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# Pay For Success And Population Health: Early Results From Eleven Projects Reveal Challenges And Promise

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**ABSTRACT** Pay for success (PFS) is a type of social impact investing that uses private capital to finance proven prevention programs that help a government reduce public expenditures or achieve greater value. We conducted an analysis of the first eleven PFS projects in the United States to investigate the potential of PFS as a strategy for financing and disseminating interventions aimed at improving population health and health equity. The PFS approach has significant potential for bringing private-sector resources to interventions regarding social determinants of health. Nonetheless, a number of challenges remain, including structuring PFS initiatives so that optimal prevention benefits can be achieved and ensuring that PFS interventions and evaluation designs are based on rigorous research principles. In addition, increased policy attention regarding key PFS payout issues is needed, including the “wrong pockets” problem and legal barriers to using federal Medicaid funds as an investor payout source.

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**P**ay for success (PFS), sometimes referred to as “social impact bonds,” is a type of social impact investing that finances proven prevention programs with the potential to help a government save money or achieve greater value for public expenditures.<sup>1</sup> In the PFS model, interventions are implemented using funding from private investors or self-funded service providers, who recover or receive a return on their investment from a government payer only if specific measurable outcomes are achieved.<sup>2</sup> The PFS model has the potential to increase the use of private-sector capital and philanthropic resources to address social problems using evidence-based interventions. As such, it represents innovation in cross-sector public-private partnerships.

More than fifty PFS projects, in a variety of areas including health, have been implemented worldwide, with the first launched in the United Kingdom in 2010. As of July 2016, eleven PFS

projects had been initiated in the United States.<sup>3</sup> A number of additional projects are in development or under exploration, many with technical assistance and seed funding from both public and private sources.<sup>4</sup>

There is tremendous excitement regarding the potential for PFS to spread and scale effective interventions that address societal problems, including in the important area of population health improvement.<sup>5,6</sup> *Population health* is defined as the health outcomes of individuals within a specified group based on geography and other characteristics, and the social distribution of those outcomes, their determinants, and the interventions and policies that link the two.<sup>7</sup> Using PFS to increase investments in prevention activities that address the social and economic determinants of health could augment and extend government, health care system, and community efforts to improve population health outcomes and to reduce racial/ethnic and other social disparities in health.

There is a strong tendency to “medicalize” health and in turn implement public policy responses focused on financial and geographic access to personal health care services.<sup>8</sup> However, health policy approaches to population health improvement also require a strong focus on the social and economic determinants of health, since health care is just one of many factors that influence the distribution of health and illness. The PFS model offers strong incentives for non-governmental entities to finance, spread, and scale interventions that address these upstream determinants of health, such as economic security, educational attainment, housing, and nutrition. As Ian Galloway noted, PFS can “increase investment in upstream nonmedical determinants of health, which is welcome. But the long-term implication may be more interesting: the seeding of a new market that values health, not just health care.”<sup>9</sup> The vision here is that PFS can increase attention to and investment in the social rather than medical determinants of health by creating new, attractive avenues for private investments in programs and services that both improve population health outcomes and allow governmental entities to achieve greater value and efficiency in the allocation of public resources.

Through an analysis of the first eleven PFS projects in the United States, we investigated the potential of PFS to finance and disseminate interventions that could contribute to improving population health. We identified four key challenges and some associated recommendations for the growth of PFS as a strategy for improving population health and health equity.

### Study Data And Methods

We conducted a landscape analysis (a systematic description and critical assessment) of the first eleven pay-for-success projects launched or announced in the United States. We describe and analyze the following characteristics of the projects: the intervention, its target population, and relevance to population health; investors and amounts; level of government involved and payout source; service delivery agency; payment structure and terms; evidence base for the intervention; outcome evaluation design; and available results.<sup>10</sup> There is already a significant amount of information about these projects in the public domain.<sup>11-13</sup> Information for our analysis was gathered from multiple public sources, augmented by key-informant interviews.

We restricted our analysis to projects meeting a common technical definition of *pay for success* that includes the potential for an end payout from the public sector. This restriction excluded

a number of current projects that use private-sector capital or philanthropic resources to fund interventions by public programs under performance-based contracts that do not include the government as the end payer (for example, Medicaid managed care organizations).

