authorized up to \$4 billion in federal funds to support a twofold effort by state Medicaid programs to (1) transition people living in long-term care institutions to homes, apartments, or group homes of four or fewer residents and (2) change state policies so that Medicaid funds for long-term care services and supports can “follow the person” to the setting of his or her choice. MFP is administered by the Centers for Medicare & Medicaid Services (CMS), which initially awarded MFP grants to 30 states and the District of Columbia in 2007 and awarded grants to another 13 states in February 2011 and to 3 more states in 2012. CMS contracted with Mathematica to conduct a comprehensive evaluation of the MFP demonstration and to report the outcomes to Congress.

## INTRODUCTION

The Money Follows the Person (MFP) demonstration grant program focuses on helping long-term residents of institutions move back to the community. Specifically, MFP is for people who have resided at least 90 consecutive days in nursing homes, intermediate care facilities for individuals with intellectual disabilities (ICFs-IID), or hospitals.<sup>1</sup> Before the MFP demonstration, few states had any formal transition program for Medicaid enrollees residing in long-term care facilities. People in these facilities who wanted to transition would have done so on their own, with the assistance of family and friends, or through community-based organizations such as a local Center on Independent Living. The MFP demonstration gave states an opportunity to design and implement formal transition programs and to reach people who would not transition otherwise. It also affords state grantees more flexibility in the types of home- and community-based services (HCBS) offered to participants. As a financial incentive for transitioning more individuals to HCBS, states receive an enhanced federal matching rate for most MFP-paid services. The MFP demonstration is built on the premise that many long-term residents of institutions can live successfully in the community with sufficient supports, helping shift the balance of long-term services and supports (LTSS) systems more toward HCBS.

This report focuses on the medical and long-term care expenditures for Medicaid beneficiaries who transition from institutional to community-based LTSS and how those expenditures change after the transition. A program like MFP may not be considered successful unless it demonstrates that a formal transition program for people in institutional long-term care either generates savings or at least does not increase expenditures for Medicaid programs. This study therefore focuses on whether any of the change in expenditures that occur after the transition can be associated with the MFP demonstration.

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<sup>1</sup> The Deficit Reduction Act of 2005, which established the MFP demonstration, set the length of stay requirement at six months. The Affordable Care Act of 2010 changed that requirement to 90 days not counting Medicare-paid rehabilitation days.

Long-term residents of institutional care facilities are thought to require substantial support to transition to community living. To assist with this type of transition, MFP programs offer participants considerable support for the transition itself, both before the transition occurs and afterwards. The additional services that most states offer are intended to provide MFP participants with the LTSS needed to live in the community successfully. Within the demonstration, most of these one-time or short-duration services are referred to as either demonstration or supplemental services. Examples of demonstration or supplemental services include pre-transition planning, transportation, security or utility deposits, and trial visits in the new community residence. Upon transition, MFP participants are eligible for MFP-paid services for 365 days which also include all the HCBS they would have been eligible for regardless of their participation in MFP. These services are known as qualified HCBS within the demonstration. At the end of their MFP eligibility period, participants continue to receive the Medicaid services for which they are eligible and states are required to maintain the continuity of care for participants. Therefore, most of the MFP demonstration and supplemental services are typically provided around the time of the transition and are of short duration (Peebles and Kehn 2014).

It is well established that Medicaid beneficiaries receiving HCBS have lower long-term care expenditures than those residing in institutions (MACPAC 2014), but it is not clear when these savings occur for people who transition from institutional to community-based care and whether MFP programs influence these savings in some way. Other studies conducted by the national evaluation of MFP indicate that MFP participants, as well as others who transition to HCBS without the benefit of MFP, typically have substantial physical and cognitive care needs that may require more intensive or frequent LTSS than are typically provided to HCBS recipients (Ross et al. 2012). MFP participants' greater needs for HCBS may attenuate the savings realized from the decline in institutional care expenditures, and the additional services provided through MFP programs may further constrain the savings gained from transitioning someone to community living. Furthermore, if the transition is not successful and the enrollee must return to institutional care, any Medicaid savings related to the transition may be short-lived. The ability of MFP programs to prevent or delay reinstitutionalizations will be important to any overall savings associated with the MFP program. Preliminary analyses of reinstitutionalization rates among the first MFP participants suggest that between 3 and 11 percent of participants return to institutional care within six months of the transition, depending on the targeted population, and these reinstitutionalization rates are no different than the rates experienced by others who transitioned without the benefit of the MFP program (Irvin et al. 2012b).

It is also possible that the lower LTSS expenditures may be offset to some extent by increased medical care expenditures, which can result from the less intensive supervision people may receive in the community relative to an institutional setting. Previous work has demonstrated that Medicaid beneficiaries who transition from institutional care to the community are at greater risk for acute medical events that lead to costly hospitalizations (Wysocki et al. 2014). MFP programs and the more intensive services they offer may help to constrain any increase in medical care expenditures that occurs when someone moves to a community residence. Therefore, the effectiveness of MFP should be measured against the experience of those who transition outside the program.

This report aims to answer several questions about the expenditures (medical and LTSS expenditures) of people who transition from institutional care to community-based LTSS. We first determine to what extent total expenditures change after someone transitions to community living. Expenditures are measured over the 12 months before the transition and the 12 months after the transition. Next, we decompose the change in expenditures by assessing how the mix of expenditures for LTSS changes after the transition and how medical care expenditures change. The study also determines whether the MFP demonstration can be associated with any of the changes in expenditures observed. To do this, MFP participants are compared to similar Medicaid beneficiaries who experienced the same transition, but did not participate in the MFP program. These other transitioners suggest what would have happened had the MFP demonstration not been implemented.

The study includes MFP participants who transitioned at any point during 2008 through 2010. The study also includes a comparison group of other Medicaid enrollees who transitioned to HCBS without MFP during the same time period (“other transitioners”).<sup>2</sup> Although we do not know why someone does or does not participate in MFP, we assume the other transitioners fall into three broad groups: (1) those who do not want the assistance of the MFP program because they have adequate support from family and friends, (2) those who lack knowledge about the program because outreach efforts had not reached them, and (3) those who want to move into a community residence that does not qualify for MFP, including most forms of assisted living or a group home of more than four people.<sup>3</sup> In this study, total expenditures include all Medicaid-paid services and Medicare-paid Part A and Part B services (for those eligible for both programs), but excludes Medicaid- or Medicare- state administrative expenditures, paid prescription drugs, and out-of-pocket expenditures. Long-term care expenditures consist of all Medicaid HCBS and institutional long-term care payments, and medical care expenditures are all Medicaid payments not otherwise classified as long-term care expenditures plus all Medicare expenditures for those eligible for Medicare. To assess the effect of MFP on the change in total expenditures after the transition, we used a matching approach to select other transitioners who matched MFP participants on observable demographic characteristics, disability status, pre-transition total expenditures, and, when available, cognitive and functional status based on information available from the nursing home minimum data set (MDS). More details about our methods appear in the Data and Methods appendix.

Because MFP programs transition four broad groups of Medicaid enrollees who have differing care needs, all analyses were performed separately by target population: (1) people age 65 or older who transitioned from nursing homes, (2) people under age 65 with physical

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<sup>2</sup> To address selection bias, we created a second comparison group of people who transitioned in 2006 or 2007—before the MFP demonstration began. The results were similar across the two comparison groups and we only present results based on the contemporaneous group in the body of the report. Full results for both comparison groups are available in the Data and Methods appendix at the end of this report.

<sup>3</sup> By statute, the MFP program allows three types of qualified residences: (1) a home owned by the participant or by a family member, (2) an apartment, or (3) a group home of no more than four unrelated individuals. Only Medicaid enrollees who move to a qualified residence are eligible for the MFP program. Most, but not all, forms of assisted living do not qualify for MFP.

disabilities who transitioned from nursing homes, (3) those with intellectual disabilities who transitioned from ICFs-IID, and (4) those with mental illness. The targeted population with mental illness includes people who transitioned from all types of facilities.<sup>4</sup> More information on data and methods is available in a Data and Methods appendix at the end of this report.

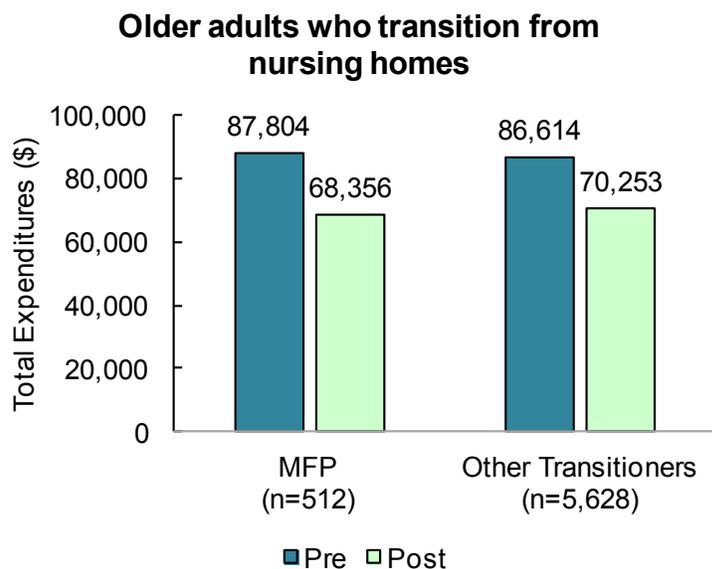
## **HOW DO TOTAL EXPENDITURES CHANGE WHEN SOMEONE TRANSITIONS FROM LONG-TERM INSTITUTIONAL CARE TO HCBS?**

Regardless of the population considered, total expenditures decline after the transition to community living (Figure 1). Expenditures decrease by 15 to 48 percent, depending on the target population. Among MFP participants only, those with intellectual disabilities who transition from ICFs-IID have the largest absolute reduction in total expenditures (\$27,000), and older adult MFP participants who transitioned from nursing homes have the greatest percentage point reduction (22 percent). The decline in total expenditures for MFP participants does not represent the effect of MFP, because those who move to community-based LTSS outside of the MFP program also experience large declines in total expenditures after transitioning. Compared with other transitioners, MFP participants tend to have lower pre-transition total expenditures, suggesting that MFP participants are a select group who may have lower care needs. Thus, any analysis of how MFP may affect post-transition expenditures needs to control for the differences between MFP participants and other transitioners.

