ABOUT THE AUTHORS

The Center for Health Law and Policy Innovation of Harvard Law School (CHLPI) advocates for legal, regulatory, and policy reforms to improve the health of underserved populations, with a focus on the needs of low-income people living with chronic illnesses and disabilities. CHLPI works with consumers, advocates, community-based organizations, health and social services professionals, food providers and producers, government officials, and others to expand access to high-quality healthcare and nutritious, affordable food; to reduce health disparities; to develop community advocacy capacity; and to promote more equitable and effective healthcare and food systems. CHLPI is a clinical teaching program of Harvard Law School and mentors students to become skilled, innovative, and thoughtful practitioners as well as leaders in health, public health, and food law and policy.

For the past three years, CHLPI has been deeply engaged in research and analysis on type 2 diabetes policy. This initiative is known as the PATHS Project (Providing Access to Healthy Solutions). The PATHS Project is generously supported by the Bristol-Myers Squibb Foundation’s Together on Diabetes™ (TOD) Initiative.

Reconsidering Cost-Sharing for Diabetes Self-Management Education: Recommendation for Policy Reform is primarily authored by Katie Garfield (Clinical Fellow, CHLPI), with editing and guidance by Sarah Downer (Clinical Instructor, CHLPI), Amy Rosenberg (Associate Director, CHLPI), and Robert Greenwald (Director, CHLPI).
INTRODUCTION

Joan’s Story: Joan, a retired nurse who has survived multiple cancer diagnoses, is currently living with type 2 diabetes. Despite working for much of her life, Joan now struggles to make ends meet. To manage her diabetes she must take multiple medications, including insulin. However, Joan cannot afford to see a diabetes educator to receive support in managing her diabetes care because the co-pays are too high. Joan wants to remain healthy enough to see her granddaughter grow up, but says, “It is demoralizing. You cannot get your grandkid a birthday present. I have had cancer 5 times. I did not expect recovery to be so tough.”

Diabetes is quickly becoming a worldwide issue of epidemic proportions. Researchers estimate that diabetes currently causes 1 death every 7 seconds, and that 592 million people will be living with diabetes by 2035. Diabetes trends are particularly alarming in the United States, where the prevalence of diabetes cases has more than tripled since 1980, and “if current trends continue, one in three Americans will have diabetes by 2050.”

Diabetes self-management education (DSME) provides a valuable opportunity for individuals living with diabetes to gain the knowledge, skills, and motivation to effectively manage their condition, and thereby avoid or postpone the onset of serious and costly complications. However, reports from providers, educators, and patients like Joan indicate that the costs associated with DSME may be acting as a significant deterrent to participation in the program.

In this white paper, the Center for Health Law and Policy Innovation (CHLPI) at Harvard Law School therefore examines the role of DSME in diabetes treatment and whether the reduction or elimination of cost-sharing obligations associated with DSME would be a cost-effective strategy for increasing program enrollment. Based upon the findings of recent cost-benefit analyses, we conclude that insurers should provide coverage of DSME with little or no cost-sharing in order to both improve patient health and curb costs.

IMPACT OF DIABETES IN THE UNITED STATES

According to a recent report by the Centers for Disease Control and Prevention (CDC), 29.1 million Americans—roughly 1 out every 11—are currently living with diabetes. This number is predicted to grow significantly in the coming years. The CDC estimates that 86 million Americans aged 20 years or older—more than 1 out of every 3—have fasting glucose or hemoglobin A1C (A1C) levels that qualify them as having prediabetes. Without intervention, these individuals have a 15% - 30% chance of developing type 2 diabetes in the next five years.

The rapid escalation of the diabetes epidemic has resulted in a corresponding surge in diabetes-related costs. The American Diabetes Association (ADA) estimates that in 2012 alone, diabetes...
was responsible for $245 billion in total costs in the United States.\textsuperscript{9} This estimate includes both $176 billion in direct medical costs and $69 billion in indirect costs related to unemployment due to disability, absenteeism, lost productivity, and premature mortality.\textsuperscript{10}

The economic impact of diabetes is equally daunting at the individual level. As of 2012, the medical expenditures among people diagnosed with diabetes were on average 2.3 times higher than among those without the disease ($13,741 vs. $5,853).\textsuperscript{11} Notably, this burden falls disproportionately on low-income individuals, who are at higher risk for developing diabetes.\textsuperscript{12}

**Complications Associated with Diabetes**

Diabetes is associated with a number of serious complications that can significantly increase the financial impact of the disease. In particular, the microvascular damage associated with diabetes can result in kidney failure, blindness, and lower-limb amputations.\textsuperscript{13} Thus, in 2011, diabetes was listed as the primary cause in 44\% of all new cases of kidney failure in the United States, and in that same year, 228,924 individuals suffering from diabetes-related kidney failure were reported as living on dialysis or with a kidney transplant.\textsuperscript{14} Similarly, in 2010, U.S. doctors performed 73,000 non-traumatic lower-limb amputations on adults diagnosed with diabetes.\textsuperscript{15}