Each PFS intervention was assessed on its relevance to the World Health Organization’s conceptual framework for the social determinants of health. This framework posits that inequities in the health and well-being of individuals within populations are determined by structural factors such as socioeconomic and political contexts and by individuals’ socioeconomic position (education, income, occupation). These in turn influence a broad set of intermediary social determinants including material circumstances or conditions of living such as food security, housing, physical environment exposures and safety, and labor and work conditions; behaviors and biological factors; and psychosocial factors such as stress processes, social support, and optimism.<sup>14</sup>

### Study Results

**PROJECTS** The first eleven pay-for-success projects were launched or announced in nine states between September 2012 and February 2016. The main levels of government involved were the state in six projects, the county in two projects, and the city in three projects. The social problems being addressed in the projects included recidivism after incarceration ( $n = 3$ ), homelessness ( $n = 3$ ), homelessness and foster care ( $n = 1$ ), early childhood education ( $n = 2$ ), maternal and child health ( $n = 1$ ), and family instability stemming from substance abuse ( $n = 1$ ). Exhibit 1 lists these projects and the outcomes against which project success is measured.

Two of the projects have health status or a health care outcome as the key measure of success. The South Carolina Nurse-Family Partnership ties success payments to reductions in preterm birth, childhood emergency department and hospital use, and increased birth spacing. The Connecticut Family Stability Project ties payments to reductions in substance abuse and social welfare outcomes for family members.

While only two projects have explicit health-related outcomes, all eleven of the launched PFS projects address either a “structural” or an “intermediary” social determinant of health. Four projects address structural determinants of socioeconomic position, such as education, income, and employment. This includes two projects focused on early childhood education and two projects attempting to prevent recidivism to correctional facilities by increasing employment

**EXHIBIT 1**

**Key elements of the first eleven pay-for-success projects in the United States**

<b>Project title (date launched or announced)</b>	<b>Issue area</b>	<b>Target population</b>	<b>Outcome metric</b>	<b>Level and social determinant of health targeted<sup>a</sup></b>
New York City Adolescent Behavioral Learning Experience (ABLE) Project (9/2012)	Recidivism	Males ages 16–18 at Rikers Island Correctional Facility	Recidivism bed days	Intermediary determinant: psychosocial and behavioral factors
Utah High Quality Preschool Program (8/2013)	Early childhood education	Low-income preschoolers with extremely low vocabulary test scores	Special education utilization grades K–6	Structural determinant of socioeconomic position: education
Increasing Employment and Improving Public Safety project, NY State (9/2013)	Recidivism	Formerly incarcerated individuals at high risk for recidivism	Employment Transitional jobs Recidivism	Structural determinant of socioeconomic position: employment
Massachusetts Juvenile Justice Pay for Success Initiative (1/2014)	Recidivism	Males ages 17–23 on probation or exiting the juvenile justice system	Jail bed days Job readiness Employment	Structural determinant of socioeconomic position: employment
Child-Parent Center Pay for Success initiative, Chicago, IL (10/2014)	Early childhood education	Low-income preschoolers	Special education use Kindergarten readiness Third-grade reading level	Structural determinant of socioeconomic position: education
Massachusetts Chronic Individual Homelessness Pay for Success Initiative (12/2014)	Homelessness	Chronically homeless, high-cost users of emergency services	Housing for one year	Intermediary determinant: material condition of housing
Partnering for Family Success Program, Cuyahoga County, OH (12/2014)	Homelessness, child welfare	Homeless families with a child in foster care	Foster care placement days	Intermediary determinant: material condition of housing
Project Welcome Home, Santa Clara County, CA (6/2015)	Homelessness	Chronically homeless, high-cost users of county services	Months of stable tenancy	Intermediary determinant: material condition of housing
Housing to Health Initiative, City of Denver, CO (2/2016) <sup>b</sup>	Homelessness	Homeless individuals who are high-cost users of the city's emergency services	Jail bed days Housing stability	Intermediary determinant: material condition of housing
South Carolina Nurse-Family Partnership (2/2016) <sup>b</sup>	Maternal and child health	Low-income first-time mothers	Preterm births ED/hospital use Birth spacing First-time mothers served	Intermediary determinant: psychosocial and behavioral factors
Connecticut Family Stability Project (2/2016) <sup>b</sup>	Family stability, substance abuse	Families struggling with a substance use disorder, with children age 6 or younger	Out-of-home placements Social welfare referrals Reduction in substance abuse	Intermediary determinant: psychosocial and behavioral factors