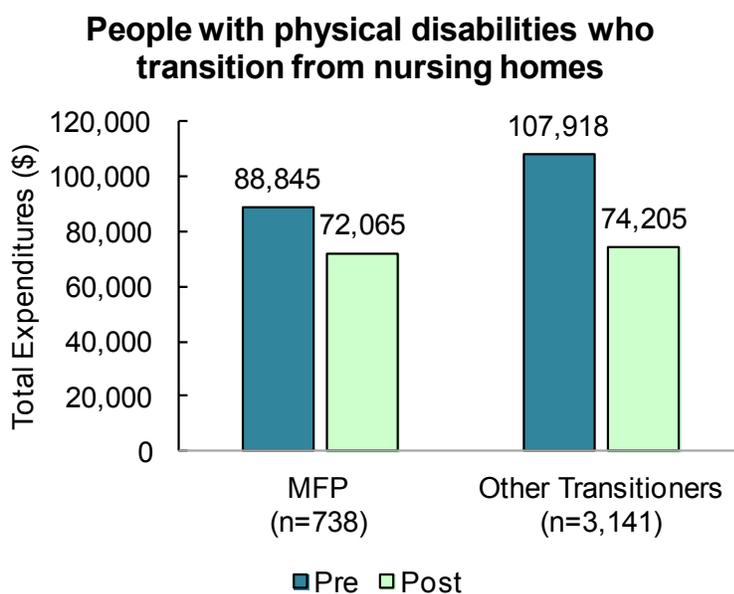
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<sup>4</sup> Compared to earlier studies published by the national evaluation, this study takes a different approach to defining the target populations. Rather than solely relying on the type of institution from which someone transitioned to determine the population classification, we also used diagnosis codes and some procedure codes to identify people with mental illness. As a result, the first three groups defined above comprise people who transitioned from a specific type of institution (nursing home or ICF-IID) and had no evidence of a mental illness in claims records, whereas the fourth group includes all those with a mental illness, regardless of the type of institution they transitioned from. Our new approach reclassifies a substantial number of individuals, but we found that the main results are not particularly sensitive to this reclassification. More information is available in the Data and Methods appendix at the end of this report (see Table 1).

Figure 1. Average total expenditures 12 months before and 12 months after transition for MFP participants and other transitioners, by target population, 2008–2010

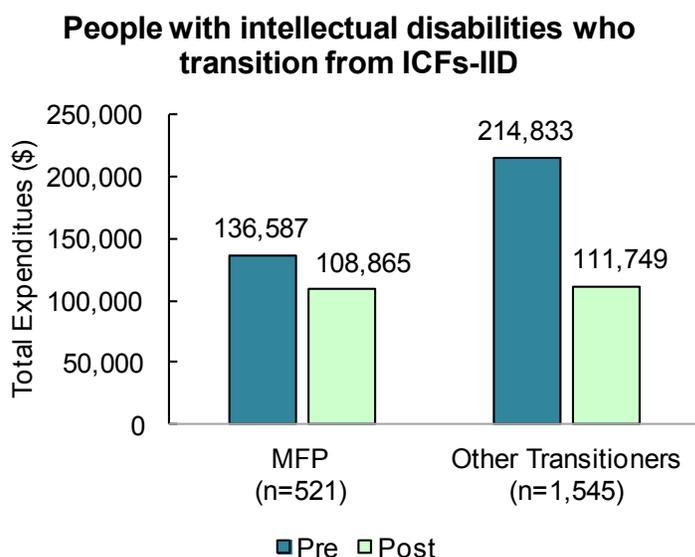


**Older Adults:** Among MFP participants, total expenditures decreased by 22 percent in the year after transition which compares to the 19 percent decline experienced by other transitioners.

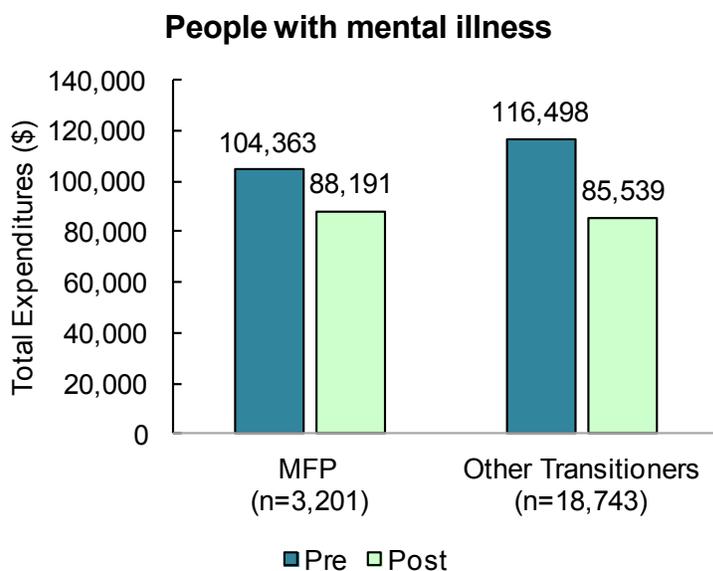


**People with physical disabilities:** Total expenditures decreased by 19 percent for MFP participants and 31 percent for other transitioners in the year after transition. The difference in pre-transition expenditures suggests that MFP participants and other transitioners differ in important ways and these differences need to be controlled for when assessing the effect of MFP on the change in expenditures.

Figure 1 (continued)



**People with intellectual disabilities:** Total expenditures decreased by 20 percent in the year after the transition for MFP participants and 48 percent for other transitioners. The difference in pre-transition expenditures suggests that MFP participants and other transitioners differ in important ways and these differences need to be controlled for when assessing the effect of MFP on the change in expenditures.



**People with mental illness:** Total expenditures decreased by 15 percent in the year after transition for MFP participants and 27 percent for other transitioners. The difference in pre-transition expenditures suggests that MFP participants and other transitioners differ in important ways and these differences need to be controlled for when assessing the effect of MFP on the change in expenditures.

Source: Mathematica analysis of average Medicaid and Medicare expenditures for Medicaid beneficiaries who transitioned from institutional to community-based long-term services and supports from 2008 through 2010.

ICFs-IID = intermediate care facilities for individuals with intellectual disabilities

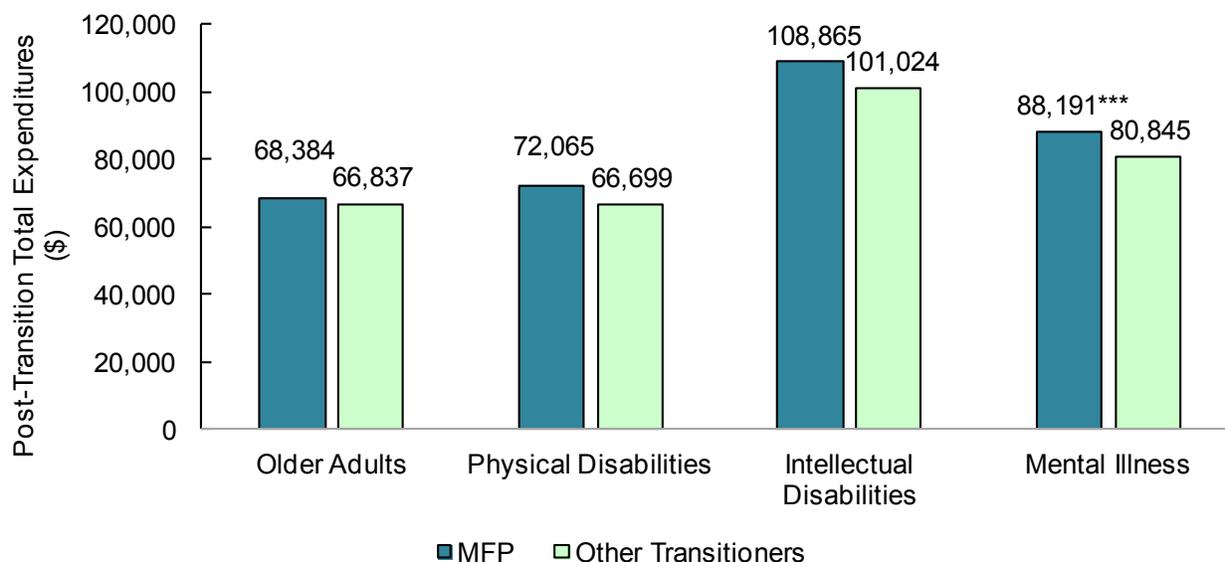
## **WHAT IS THE EFFECT OF MFP ENROLLMENT ON TOTAL EXPENDITURES?**

The data presented in Figure 1 indicate that during the first year after the transition, the total expenditures of MFP participants were similar to those of others who transitioned without the benefit of the MFP program. However, in three of the four targeted populations, other transitioners experienced a larger overall decline in their expenditures because their pre-transition expenditures were greater than those of MFP participants. The difference in the decline was particularly noticeable among beneficiaries with intellectual disabilities who transitioned from ICFs-IID.

Higher total expenditures in the year before the transition may indicate that other transitioners are different from MFP participants; in particular, they may have greater care needs and poorer health status. Basic descriptive information about MFP participants and other transitioners suggests these two groups are different in important ways. For example, MFP participants are less likely to visit the emergency department or have a hospital admission during the year before the transition to the community (see Table 2 in the Data and Methods appendix at the end of this report). As a result, to assess the post-transition expenditures of MFP participants relative to other transitioners, we compared the post-transition expenditures of MFP participants to selected comparison group members who matched MFP participants on an array of demographic characteristics, pre-transition expenditures and service use, and diagnoses, as well as functional assessments for those who had resided in nursing homes.

Based on the matched comparison group, we find that total expenditures for MFP participants after the transition remain similar to the expenditures for other transitioners, except among people with mental illness (Figure 2). MFP participants with mental illness had total post-transition expenditures that were 9 percent greater than those of other transitioners with mental illness.

Figure 2. Average total expenditures during the 12 months after transition to community living for MFP participants and matched samples of other transitioners, by target population, 2008–2010



Source: Mathematica analysis of average Medicaid and Medicare expenditures for Medicaid beneficiaries who transitioned from institutional to community-based long-term services and supports from 2008 through 2010.