Compared to the general population, individuals with diabetes are also at increased risk for depression\textsuperscript{16} and serious cardiovascular events, such as heart attack, stroke, and death related to cardiovascular disease.\textsuperscript{17} Without proper care, these individuals may also experience acute events related to unusually low or high blood glucose levels (\textit{i.e.}, hypoglycemia or hyperglycemia).\textsuperscript{18}

The costs related to these complications can be extraordinarily high. For example, in 2011, total Medicare costs for kidney treatments such as hemodialysis, peritoneal dialysis, and transplants reached $24.3 billion, $1.5 billion, and $2.9 billion, respectively.\textsuperscript{19} Similarly, as of 2001, diabetes-related amputations were estimated to cost $38,077 each, while costs for foot ulcer care have been estimated at $13,179 per episode.\textsuperscript{20}

**The Complex Nature of Diabetes Self-Management**

Individuals living with diabetes can reduce the risk of experiencing these complications—and the associated costs—through careful management of their blood glucose levels (as measured by hemoglobin A1C levels). Lower A1C levels are associated with improved outcomes for diabetes patients, including “reduced onset or progression of microvascular complications.”\textsuperscript{21} Specifically, a 1\% reduction in mean A1C levels has been found to be associated with risk reductions of: 21\% for death related to diabetes, 14\% for myocardial infarction, and 37\% for microvascular complications.\textsuperscript{22}

However, managing blood glucose levels can be a fairly complex and demanding endeavor, especially for patients who have limited experience with the types of lifestyle and medical
interventions necessary for meaningful improvement. For example, as an initial step towards greater control of blood glucose levels, individuals living with diabetes will likely need to adopt a healthy diet and increase their physical activity. As the disease progresses, patients may also be required to adopt a regimen of oral or injectable medications, and to engage in glucose monitoring. For individuals dependent on insulin, such monitoring may require frequent self-testing—as many as two or more times a day—as well as the ability to use a glucose meter and interpret the results.

**The Role of Diabetes Self-Management Education (DSME)**

Diabetes self-management education (DSME) is an educational intervention that aims to help patients deal with these complexities through an “ongoing process of facilitating the knowledge, skill, and ability necessary for . . . diabetes self-care.” More specifically, DSME programs consist of multiple sessions over the course of weeks or months, in which instructors use educational methods such as motivational interviewing, demonstration, observation, role playing, and problem-solving scenarios in order to teach participants the skills necessary to manage their diabetes. These sessions cover topics such as: incorporating nutritional management and physical activity into lifestyle, using medications safely and effectively, monitoring blood glucose and other parameters, and preventing, detecting, and treating acute and chronic complications.

Studies have shown that, by utilizing these methods, DSME can help patients to significantly lower their blood glucose levels. Thus, the ADA and American Association of Diabetes Educators (AADE) have described DSME as “a critical element of care for all people with diabetes” that is “necessary in order to prevent or delay the complications of [the disease].”

**Current Status of DSME in the United States**

Most public and private insurance plans in the United States are legally required to provide coverage for DSME. According to recent tracking efforts by the National Conference of State Legislatures (NCSL), 44 states, as well as the District of Columbia, currently require private plans to provide coverage for self-management training.

There is also significant coverage of DSME in the U.S. public healthcare systems. Medicare Part B provides coverage for DSME—referred to as Diabetes Self-Management Training (DSMT)—if furnished by a provider that meets certain standards. However, coverage of DSME is more varied among state Medicaid programs. According to the National Association of Chronic Disease Directors, only 30 state Medicaid programs reported covering of DSME as of 2013.

Despite relatively widespread coverage and proven effectiveness, patient participation in DSME remains surprisingly low, with only 58% of diabetes patients ever receiving diabetes education. Furthermore, in a recent study examining the records of a large commercial claims database, investigators found that only 6.8% of privately insured diabetes patients took part in a DSME
program in the first year after their diagnosis. In certain subgroups, participation was found to be somewhat higher, but never more than 14.2%. As noted by the authors of this study, similarly low results have been found in studies considering both public and private plans.

**THE CASE FOR REDUCING OR ELIMINATING DSME COST-SHARING**

According to recent reports from patients, educators, and providers, a number of barriers currently prevent patients from accessing DSME. While some of the reported barriers relate to issues at the patient/provider level—patient beliefs about DSME (e.g., that they do not need it) and logistical issues (e.g., scheduling conflicts)—others specifically relate to the how public and private insurers are approaching DSME services. Specifically, many patients, educators, and providers report that coverage and costs of DSME services are preventing access to care.