**SOURCE** Authors' analysis. **NOTE** ED is emergency department. <sup>a</sup>Social determinants of health are modeled after the World Health Organization's (WHO's) conceptual framework. The WHO framework posits that the health of an individual is influenced by structural determinants, including socioeconomic position (education, income, occupation), which in turn influence a broad set of intermediary determinants, including material circumstances such as housing, behaviors, biological factors, and psychosocial factors. <sup>b</sup>Date publicly announced.

and educational opportunities. Four projects address material circumstances as an intermediary social determinant of health by providing housing with supportive social services.

The three remaining projects focus on intermediary behavioral and psychosocial factors. These are a cognitive behavioral therapy intervention to reduce recidivism, a home-visiting

education and psychosocial support intervention for first-time pregnant mothers, and a family-based recovery and parent-child attachment program for families dealing with substance abuse.

**INVESTORS** A variety of investors are involved with PFS projects in the United States, including investment banks, foundations and philanthro-

pies, trusts, nonprofit organizations, and groups of private individual investors. Exhibit 2 shows the projects' investment details. Every project has more than one type of investor involved, including a number of partnerships between banks and philanthropic organizations. Private investment amounts range from \$1.1 million to \$21.3 million, reflecting variation in intervention costs, the number of participants, and

some projects being split into phases.

Payers come from all levels of government—city, county, state, and federal. In four of the PFS initiatives, a specific government department or agency is named as the payer (for example, the New York City Department of Corrections and the South Carolina Department of Health and Human Services). To date, the federal government, through competitive grants awarded to

**EXHIBIT 2**

**Investment characteristics of the first eleven pay-for-success projects in the United States**

Project title	Investors	Investment amount	Government payer
New York City Adolescent Behavioral Learning Experience Project	Goldman Sachs Urban Investment Group, Bloomberg Philanthropies	\$9.6 million	New York City Department of Corrections
Utah High Quality Preschool Program	Goldman Sachs Urban Investment Group, Pritzker Family Foundation	\$1.1 million for initial cohort; \$7 million total	Salt Lake County for initial cohort, State of Utah
Increasing Employment and Improving Public Safety project, NY State	Rockefeller Foundation, Laura and John Arnold Foundation, individual funders	\$13.5 million	State of New York, US Department of Labor Workforce Innovation Fund grant
Massachusetts Juvenile Justice Pay for Success Initiative	Goldman Sachs Social Impact Fund, Kresge Foundation Living Cities Catalyst Fund, Laura and John Arnold Foundation, New Profit, Boston Foundation	\$21.3 million	Commonwealth of Massachusetts, US Department of Labor Workforce Innovation Fund grant
Child-Parent Center Pay for Success initiative, Chicago, IL	Goldman Sachs Social Impact Fund, Northern Trust Company, Pritzker Family Foundation, Finnegan Family Foundation	\$16.9 million	City of Chicago, Chicago public schools
Massachusetts Chronic Individual Homelessness Pay for Success Initiative	Corporation for Supportive Housing, United Way of Massachusetts Bay and Merrimack Valley, Santander Bank	\$3.5 million	Commonwealth of Massachusetts, including MassHealth (combined Medicaid and Children's Health Insurance Program) and the Division of Public Housing and Rental Assistance
Partnering for Family Success Program, Cuyahoga County, OH	Reinvestment Fund, George Gund Foundation, Cleveland Foundation, Nonprofit Finance Fund, Sisters of Charity Foundation of Cleveland, Laura and John Arnold Foundation	\$4 million	Cuyahoga County, Ohio
Project Welcome Home, Santa Clara County, CA	Reinvestment Fund, Corporation for Supportive Housing, Sobrato Family Foundation, California Endowment, HealthTrust, James Irvine Foundation, Google, Laura and John Arnold Foundation	\$6.9 million	Santa Clara County, California
Housing to Health Initiative, City of Denver, CO	Walton Family Foundation, Piton Foundation, Northern Trust Company, Laura and John Arnold Foundation, Living Cities Blended, Catalyst Fund, Denver Foundation, Nonprofit Finance Fund, Social Innovation Fund of the Corporation for National and Community Service, Kaiser Permanente, Rose Community Foundation	\$8.6 million	City and County of Denver, Colorado
South Carolina Nurse-Family Partnership	BlueCross BlueShield of South Carolina Foundation, Duke Endowment, Boeing Company, Greenville County First Steps, Laura and John Arnold Foundation, Department of Health and Human Services through Medicaid waiver, private funders	\$17 million	State of South Carolina
Connecticut Family Stability Project	In development	\$12.5 million	Connecticut Department of Families and Children