Notes: The matched sample of other transitioners is based on a propensity score matching approach described in more detail in the Data and Methods appendix. The sample size for the matched sample is found in Table 3 of the Data and Methods appendix.

ICFs-IID = intermediate care facilities for individuals with intellectual disabilities

\*\*\*Statistically significant difference between MFP participants and other transitioners at the .001 level, two-tailed test.

A decomposition of expenditures is required to understand how the component parts of expenditures (LTSS and medical care) changed after the transition. This decomposition may also shed more light on the effects of MFP on post-transition expenditure patterns.

### HOW DOES THE COMPOSITION OF LTSS EXPENDITURES CHANGE AFTER THE TRANSITION FROM INSTITUTIONAL CARE TO HCBS?

LTSS expenditures—which include expenditures for both institutional care and HCBS—declined during the 12 months after people transition to the community. Across all groups, expenditures for institutional care fell substantially while HCBS expenditures increased (Figure 3). MFP participants typically had higher pre-transition institutional care expenditures than other transitioners (the one exception is LTSS expenditures for people with intellectual disabilities) and had lower post-transition institutional care expenditures. Post-transition institutional care expenditures were not zero because some beneficiaries returned to institutional settings within 12 months of their transition to the community. Conversely, HCBS expenditures increased after the

transition and MFP participants had higher post-transition HCBS expenditures than other transitioners, consistent with the additional HCBS provided by MFP programs.

Figure 3. Average LTSS expenditures during the 12 months before and 12 months after the transition to community living for MFP participants and other transitioners, by target population, 2008–2010

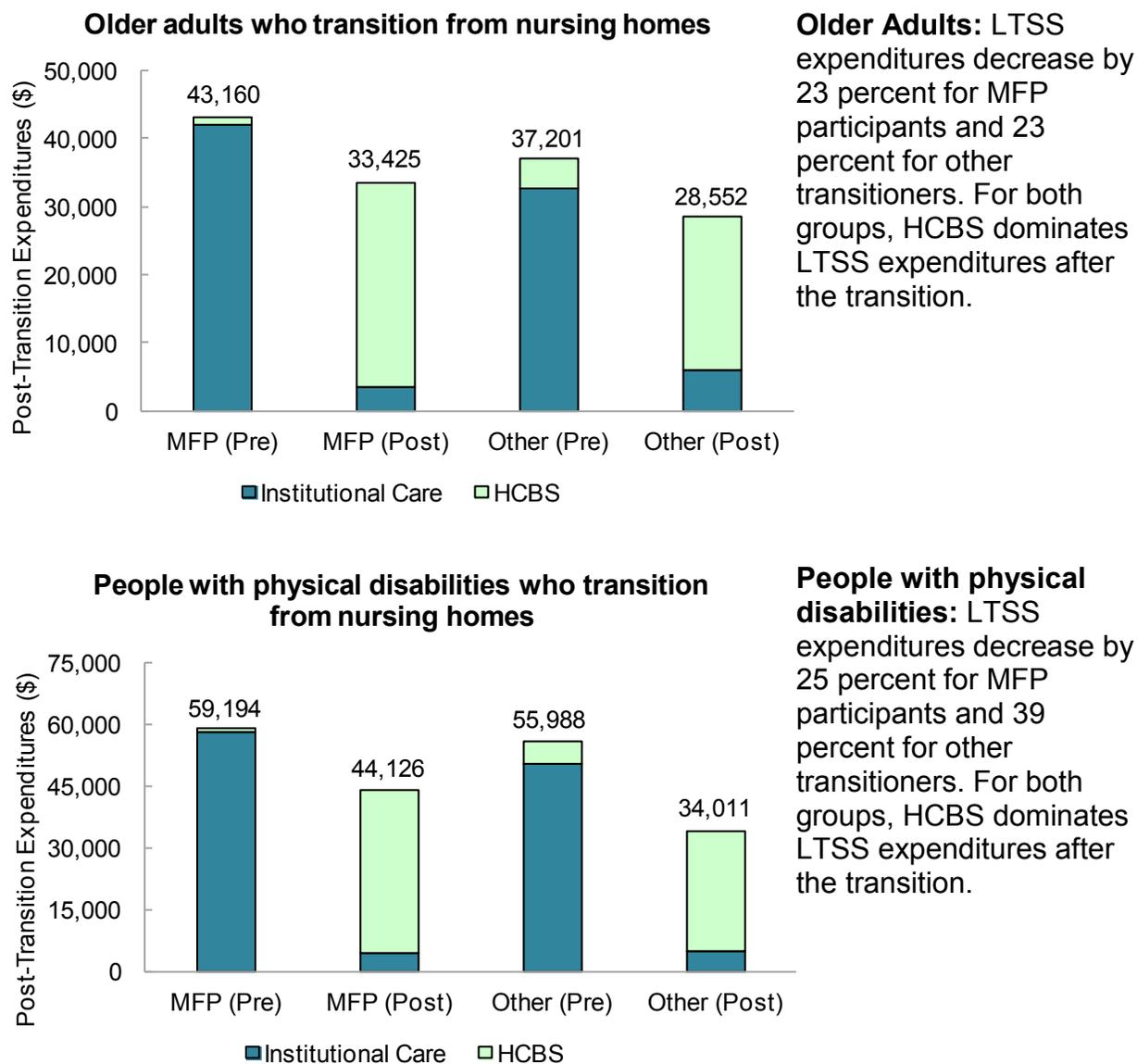
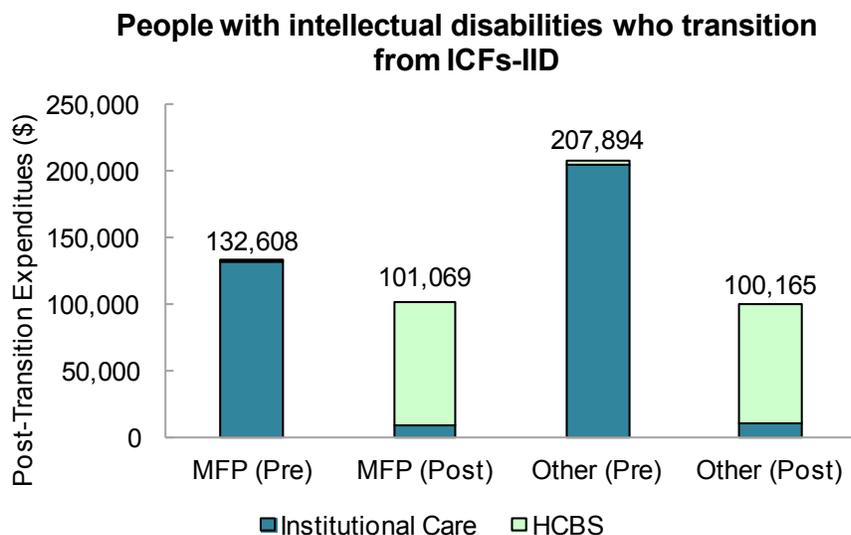
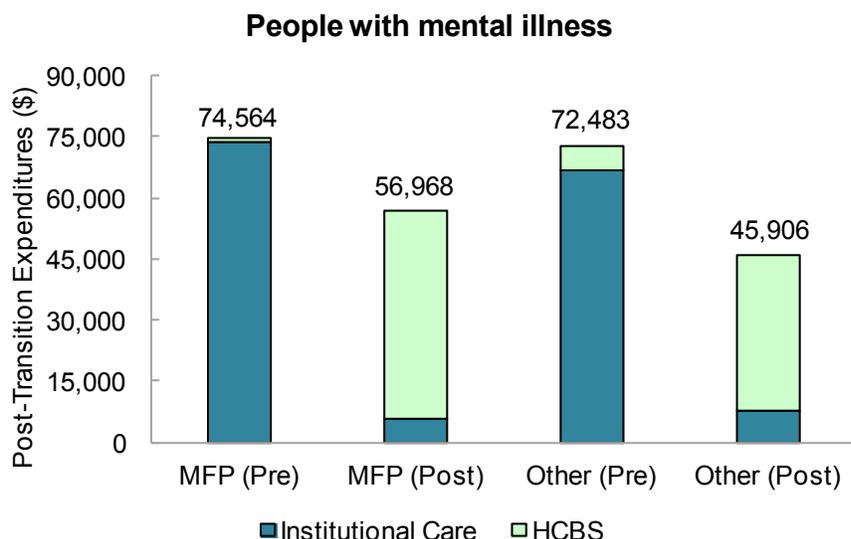


Figure 3 (continued)



**People with intellectual disabilities:** LTSS expenditures decrease by 24 percent for MFP participants and 52 percent for other transitioners. For both groups, HCBS dominates LTSS expenditures after the transition.



**People with mental illness:** LTSS expenditures decrease by 24 percent for MFP participants and 37 percent for other transitioners. For both groups, HCBS dominates LTSS expenditures after the transition.

Source: Mathematica analysis of average Medicaid and Medicare expenditures during the 12 month periods before and after transition for Medicaid beneficiaries who transitioned from institutional to community-based long-term services and supports from 2008 through 2010.

HCBS = home and community-based services; LTSS = long-term services and supports; ICFs-IID = intermediate care facilities for individuals with intellectual disabilities

When we compared the post-transition expenditures of MFP participants to those of a matched sample of other transitioners we found that MFP was associated with higher expenditures for LTSS during the first year after transition (Figure 4). This pattern is true for all target populations and is attributable to the higher HCBS expenditures for MFP participants. MFP participants receive \$10,000 to \$13,000 of additional HCBS relative to other transitioners, which reflects a key design feature of the MFP program which is to provide participants with the additional supports they need for a successful transition.