Thus, in order to encourage greater participation in DSME, public and private insurers should address the remaining gaps in DSME coverage and reduce or eliminate financial barriers, such as patient cost-sharing. As discussed in the sections that follow, a comparison between recent estimates of cost-savings associated with DSME and typical cost-sharing amounts suggests that insurers who reduce or eliminate cost-sharing for DSME will continue to realize cost-savings. Therefore, providing coverage of DSME at little or no cost to patients has the potential to not only improve the health of millions of Americans, but also to enhance overall insurer cost-savings by increasing participation in the program.

**Recent Economic Analyses Indicate that Diabetes Education Is Cost-Effective**

Over the last two decades, a number of studies have compared the costs and benefits of diabetes education. Although the outcomes of these studies have varied, the weight of current evidence indicates that diabetes education is a cost-effective intervention. For example, in a 2009 literature review, Boren et al found that 18 of 26 identified studies associated diabetes education with “decreased cost, cost saving, cost-effectiveness, or positive return on investment.”

A number of studies have also identified specific cost-savings associated with diabetes education. In these studies, investigators have observed cost-savings such as:

<table>
<thead>
<tr>
<th>Authors</th>
<th>Year of Publication</th>
<th>Savings</th>
<th>Type of Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cranor et al. 41</td>
<td>2003</td>
<td>$1,622 - $3,356 (depending upon year of follow-up)</td>
<td>Direct medical costs per patient per year</td>
</tr>
<tr>
<td>Robbins et al. 42</td>
<td>2008</td>
<td>$2,470</td>
<td>Hospital charges per patient per year</td>
</tr>
<tr>
<td>Duncan et al. 43</td>
<td>2009</td>
<td>$2,002</td>
<td>Direct medical costs per patient per year (Medicare)</td>
</tr>
<tr>
<td>Dall et al. 44</td>
<td>2011</td>
<td>$783</td>
<td>Direct medical costs per patient per year</td>
</tr>
</tbody>
</table>
Among studies that have found the costs of diabetes education to exceed potential savings or have found no impact on overall costs, investigators have often suggested that the results may be due to the limited timeframe of analysis and that DSME is likely cost-effective or cost-saving in the long-term. Additionally, some of these studies have framed the cost-benefit analysis from the perspective of a DSME provider, and therefore have taken into account administrative, supply, and overhead costs that would not necessarily be applicable to a public or private payer that chooses to reimburse a provider for DSME services.

However, many of the studies described above define DSME broadly, and therefore may not accurately depict the cost-effectiveness of the DSME programs currently covered by many public and private insurers. In their 2011 report, Duncan et al addressed this gap by specifically assessing the cost-effectiveness of accredited DSME programs. In their report, Duncan et al conducted two longitudinal studies—a 2005-2007 study and a 2005-2008 study—that analyzed insurance claims for diabetes patients participating in commercial and Medicare Advantage insurance plans. In both studies, investigators observed discernible cost-savings associated with patients who had participated in DSME. These cost-savings were largely attributable to decreased inpatient costs.

The tables below summarize the average risk-adjusted savings observed by Duncan et al when annualized and combined over the course of each study.

<table>
<thead>
<tr>
<th>Insurer</th>
<th>Analysis Description</th>
<th>Avg. Savings Per Patient Overall</th>
<th>Avg. Savings Per Patient Per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial</td>
<td>3 Yrs. (DSME vs. No DSME)</td>
<td>$4,366 over 3 yrs.</td>
<td>$1,455</td>
</tr>
<tr>
<td>Commercial</td>
<td>4 Yrs. (2+ DSME vs. No DSME)</td>
<td>$1,923 over 4 yrs.</td>
<td>$481</td>
</tr>
<tr>
<td>Medicare Advantage</td>
<td>3 Yrs. (DSME vs. No DSME)</td>
<td>$1,266 over 3 yrs.</td>
<td>$422</td>
</tr>
<tr>
<td>Medicare Advantage</td>
<td>4 Yrs. (2+ DSME vs. No DSME)</td>
<td>$3,902 over 4 yrs.</td>
<td>$976</td>
</tr>
</tbody>
</table>

**Case Study: Reduction or Elimination of Cost-Sharing in Medicare Part B**

A comparison between the savings observed by Duncan et al and typical cost-sharing suggests that insurers who eliminate cost-sharing will continue to realize cost-savings. Based upon these
findings, we recommend that public and private insurers amend their policies to cover DSME services with little or no cost-sharing. By doing so, insurers have the potential to increase participation in DSME, thereby improving patient health and reducing overall costs.

**Insurer Cost-Savings**

Duncan et al based their analysis on allowed charges—that is, the amount recognized for payment by the insurer, including both the insurer payment and patient cost-sharing. Thus, while the study provides data on the system-wide cost-savings associated with accredited DSME programs, it does not specifically assess cost-savings realized by insurers alone. In order to estimate cost-savings to insurers alone, we must estimate the portion of the allowed charges paid by the insurer, rather than the patient.