**SOURCE** Authors' analysis of public sources (see Notes 11-13 in text).

# A prerequisite for any PFS project should be a robust scientific evidence base for intervention effectiveness in the target population.

states by the Department of Labor, has committed to being one of the back-end payers in two PFS projects.<sup>15</sup>

**INTERVENTIONS** Many descriptions of PFS emphasize the need for the intervention to have strong scientific evidence with regard to both impact and cost savings, although this has not always been the case in practice.<sup>16</sup> Four of the interventions have supporting evidence from two or more randomized controlled trials; two have evidence from a single randomized controlled trial; and the remaining five have evidence from quasi-experimental designs, pilot studies, or observational analysis of administrative data.<sup>11</sup> In addition, cost-benefit analyses demonstrating that the intervention actually saves money is strong for only two interventions (the Child-Parent Center and the South Carolina Nurse-Family Partnership)<sup>17,18</sup> and is suggestive for supportive housing interventions for the chronically homeless.<sup>19</sup> Seven of the research designs being used to evaluate the PFS interventions are experimental.

**PAYOUTS** Three PFS projects in the United States have reached a payout decision point. The New York City Adolescent Behavioral Learning Experience (ABLE) Project did not have a demonstrated impact on recidivism and thus was terminated in 2015 without a payout, while the Utah High Quality Preschool Program and the Child-Parent Center intervention in Chicago have each resulted in one payment thus far. The 2016 payout in the Chicago PFS project is encouraging for the field. However, there are concerns about key components of the other two PFS projects.

The ABLE intervention used a type of cognitive behavior therapy called moral reconnection therapy (MRT) that focuses on decision making, personal responsibility, and social skills. This PFS project was designed to transplant an MRT in-

tervention that had been evaluated in other populations to a program for male inmates ages 16–18 attending school in the Rikers Island jail. The fact that the intervention had no demonstrable impact on recidivism is disappointing but not surprising, given the current state of evidence regarding MRT and recidivism.

A 2008 Department of Health and Human Services review of the quality of research supporting MRT and recidivism scored it a 1.9 out of 4.0, with implementation fidelity and confounding variables in the evaluation being of particular concern.<sup>20</sup> Our examination of the extant evidence base for MRT also revealed a large number of weaknesses, including that most prior studies used MRT in combination with other interventions, not alone as implemented in the ABLE Project.<sup>21,22</sup> A number of meta-analyses have been referenced in support of the ABLE intervention, although most are meta-analyses of cognitive behavioral therapy, not MRT; others are technically not meta-analyses but are instead analyses of multiple extensions of follow-up data on the same MRT study population over time. In addition, only 9 percent of ABLE participants completed the multiple steps of MRT, which suggests a lack of fidelity to the intervention as designed.<sup>23</sup>

It could be argued that this PFS project was successful in that an intervention that appeared promising was tested at no cost to taxpayers. However, the costs of this “lesson learned” for the inaugural PFS project in the United States were high, including that the Goldman Sachs Urban Investment Group lost \$1.2 million and Bloomberg Philanthropies (an underwriting guarantor) lost \$6 million.

The intervention implemented in the Utah High Quality Preschool Program was based on pilot research demonstrating that preschool children scoring at two standard deviations below the mean or lower on the Peabody Picture Vocabulary Test (PPVT) are at very high risk for requiring special education services upon school entry.<sup>24</sup> In a pilot phase of this project, 595 low-income three- and four-year-olds in two school districts attended a special program, 110 of whom scored as very high risk on the PPVT. After completing kindergarten, only one of the 110 students was placed in special education. This resulted in a PFS payment to investors calculated on the premise that the intervention averted the use of special education services for the other 109 students.