Figure 4. Average LTSS expenditures during the 12 months after transition to the community for MFP participants and matched samples of other transitioners, by target population, 2008–2010

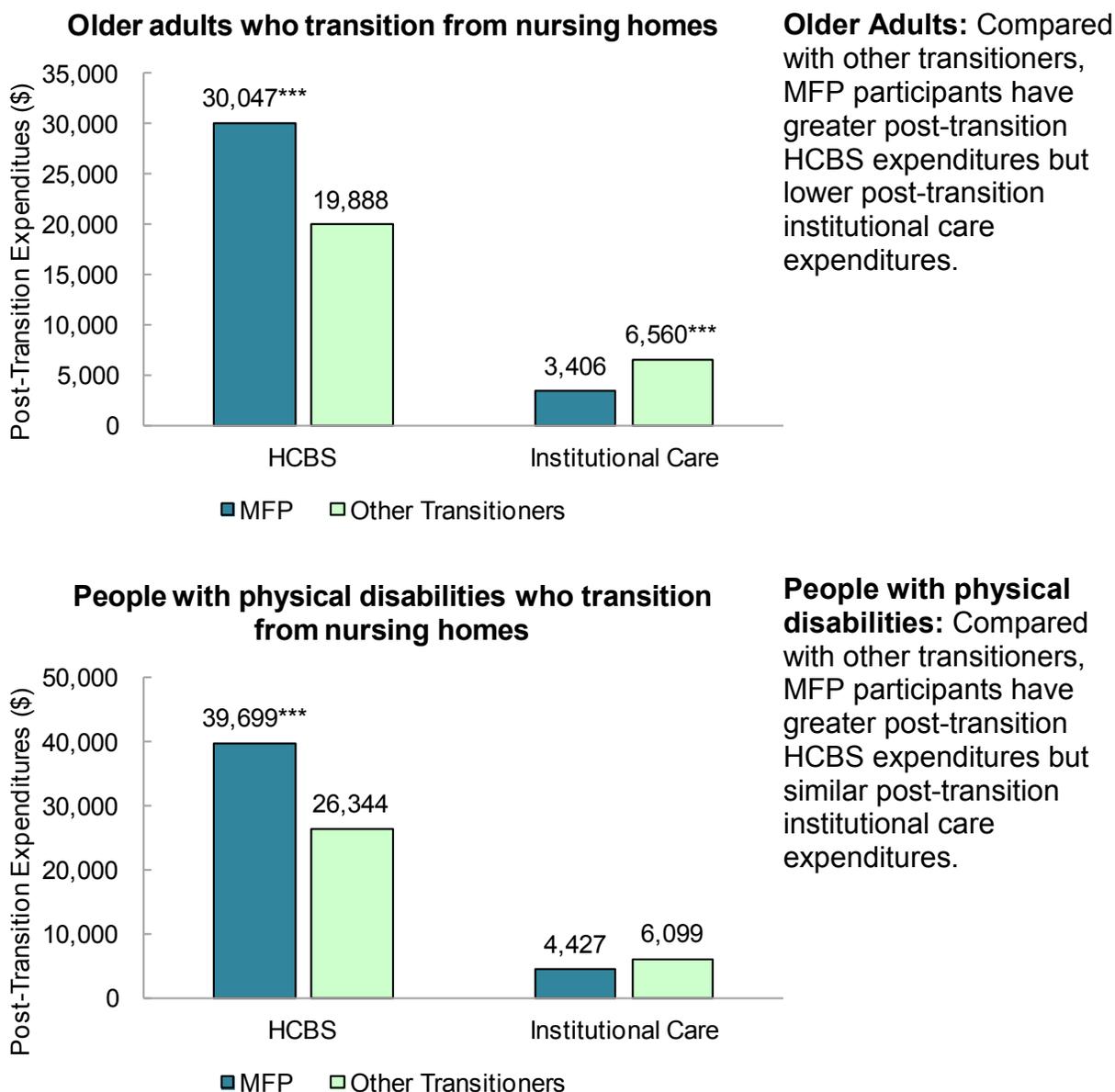
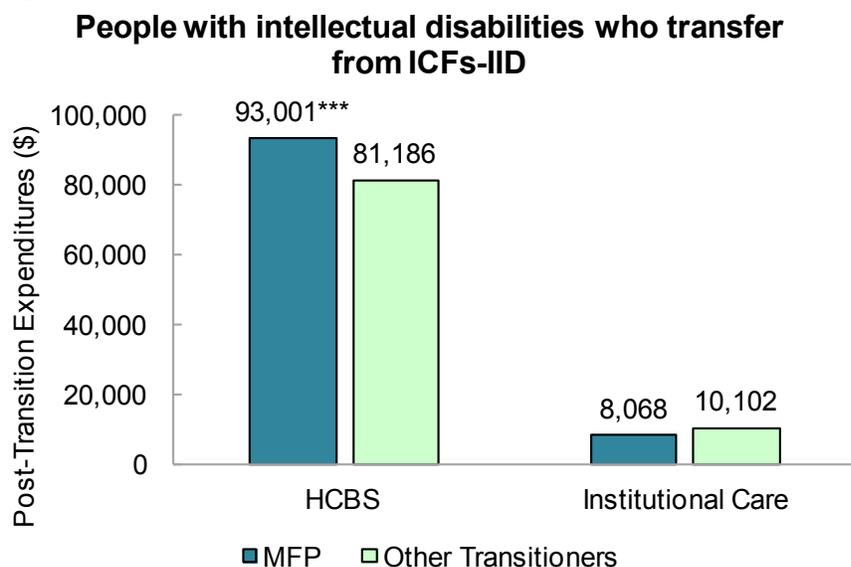
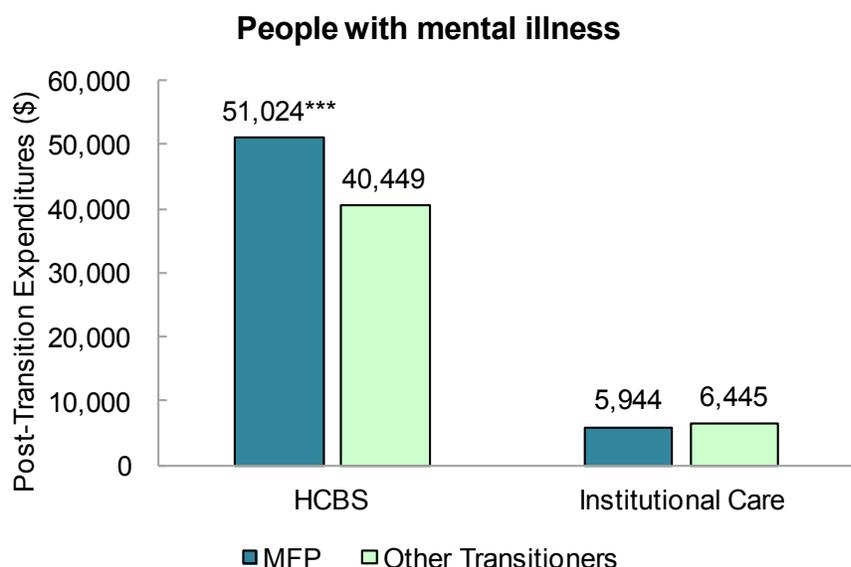


Figure 4 (continued)



**People with intellectual disabilities:** Compared with other transitioners, MFP participants have greater post-transition HCBS expenditures but similar post-transition institutional care expenditures.



**People with mental illness:** Compared with other transitioners, MFP participants have greater post-transition HCBS expenditures but similar post-transition institutional care expenditures.

Source: Mathematica analysis of average Medicaid and Medicare expenditures for Medicaid beneficiaries who transitioned from institutional to community-based long-term services and supports from 2008 through 2010.

Notes: The matched sample of other transitions is based on a propensity score matching approach described in more detail in the Data and Methods appendix. The sample size for the matched sample is found in Table 3 of the Data and Methods appendix.

HCBS = home and community-based services; LTSS = long-term services and supports; ICFs-IID = intermediate care facilities for individuals with intellectual disabilities

\*\*\*Statistically significant difference between MFP participants and other transitioners at the .001 level, two-tailed test.

## **DO MEDICAL CARE EXPENDITURES INCREASE AFTER THE TRANSITION FROM INSTITUTIONAL CARE TO HCBS?**

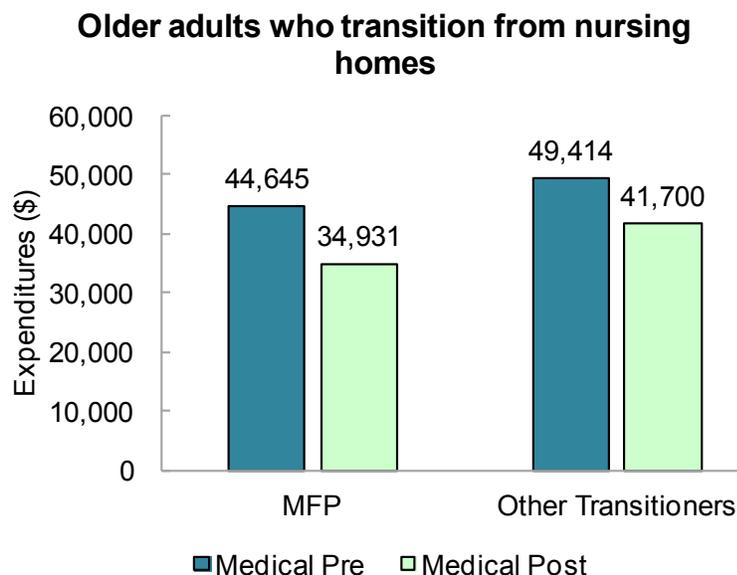
The other component of total expenditures includes medical care expenditures for all other Medicaid and Medicare services not classified as LTSS. Medical care expenditures are likely to change as well when someone transitions from institutional to community based LTSS. These expenditures may decline as someone's health status and functioning improves and they become more independent or the decline may result from lack of access if they have difficulty getting around the community and become isolated. Alternatively, medical expenditures may increase if a program like MFP helps people become more aware of their needs and increases their access to the care they need. However, some people who receive 24-hour care and supervision over an extended period may experience an increase in their medical care costs when they transition to a community residence if they experience more falls and accidents or infections and dehydration.

The data indicate that whether medical care expenditures increase after the transition depends on the target population (Figure 5). In this analysis, medical expenditures include all Medicaid expenditures not otherwise classified as expenditures for LTSS and all Medicare expenditures for beneficiaries enrolled in both programs (excluding prescription drugs).<sup>5</sup> The Medicare expenditures include among other things expenditures for outpatient services, inpatient care, and skilled nursing facility care. Those who transitioned from nursing homes, both older adults and younger residents with physical disabilities, had lower medical care expenditures after the transition. Conversely, medical care expenditures increased after the transition for those with intellectual disabilities. The change in medical care expenditures was more mixed for those with mental illness, increasing slightly among MFP participants and decreasing among other transitioners. It is hard to know why these differences exist across the different population groups without examining the different categories of medical care expenditures (such as expenditures for inpatient care, emergency room services, or physician visits), which was outside the scope of this study.

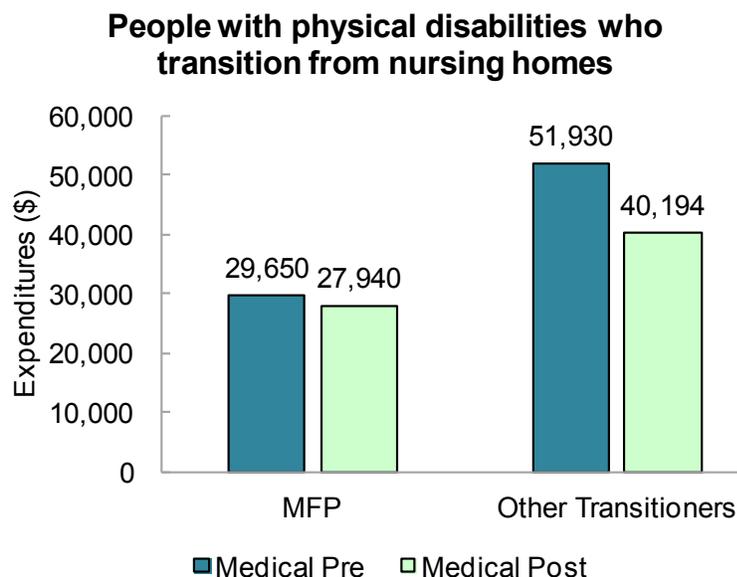
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<sup>5</sup> Among MFP participants, about 72 percent are dually eligible for Medicaid and Medicare. Almost all participants 65 and older are eligible for Medicare, as are approximately 54 percent of those under age 65 who transition from nursing homes, and 68 percent of those who transition from ICFs-IID (data not shown).

Figure 5. Average medical care expenditures during the 12 months before and 12 months after transition for MFP participants and other transitioners, by target population, 2008–2010

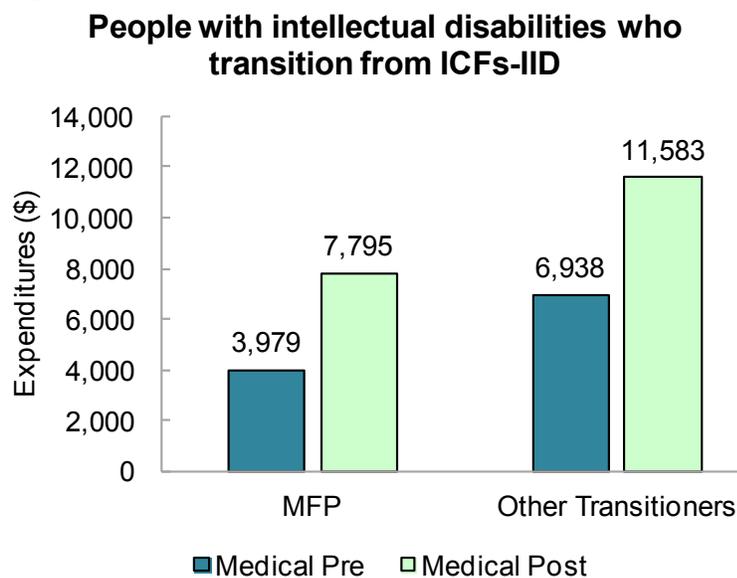


**Older Adults:** After returning to the community, medical care expenditures decline for MFP participants and other transitioners by 22 and 16 percent, respectively. The difference in the pre-transition expenditures suggests that MFP participants and other transitioners differ in important ways and these differences need to be controlled for when assessing the effect of MFP on changes in medical care expenditures.

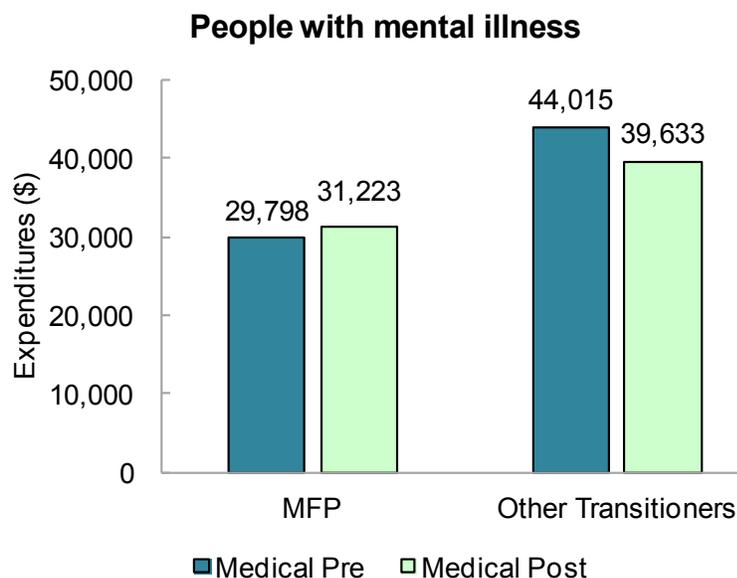


**People with physical disabilities:** Medical care expenditures decline for MFP participants and other transitioners by 6 and 23 percent, respectively, after returning to the community. The difference in the pre-transition expenditures suggests that MFP participants and other transitioners differ in important ways and these differences need to be controlled for when assessing the effect of MFP on changes in medical care expenditures.

Figure 5 (continued)



**People with intellectual disabilities:** Medical care expenditures increased for MFP participants and other transitioners by 96 and 67 percent, respectively, after returning to the community. The difference in the pre-transition expenditures suggests that MFP participants and other transitioners differ in important ways and these differences need to be controlled for when assessing the effect of MFP on changes in medical care expenditures.



**People with mental illness:** Medical care expenditures increased by 5 percent for MFP participants and decreased by 10 percent for other transitioners, after returning to the community. The difference in the pre-transition expenditures suggests that MFP participants and other transitioners differ in important ways and these differences need to be controlled for when assessing the effect of MFP on changes in medical care expenditures.

Source: Mathematica analysis of average Medicaid and Medicare expenditures for Medicaid beneficiaries who transitioned from institutional to community-based long-term services and supports from 2008 through 2010.

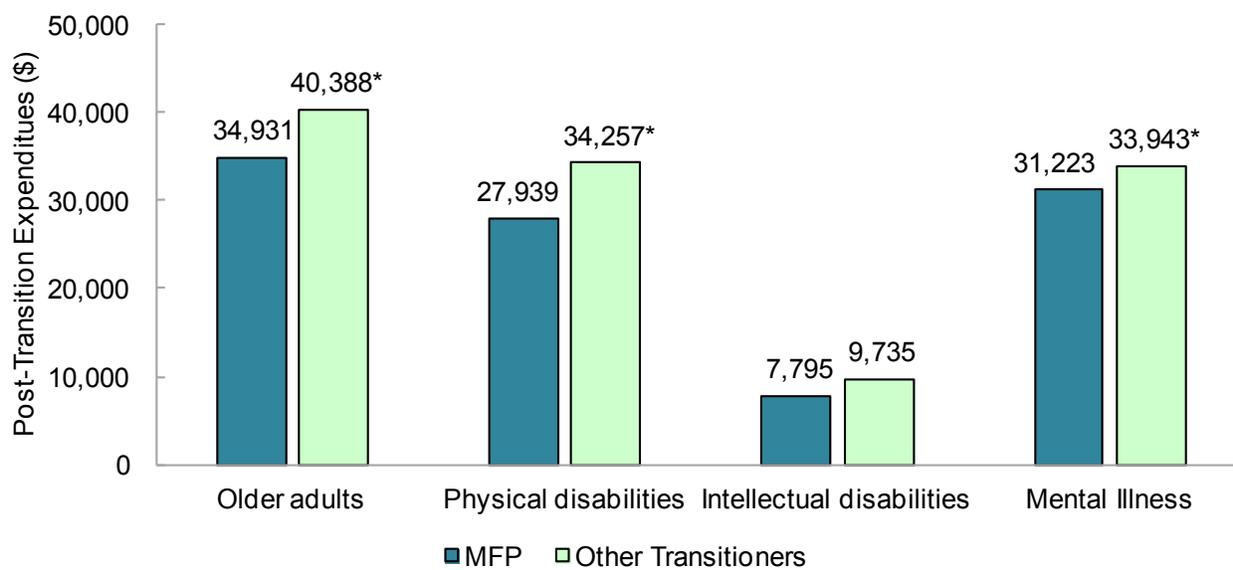
Notes: Medical expenditures include Medicaid-paid services not classified as LTSS expenditures and all Medicare expenditures.

ICFs-IID = intermediate care facilities for individuals with intellectual disabilities

When we compared the post-transition medical care expenditures of MFP participants to those of the matched samples of other transitioners, we found that MFP was associated with lower medical care expenditures after the transition for three of the four target populations

(Figure 6). MFP participants who were older adults, had physical disabilities, or had mental illness had significantly lower post-transition medical expenditures compared to others who transitioned without MFP, but medical care expenditures were the same for MFP participants with intellectual disabilities relative to other transitioners in this target population.

Figure 6. Average medical care expenditures during the 12 months after transition to community living for MFP participants and matched samples of other transitioners, by target population, 2008–2010



Source: Mathematica analysis of average Medicaid and Medicare expenditures for Medicaid beneficiaries who transitioned from institutional to community-based long-term services and supports from 2008 through 2010.

Notes: The matched sample of other transitions is based on a propensity score matching approach described in more detail in the Data and Methods appendix. The sample size for the matched sample is found in Table 3 of the Data and Methods appendix.

ICFs-IID = intermediate care facilities for individuals with intellectual disabilities

\*Statistically significant difference between MFP participants and other transitions at the .05 level, two-tailed test.

## DISCUSSION

The preliminary evidence indicates that the total expenditures of Medicaid beneficiaries residing in institutions for long periods of time declined after they transition to community living and HCBS. The MFP program does not seem to influence someone’s total expenditures during the first 12 months after transition, except for people with mental illness where MFP seems to be associated with increased post-transition total expenditures. Across all target populations, MFP participants clearly received more HCBS than other transitioners did, and their post-transition institutional care expenditures appear to be lower, but not significantly so, than those for other transitioners. MFP participants’ greater post-transition HCBS expenditures are partially offset by the higher medical care expenditures that other transitioners experience. The one exception is for

MFP participants with mental illness whose greater post-transition HCBS expenditures appear to drive their overall higher total expenditures during the 12 months after the transition. This evidence suggests that while MFP programs provide more HCBS by design, they may also be effective at helping many participants avoid acute care episodes that could lead to a return to institutional care.