A major concern about this evaluation design was the lack of a comparison group, which could have shown the number of children who would have needed special education in the absence of the intervention (that is, the counterfactual, in evaluation terms). The assumption in the evalu-

ation design was that all or most program participants would have required special education if not for the intervention, which is unrealistic. This approach overestimated the impact of the intervention and therefore overvalued the public savings from it.

## Discussion

Our landscape analysis of pay for success in the United States and its population health potential reveals a number of exciting developments in addition to some challenges. Four challenges and associated recommendations are discussed below.

**EVIDENCE BASE LACKING** First, a strong evidence base is lacking for a number of PFS interventions launched thus far, including evidence regarding both intervention effectiveness and economic efficiency. PFS projects can have a variety of purposes, including demonstrating the effect of a new intervention, transplanting an existing intervention to a new setting or population, or scaling an intervention by implementing it among more providers and clients.<sup>11</sup> Given implementation and evaluation costs, combined with the financial risk to investors if success metrics are not achieved, using a PFS initiative to demonstrate the effectiveness or proof of concept of a novel intervention is ill advised.

A prerequisite for any PFS project should be a robust scientific evidence base for intervention effectiveness in the target population, including evidence regarding the magnitude of the intervention effect and its economic costs and benefits. Whether or not an intervention will have a significant effect in a target population should not be a question mark in a PFS initiative (as it was in the ABLE Project), since the entire endeavor is premised upon intervention success.

We also recommend that PFS projects use well-designed, rigorous evaluations so that both outcome and process/implementation metrics can be measured with precision and confidence. High-quality evaluation results are essential not only to the terms of any success payment but also to fueling the diffusion of successful interventions.

### **ALIGNMENT WITH POPULATION HEALTH GOALS**

A second challenge is that certain aspects of the PFS model do not align well with key population health goals. Many prevention interventions aimed at upstream social determinants of health do not save money.<sup>25</sup> Furthermore, the timeline for realizing savings for some interventions, especially those focused on chronic disease prevention, is much longer than investors generally want to wait for a return. This could steer PFS initiatives toward quick cost savings instead of

longer-term cost-effective initiatives.

One potential response to this problem is the development of phase-based performance metrics and payout formulae that change over time, adjusting for the time scale of key outcomes and their metrics. For example, a diabetes prevention program targeting younger adults could focus on risk-factor outcomes (such as weight, physical activity, and blood pressure) in an early phase, transition to clinical outcomes in a second phase, and subsequent transition to health care utilization outcomes in a third phase.

The focus on public savings also creates some perverse incentives in the structuring of a PFS deal, including the incentive to target interventions to the highest-risk or highest-need subpopulation for whom cost savings are more easily attained instead of to a broader population who could benefit from primary or secondary prevention efforts. For example, PFS initiatives to date have primarily targeted housing interventions toward those who are chronically homeless and also have mental health or substance abuse problems instead of targeting the homeless population more broadly in an attempt to prevent chronicity and negative sequelae from longer-term displacement. While this type of selective targeting allows for increased financial success, it restricts the number and types of people benefiting from the intervention, thereby restricting the prevention reach and impact on population health.

Creative adjustments to the basic PFS model could allow for the consideration of a larger set of interventions and broader target populations. For example, a government entity might be willing to repay an investor for achieving greater value for the same or even greater public expenditures instead of for realized cost savings. In addition, some philanthropic investors might not require a full return on their investment.

**'WRONG POCKETS' PROBLEM** A third challenge for PFS initiatives is the "wrong budget" or "wrong pockets" problem, referring to a general public administration challenge in which the governmental entity bearing the costs of a prevention program sees little or no benefit in its own budget. This happens for multiple reasons, including that benefits and cost savings are spread across other government divisions, agencies, or levels.<sup>26</sup>

Many prevention interventions effectively improve social and health outcomes, which in turn produce public savings across a number of sectors and programs. A major challenge is that no single government level or agency desires to be solely responsible for paying back an investor when savings are realized across a number of entities. For example, a hypothetical PFS project

# PFS can increase investments in effective interventions that focus on health and prevention instead of health care.

that successfully increased young women's access to long-acting reversible contraception would allow women to better plan and time their pregnancies, which in turn would likely produce significant savings to an array of federal and state public programs including Medicaid, the Children's Health Insurance Program, the Supplemental Nutrition Assistance Program, Head Start, and child protective services. Designing a PFS deal that captures realized savings from this range of government programs presents significant administrative and research challenges. A related challenge is that government agencies generally do not want their budgets cut, even when costs are reduced through an effective intervention.