To our knowledge, this is the first study of total expenditures for individuals who transition from institutional- to community-based LTSS. Those who transition may need substantial HCBS to live successfully in the community, but the greater spending on HCBS is, on average, partially offset by savings in institutional care costs, at least among those populations represented in this study. In addition, the savings in LTSS expenditures is not offset by increased medical care to treat acute events such as falls, accidents, infections, or dehydration, and it is possible that the additional HCBS received by MFP participants may help to avoid some of these acute medical events. The results for people with mental illness are particularly important in this regard if the additional HCBS provided by MFP programs is improving access to the treatment services they need. These early results suggest that on average, people who transition are well prepared and have sufficient supports in the community to live there successfully, at least for the first 12 months.

Because the literature on the total expenditures for people who transition among LTSS settings is sparse, we also developed estimates of annual total expenditures for long-term residents of institutions who do not transition and long-term users of HCBS. These estimates help us benchmark the results presented above. In Figure 7 we include annual total expenditures for Medicaid beneficiaries who lived for at least two consecutive years in an institutional setting, as well as annual total expenditures for people who used HCBS for at least two consecutive years. In most transition groups considered, pre-transition total expenditures are often greater than for those who remain in institution care for at least two years. After the transition total expenditures frequently, but not always, fall below those of this benchmark groups but they continue to exceed those who have been using HCBS for at least two consecutive years. A more controlled analysis is needed to fully understand the differences in total expenditures between those who transition and those who do not.

Figure 7. Average total expenditures during the 12 months before and 12 months after the transition to community living for MFP participants and other transitioners compared to continuous LTSS users, by target population, 2008-2010

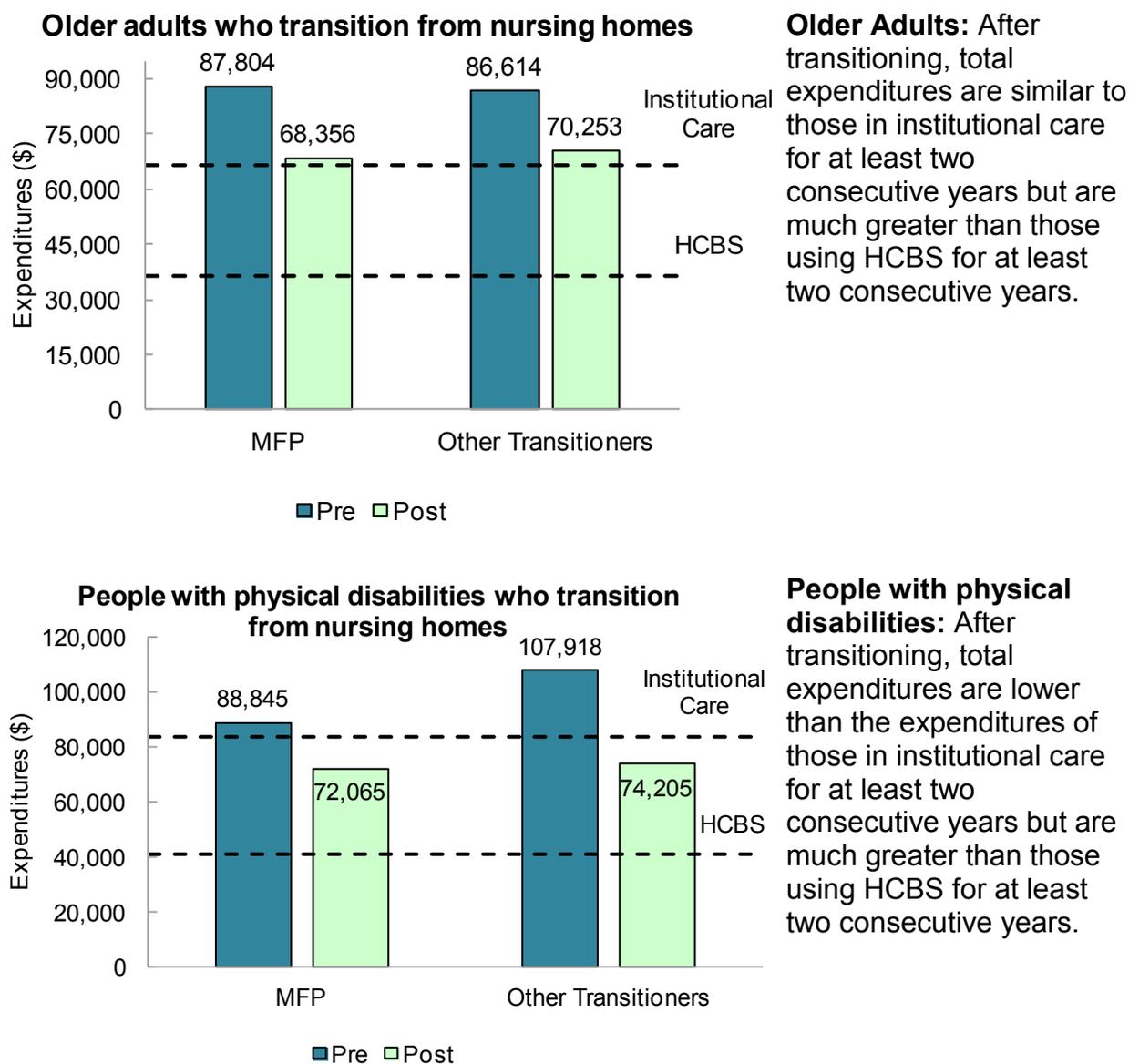
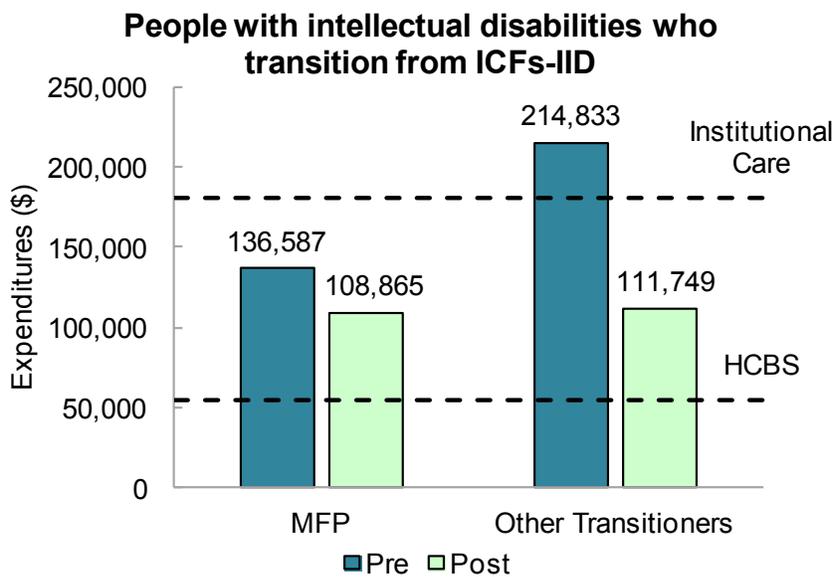
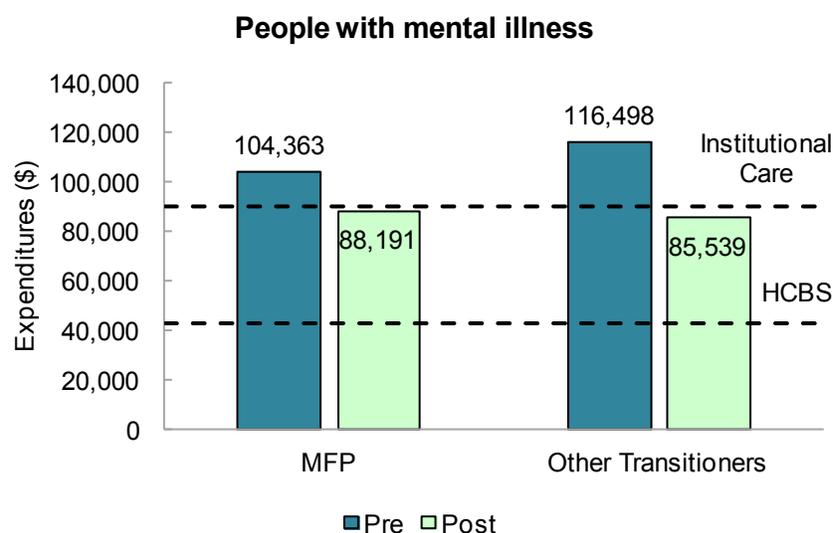


Figure 7 (continued)



**People with intellectual disabilities:** After transitioning, total expenditures are lower than the expenditures of those in institutional care for at least two consecutive years but are much greater than those using HCBS for at least two consecutive years.



**People with mental illness:** After transitioning, total expenditures are similar to the expenditures of those in institutional care for at least two consecutive years but are much greater than those using HCBS for at least two consecutive years.

Source: Mathematica analysis of average Medicaid and Medicare expenditures for Medicaid beneficiaries who transitioned from institutional to community-based long-term services and supports from 2008 through 2010.

Notes: Dotted lines represent the benchmarks for people in institutional care for at least two consecutive years and people who use home- and community-based services (HCBS) for at least two consecutive years. The long-term LTSS users are defined in the Data and Methods appendix.

ICFs-IID = intermediate care facilities for individuals with intellectual disabilities; HCBS = Home- and community-based services

This study has several important limitations. It only assessed the total expenditures during the first 12 months after the transition and not over a longer period of time. As a result, the post-transition expenditures may disproportionately reflect short-term events and adjustments

stemming from a transition and may not capture what expenditures may look like in subsequent years. The relative difference between the post-transition total expenditures and the annual expenditures of long-term HCBS users (see Figure 7 above) suggest that annual total expenditures of transitioners may decline further after the first year of community living.

The additional supportive services MFP participants receive for the transition during the first 12 months reflects one category of expenditures that would not be incurred in subsequent years. These additional services are by design and are mainly delivered near the time of transition (Peebles and Kehn 2014). Thus, they represent an investment in making the transition as successful as possible. However, some people may experience increasing medical care expenditures over time if community-based LTSS cannot prevent or slow the progression of their health conditions. Expenditures may also increase if those who transitioned eventually return to institutional care. More research is needed to determine how the balance between LTSS and medical care expenditures changes over a longer period of time.

This study only included people who lived for at least a year after the transition. Because the analyses did not consider people who died within 12 months of the transition, the results are not representative for the full range of people who transition, some of whom are near the end of life. While few MFP participants receive hospice care through MFP, at least 10 percent die within 12 months of transitioning to the community (Irvin et al. 2012b). This exclusion is important because total expenditures frequently escalate toward the end of life and some terminally-ill patients in institutional care would prefer to spend their final months in a community setting.

The results may be influenced in part by how we developed the four target populations. We identified the four population groups in this study using claims data, and our method for identifying people with mental illness differed from how we identified the other three groups. The establishment of the group with mental illness was based primarily on diagnosis codes found in claims records, as well as a small set of procedure codes. This is an imprecise approach to identifying this population, but represents what was feasible given the information available to the national evaluation at the time of the study. For example, data from the Preadmission Screening and Resident Review (PASRR) that Medicaid programs need to conduct before placing someone in long-term nursing home care was not available. It means that we may have missed some people with mental illness. The other three groups were identified by the type of institution from which they transitioned: nursing homes or ICFs-IID. When either nursing home or ICF-IID residents were identified as having a mental illness, they were classified in the population with mental illness. Initially, we were concerned that this approach over-classified people residing in nursing homes or ICFs-IID as having a mental illness. However, the results based on groups defined solely on the type of institution from which they transitioned were very similar to the results presented in this report. Any errors introduced by our approach to identifying the four population groups seem to have little effect on the overall conclusions. Future work will try to incorporate information about mental illness from the nursing home Minimum Data Set or the PASRR assessments to identify people with mental illness.

While the expenditure measures only capture costs incurred by the Medicaid and Medicare programs, some important categories of costs are excluded. For example, we did not include prescription drug expenditures, which may be considerable for some, particularly for those with mental illness. The exclusion of prescription drug expenditures is one reason why we consider

the analyses presented in this report as preliminary and future work will include this key category of expenditures. In general, our analysis tries to capture spending on medical and long-term care services, but there are other important expenses for those transitioning to the community that should be considered. The institutional care expenditures incurred by Medicaid programs include room and board costs, which cannot be teased out of the data. As a result, institutional care expenditures are not necessarily comparable to HCBS expenditures because they do not include state or federal costs associated providing subsidized housing for those who transition to the community. Based on the number of MFP participants that transition to apartments, we hypothesize that roughly 33 percent of MFP participants qualify for housing vouchers (Morris et al. 2014). Medicaid beneficiaries have low incomes, and many are likely to benefit from housing vouchers and supported housing programs. Similarly, total expenditures once in the community do not include subsidies provided by the Food Stamp program or nutrition and other supportive services provided by local Area Agencies on Aging or Centers for Independent Living. Lastly, there are other administrative costs associated with Medicaid institutional care and HCBS that are outside of the scope of this study. It is unlikely we will be able to include these administrative costs in future work because of the difficulty and resources required to obtain and link these data with Medicaid and Medicare administrative data.

Our approach to estimating the effect of MFP relied on samples of other transitioners who were matched to MFP participants on a wide range of observable characteristics, including pre-transition expenditures, utilization, and functional assessments when available. However, it is possible that our estimates do not adequately control for important differences between MFP participants and the comparison group. Our inability to control for characteristics that may matter, such as general health status or the availability of informal supports from friends and family, may bias our estimates. Of particular concern is whether MFP programs tend to transition people with lower care needs compared to those who transition without the program. This issue is likely to affect the analyses of populations with intellectual disabilities or mental illness because information on functional and cognitive status is unavailable, whereas assessment information from the nursing home Minimum Data Set is available for people transitioning from nursing homes. The inability to control for important factors may explain in part why some results, such as those for medical care expenditures, vary by targeted population.

For a complete assessment of how MFP programs are affecting overall state LTSS expenditure patterns, the analysis also needs to account for MFP's effect on transition rates from institutional care. The results presented in this report could be used to build these types of estimates if other evidence suggested that MFP does not increase transition rates. However, earlier work by the national evaluation indicates that during the first years of the MFP demonstration, state MFP programs were associated with higher transition rates for people residing in ICFs-IID (Irvin et al. 2012b). Now that more years of data are available and MFP programs have matured, the national evaluation will again assess whether the demonstration is associated with higher transition rates from nursing homes and other types of institutional settings.

The MFP demonstration is an ongoing program that is not scheduled to end for several more years. The national evaluation will continue to track the progress of this program, and the analyses presented in this reports and earlier ones will be repeated with more years of data, larger sample sizes, additional comparison groups, and considerations for the effect of MFP on

transition rates. To determine the long-term effects of MFP, the evaluation will assess expenditures over a longer post-transition period than was possible for this study. We will also explore more carefully the relationship between expenditures and use of services—particularly reinstitutionalizations and transitions to inpatient and subacute care—to better understand the drivers behind the changing expenditure profile of people who experience a transition in care settings for LTSS.

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## DATA AND METHODS APPENDIX

### DATA

Our analyses used Medicare and Medicaid claims and enrollment files, Nursing Facility Minimum Data Set (MDS) assessment data, and Money Follows the Person (MFP) claims program participation files. These files allowed us to identify Medicaid beneficiaries who transitioned from institutional care to HCBS at any point from 2008 to 2010, beneficiaries who enrolled in the MFP program, expenditures in the 12 months before and after the transition, and characteristics to perform a propensity score matching analysis. We included Medicare claims from the Medicare Provider Analysis and Review (MedPAR), Carrier, Home Health, Outpatient, Home Health Agency, and Durable Medical Equipment files, Medicaid claims from the Medicaid Analytic eXtract (MAX) Other Therapy (which includes claims for outpatient, laboratory, home health, and premium payments), Long-term Care, and Inpatient files, and claims for MFP-paid HCBS from the MFP services file. Enrollment and demographic information came from the Medicare Master Beneficiary Summary File, the MAX Person Summary file, and the MFP Program Participants file.

### IDENTIFYING MFP PARTICIPANTS AND OTHER TRANSITIONERS

We identified MFP transitioners by using the MFP national evaluation enrollment records from 29 states with active grants at some point in 2008 through 2010.<sup>1</sup> Only those MFP participants with at least one MFP-paid HCBS claim were included in this study.

The comparison group of Medicaid beneficiaries who transitioned from institutional care to HCBS outside of the MFP program during the same 2008 through 2010 period was selected from all states except for Maine because of unavailable MAX data. In brief, the procedure to define a transition identified Medicaid beneficiaries with at least 3 contiguous months of institutional long-term care claims followed by a claim for HCBS (or record of HCBS waiver enrollment) in the month of transition, or in either of the next two calendar months. A detailed description for identifying transitions outside of the MFP program is available elsewhere.<sup>2</sup>

### TARGET POPULATIONS

We stratify our analysis based on the target population category for all transitioners. In general, target populations are intended to capture the care needs of transitioners and reflect populations targeted by MFP programs. In the past, we relied solely on a Medicaid beneficiary's age and the institution from which they transitioned from. This study takes a different approach by also using diagnosis and procedure codes to identify people with mental illness.

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<sup>1</sup> States with MFP transitioners during the 2008 to 2010 period include Arkansas, California, Connecticut, District of Columbia, Delaware, Georgia, Iowa, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maryland, Michigan, Missouri, North Carolina, North Dakota, Nebraska, New Hampshire, New Jersey, New York, Ohio, Oklahoma, Oregon, Pennsylvania, Texas, Virginia, Washington, Wisconsin.

<sup>2</sup> The Money Follows the Person 2011 Annual Report (Irvin et al. 2012b) describes the methods for identifying transitions on Page 71.

Transitioners were divided into four populations: (1) older adults over the age of 64 who transition from nursing homes, (2) people with physical disabilities under the age of 65 who transition from nursing homes, (3) people with intellectual disabilities who transition from ICFs-IID, and (4) people with mental illness. People with mental illness include those transitioning from psychiatric facilities or those from other facilities who had a claim with relevant diagnostic, procedure, revenue center, or provider codes for mental illness during the 24-month observation period (12 months before or after transition). If an individual could be classified into more than one category, the mental illness group received priority.

Table 1 shows the sample size of the MFP participants and other transitioners and the distribution of each target population. MFP participants are a much smaller group of transitioners during the 2008 to 2010 period. For all transitioners, the new mental illness definition substantially reduces the number of people categorized as being in the older adults, physical disabilities, or intellectual disabilities target populations compared to the old definition that relied solely the type of institution from which they transitioned from. The proportion of people re-categorized into the mental illness group was similar for MFP and other transitioners.

Table 1. Comparison of two approaches to defining the target populations

Target Population	Definition used in this paper		Old definition <sup>a</sup>	
	MFP Participants 2008 to 2010	Transitioners from 2008 to 2010	MFP Participants 2008 to 2010	Transitioners from 2008 to 2010
Number of people in unmatched sample	4,972	29,057	4,972	29,057
Older adults	10%	19%	26%	47%
Physical disabilities	15%	11%	42%	32%
Intellectual disabilities	10%	5%	31%	16%
Mental illness	64%	65%	--	--
People who transitioned from psychiatric facilities <sup>b</sup>	--	--	0%	5%

Source: Mathematica analysis of MFP transitioners from 29 states and Medicaid beneficiaries who transition outside of the program from 49 states from 2008 through 2010.

<sup>a</sup> Previously, target populations in the MFP evaluation did not consider mental illness, which increased the elderly, physically disabled, and intellectually disabled populations.

<sup>b</sup> Using the old definition, the only way to identify individuals with mental illness was if they transitioned from a psychiatric facility.

## EXCLUSIONS

We excluded people who transitioned for the following reasons: (1) enrollment in Medicare or Medicaid managed care, (2) no record of MFP claims for HCBS during the MFP enrollment period, (3) record of Medicaid-paid hospice services in the month of transition or in either of the next two calendar months, (4) death within the first 12 months after transition, and (5) more than a 1-month gap in Medicaid enrollment in the 12 months before or after transition.