**MEDICAID RESTRICTIONS** A primary tenet of the social-determinants-of-health framework is that investments in the fundamental structural and intermediary determinants of health can improve health status and decrease health care spending to treat disease, including the significant public expenditures made through Medicaid. In the case of some interventions aimed at low-income populations, Medicaid savings alone could be enough to support a PFS venture, which would avoid having to capture savings from across a number of governmental entities. However, a fourth PFS challenge is that Medicaid law restricts the ways in which federal matching funds can be made available to states to make payouts to investors when PFS interventions yield Medicaid savings.

Medicaid is authorized to provide federal funds to help states pay for "medical assistance" to beneficiaries.<sup>27</sup> This authority permits federal expenditures for numerous well-defined medical care categories.<sup>28</sup> Because federal funding focuses on the types of services covered, it is not available for social investments that affect health, such as affordable housing, early childhood

education, environmental risk mitigation in homes, or other nonmedical interventions. States can target medical assistance to settings that are community based; for example, the home-visiting PFS intervention in South Carolina was launched in 2016 through a section 1915(b) waiver awarded to the state's Medicaid program, which combines Medicaid funding for the in-home nursing services with separately funded social services.<sup>29</sup> However, to date, the federal government has permitted only a small number of waivers that expand the range of what is covered to services other than medical assistance.<sup>30,31</sup>

One potential strategy for enabling federal Medicaid matching funds for PFS payouts involves managed care.<sup>32</sup> Federal rules permit states to build financial incentives into their contracts with Medicaid managed care organizations. As a result, in situations in which an organization partners with an investor in a social intervention (such as remediation of homes for children with severe asthma), a state might be able to share realized savings with the organization, which in turn could be used to repay investors. However, the Medicaid program's federal contribution is capped at a low threshold.<sup>33</sup>

In sum, the current policy environment limits the availability of federal Medicaid funding for social services that are commonly associated with PFS initiatives. This means that either all or a disproportionate share of an investor payout would have to come from unmatched state Medicaid funds, even though savings would accrue to both the state and federal governments.

**POLICY RECOMMENDATIONS** In response to both the "wrong pockets" problem and current legal and regulatory challenges in sharing Medicaid savings with PFS investors, changes in federal policy are needed to give the Centers for Medicare and Medicaid Services more flexibility to become involved in PFS initiatives. This flexibility could take the form of both broader use of waiver authority and the establishment of new centralized federal funding sources to support PFS initiatives.

A number of local and state governments have put aside money for PFS projects, including a central fund for a government payout outside of a specific agency, division, or program budget. In his fiscal year 2016 budget, President Barack Obama proposed \$300 million for a new PFS incentive fund to be run out of the Department of the Treasury. In addition, in June 2016 the House of Representatives unanimously passed the Social Impact Partnerships to Pay for Results Act (H.R. 5170), which includes a \$100 million fund to support state and local PFS projects. These types of centralized, dedicated PFS funds



at all levels of government are recommended by a number of experts and organizations, including in a 2015 Government Accountability Office report.<sup>34,35</sup>

## Conclusion

Analysis of the first wave of pay-for-success projects in the United States suggests that this type of social impact investing does indeed hold great promise as a way to bring private-sector resources to efforts aimed at improving population health and decreasing health inequities. The PFS approach has tremendous potential to bring investment banking, business, philanthropy, and service organization resources to prevention investments and sustained efforts regarding the social determinants of health in underserved and marginalized populations. PFS is an important mechanism that can increase investments in ef-

fective interventions that focus on health and prevention instead of health care. As such, PFS represents an innovative type of public-private partnership that can make unique and important contributions to what the Robert Wood Johnson Foundation calls “building a culture of health.”<sup>36</sup>

Nonetheless, for PFS to be successful and its potential to be fully realized, a number of challenges need to be addressed. This includes being creative in the structure of PFS deals so that the optimal prevention benefits can be achieved. There also is a need to ensure that the interventions and evaluation designs being implemented are based on sound science and rigorous research principles. In addition, there is a critical need for increased policy attention to issues regarding payouts to investors, including “wrong pockets” problems and legal constraints to using federal Medicaid funds as an investor payout source. ■

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