## EXPENDITURES

The expenditures analysis takes the perspective of Medicaid and Medicare. There are three expenditure categories of interest: (1) total, (2) long-term services and supports (LTSS), and (3) medical care. Total expenditures include all Medicaid-paid services and Medicare-paid Part A and Part B services (for those dually-eligible for Medicare and Medicaid). Medicaid- or Medicare-paid prescription drugs were excluded. LTSS expenditures consist of all HCBS and institutional long-term care payments made by Medicaid. Medical care expenditures are all Medicaid payments not otherwise classified as LTSS expenditures plus all Medicare expenditures. Expenditures were defined using the “amount paid” field on Medicare and Medicaid claims, with one exception: we summed the Medicare payment amount and the pass through amount for inpatient and skilled nursing facility claims. Based on the year of transition, we inflated all expenditures by the annual medical care consumer price index to represent 2011 United States dollars. We did not consider housing grants, out-of-pocket expenditures, or any administrative expenses. Because we identified transitions between 2008 and 2010, the pre- and post-transition expenditures may reach into 2007 or 2011, respectively.

## ANALYSIS

The key methodological challenge in estimating the effects of MFP program participation on expenditures is approximating the counterfactual – the outcomes that would have happened in the absence of the program. Those who transition outside of the MFP program are a non-random, select group of transitioners that are most likely different from their MFP counterparts. Table 2 shows select pre-transition characteristics for MFP participants and those who transition outside of the program. Compared to those who transition outside of the program, MFP participants tend to be younger, male, and have less medical care utilization and use before transitioning to the community. Descriptive statistics shown in Figure 1 also indicate that MFP participants have lower pre-transition total expenditures.

Table 2. Pre-transition differences between MFP participants and other transitioners

Characteristic	Older Adults		Physical Disabilities		Intellectual Disabilities		Mental Illness	
	MFP	Other Transitioners	MFP	Other Transitioners	MFP	Other Transitioners	MFP	Other Transitioners
Age (mean)	77.7	80.6	49.4	50.2	44.3	42.5	54.0	58.9
Female (%)	66	73	40	49	36	39	49	59
White (%)	38	37	47	46	29	26	32	31
ED visits								
With hospitalization (%)	44	52	33	45	11	10	32	44
Without hospitalization	48	57	31	32	17	21	40	50
Hospitalization (%)	55	66	48	65	14	16	44	58

Source: Mathematica analysis of MFP transitioners from 29 states and Medicaid beneficiaries who transition outside of the program from 49 states from 2008 through 2010.

Note: The propensity score matching used more variables than those listed in the table. To ease presentation, we did not include pre-transition total expenditures in this table because it is already included in the body of the paper. To reduce the dimensions of the table, we did not include number of CDPS conditions or the cognitive and functional status information from Minimum Data Set assessments. These descriptive statistics are available upon request.

CDPS = Chronic Disability Payment System; ED = emergency department.

To find a group of transitioners that resemble the sample of MFP participants, we used a matching procedure commonly referred to as propensity score matching (Rosenbaum and Rubin 1983). Matching allows for an approximation of an experimental design by assuming that the decision to participate is random conditional on a set of observable characteristics.

There are multiple approaches to using propensity scores, and we used the single nearest neighbor approach with replacement. The propensity score is estimated from a logistic regression fit on our analytic sample that includes both MFP participants and other transitioners. The dependent variable is MFP participation, and the independent variables include factors that are hypothesized to be related to MFP program enrollment. The following independent variables are defined using information in the 12-months before returning to the community for MFP participants and other transitioners:

- Total expenditures, emergency department, and inpatient care use in the year prior to transition
- Age, gender, and race/ethnicity
- Number of conditions flagged in the Chronic Illness & Disability Payment System (Kronick et al. 2000)<sup>3</sup>
- Level of care, cognitive performance score scale, and activities of daily living from the MDS nursing home assessments

The models were fit separately for each target population. We included all variables in the models for older adults and persons with physical disabilities. Because the MDS data were unavailable from those who transition from ICFs-IID, we excluded the MDS variables in the models for people with intellectual disabilities. We fit two models for people with mental illness: one for those who transition from a nursing home and had available MDS data and another for those without MDS data because they transition from a different type of facility. Transitioners with missing values for any of the propensity score model variables were dropped from analysis. The propensity score is the model-predicted probability of transitioning to the community through the MFP program, given the observable characteristics included in each model.

For each MFP participant, the matching process finds the comparison group member that has the closest propensity score based on an absolute difference. The matching process is conducted with replacement, so potential comparison group members can serve as the counterfactual for more than one participant. In the event that a comparison group member is matched more than once, their observation is weighted proportionate to the number of times they were sampled. While we match comparison group members to MFP participants, all analyses are performed on the group-level.

The final matched analysis compares the mean of expenditures for the matched sample to those for MFP participants. Table 3 shows the sample size of the matched group of other

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<sup>3</sup> We adapted the Chronic Illness and Disability Payment System (CDPS) software developed by researchers at the University of California, San Diego to construct indicators of conditions relevant to our study population. The CDPS is a hierarchical diagnostic classification system developed to describe the severity of illness among Medicaid beneficiaries

transitioners. Because we matched with replacement, there are fewer other transitioners included than MFP participants. However, the final analyses weights the other transitioner group to make the sample size equivalent to that of the MFP participants. In our sample, we determined that matching was successful because the differences in observable characteristics between MFP participants and other transitioners disappeared for all but two covariates, and for those where there was a difference, the relationship was weak and the mean was similar. The propensity score estimation, matching, and testing algorithms were implemented using Stata's `pscore` command (Becker and Ichino 2000) and Leuven and Sianesi's (2003) `psmatch2` and `ptest` routines.

Table 3. Samples size of each target population in matched analyses

Target Population	Before Matching		Matched Sample	
	MFP Participants 2008 to 2010	Transitioners from 2008 to 2010	MFP Participants 2008 to 2010	Transitioners from 2008 to 2010
Older adults	512	5,628	511	474
Physical disabilities	738	3,141	738	603
Intellectual disabilities	521	1,545	518	404
Mental illness	3,201	18,743	3,201	2,749

Source: Mathematica analysis of MFP transitioners from 29 states and Medicaid beneficiaries who transition outside of the program from 49 states from 2008 through 2010.

Note: The matching process selected those who transitioned outside of the MFP with the closest absolute difference in propensity score with replacement. The final analysis weights the sample of matched transitioners to equal the overall sample of MFP participants included in the matching analysis.

## BENCHMARK ESTIMATES FOR LONG-TERM LTSS USERS

We created two groups of Medicaid beneficiaries who use long-term care for two consecutive years as benchmarks—Medicaid beneficiaries who reside in institutional long-term care (ILTC) facilities and those who use HCBS. The continuous ILTC group consists of Medicaid beneficiaries with 24 months of ILTC claims. Because of noise in administrative data, we allowed a one-month gap in ILTC claims in the first or second year of the 24-month period provided that it was not the first or last month. For individuals with more than 24 months of continuous enrollment, we randomly assigned a pseudo transition date to index the two-year period.

The continuous HCBS group is constructed similarly to the continuous ILTC group. We identified Medicaid beneficiaries with 24 consecutive months with an HCBS claim or waiver enrollment are used to define continuous enrollment. We allowed a one-month gap in HCBS claims or waiver enrollment in the first or second year of the 24-month period provided that it

was not the first or last month. For individuals with more than 24 months of continuous enrollment, we randomly assigned a pseudo transition date to index the two-year period.

### SENSITIVITY ANALYSIS

Our comparison group included Medicare beneficiaries who transition to the community outside of the MFP program during the same 2008 to 2010 time period, but we also conducted our analyses using Medicaid beneficiaries who transitioned from 2006 to 2007 before the MFP program began (“Pre-MFP Transitioners”). In general, using either comparison group leads us to the same general conclusions (Table 4). The conclusions depend on the comparison group for persons with intellectual disabilities who transition from ICFs-IID and people with mental illness. When using the sample of Medicaid beneficiaries who transitioned during the 2006 to 2007 period as the comparator, MFP participants with intellectual disabilities have significantly higher total expenditures after transition, and this is driven by post-transition spending on HCBS; this difference was not significant when using the group of transitioners from 2008 to 2010. MFP participants with mental illness have greater total expenditures regardless of what comparison group is used, but the relationship is not as strong when using the group of transitioners from 2006 to 2007. This difference is due to lower HCBS spending and greater savings on medical care.

Table 4. Differences in Average Post-Transition Expenditures for MFP participants compared to Medicaid beneficiaries who transitioned before or outside of the program

Target Population and Type of Expenditure	MFP	Difference between MFP and Matched Sample 2006-2007	Difference between Matched Sample 2008-2010
<b>Older Adults</b>			
Total	68,384	-3,817	1,479
HCBS	30,047	8,214***	10,143***
Institutional care	3,406	-4,638***	-3,154***
Medical Care	34,931	-7,393*	-5,509*
<b>Physical Disabilities</b>			
Total	72,065	6,029	5,366
HCBS	39,699	9,549***	13,355***
Institutional care	4,427	-637	-1,671
Medical Care	27,939	-2,883	-6,317*
<b>Intellectual Disabilities</b>			
Total	108,865	13,604***	7,865
HCBS	93,001	13,220***	11,856**
Institutional care	8,068	2,447	-2,092
Medical Care	7,795	-2,062	-1,899

Table 4 (continued)

Target Population and Type of Expenditure	MFP	Difference between MFP and Matched Sample 2006-2007	Difference between Matched Sample 2008-2010
Mental Illness			
Total	88,191	3,565*	7,346***
HCBS	51,024	8,209***	10,574***
Institutional care	5,944	-1,121*	-501
Medical Care	31,223	-3,511**	-2,721*

Source: Mathematica analysis of MFP transitioners from 29 states and Medicaid beneficiaries who transition outside of the program from 49 states from 2008 through 2010.

Note: All expenditures are post-transition means from propensity score matching analysis. Negative values indicate lower expenditures for MFP.

HCBS = Home- and Community-Based Services

\*Significantly different from zero at the .05 level, two-tailed test.

\*\*Significantly different from zero at the .01 level, two-tailed test.

\*\*\*Significantly different from zero at the .001 level, two-tailed test.