Because the study does not provide data on the costs paid by the insurer, we will estimate these costs based upon data from the Centers for Medicare and Medicaid Services’ (CMS’) Medicare Current Beneficiary Study (MCBS)—a survey of Medicare beneficiaries used to determine expenditures and sources of payment for all Medicare services. According to CMS summaries of MCBS data, Medicare covered the following percentages of treatment costs in 2007.

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage of Medicare Costs Paid by Medicare</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inpatient</td>
<td>88.15%</td>
</tr>
<tr>
<td>Outpatient</td>
<td>68.56%</td>
</tr>
<tr>
<td>Physician/Supplier Services</td>
<td>68.15%</td>
</tr>
<tr>
<td>Pharmacy</td>
<td>52.76%</td>
</tr>
</tbody>
</table>

By applying these percentages to the corresponding categories of costs described by Duncan et al (inpatient, outpatient, professional, and pharmacy) for the study’s Medicare population, we are able to create an estimate of insurer costs. For example, to estimate yearly pharmacy costs to the Medicare insurer, we perform the following calculation:

\[
0.5276 \times \text{(Pharmacy Costs Per Patient Per Year)} = \text{Insurer Pharmacy Costs Per Year}
\]

The results of these calculations for Duncan et al’s 2005-2007 longitudinal study of Medicare Advantage claims are described in the chart below.
Thus, based on the data described in Duncan et al, we estimate total savings to the Medicare Advantage insurer of roughly $1,309 over the course of three years for each plan member participating in DSME. By comparing these savings to an estimate of DSME cost-sharing, we can assess the economic impact of providing coverage for DSME at little or no cost to the consumer. Because Duncan et al do not provide data on actual DSME cost-sharing, we will use Medicare Part B costs and cost-sharing requirements to estimate typical cost-sharing.

Cost-Sharing Associated with DSME

Medicare Part B provides coverage for up to ten hours of DSME in the initial year of participation, and up to two hours of DSME in subsequent years. Typically, only one of the initial ten hours may be provided in an individual—rather than group—setting, unless special, limited circumstances apply. In subsequent years, the beneficiary may receive DSME services in either a group or individual setting. The chart below describes the current range of reimbursement rates for DSME for providers who participate in the Medicare program.

<table>
<thead>
<tr>
<th>Fee Code</th>
<th>National Avg.</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual (G0108)</td>
<td>$53.27</td>
<td>$46.46 - $71.06</td>
</tr>
<tr>
<td>Group (G0109)</td>
<td>$14.30</td>
<td>$12.57 - $19.20</td>
</tr>
</tbody>
</table>

Medicare provides reimbursement for these hours of DSME in 30-minute increments, with the patient paying 20% of the reimbursement rate as coinsurance for each session. A patient’s typical yearly cost-sharing obligation can therefore be calculated as follows:

\[
0.20 \left( (2 \times \text{Individual Rate}) + (18 \times \text{Group Rate}) \right) = \text{First Year Cost-Sharing}
\]
\[
0.20 \left( (4 \times \text{Individual Rate}) \right) = \text{Subsequent Year Cost-Sharing (All Individual Setting)}
\]

Using these equations, the charts below summarize the range of possible cost-sharing scenarios, including cost-sharing based on the national average reimbursement rate, as well as based on the reimbursement rates for the lowest- and highest-cost Medicare regions. In order to attempt to capture potential “worst-case scenarios,” the charts then estimate cost-sharing for beneficiaries who must receive all of their DSME sessions in an individual setting and for beneficiaries who have a high deductible health plan and must therefore pay the full price of DSME services. For a more detailed analysis, see Appendices A and B.
### Analysis

In our earlier analysis, we estimated savings to Medicare Advantage insurers at $1,309 over the course of 3 years for each plan member participating in DSME. When comparing this amount to estimated cost-sharing for DSME, cumulative cost-savings outweigh cost-sharing in all but the most extreme scenarios. Only when the beneficiary has a high deductible health plan and must receive all individual sessions, does the cost-sharing burden have the potential to exceed estimated 3-year cost savings ($1,309 vs. $1,300.88 - $1,989.68).

Similar results are likely to occur when considering other public insurers. For example, we would expect to see cost-savings to Medicaid programs which provide coverage for DSME without cost-sharing, given that states may only impose nominal cost-sharing for most Medicaid beneficiaries (e.g., $4 co-payment for outpatient services).\(^{67}\)

Thus, based on a comparison of potential cost-sharing amounts and estimated cost-savings, it appears that public insurers would realize cost-savings if they reduced or eliminated cost-sharing in all but the most extreme cases. Such savings would then be amplified by increased

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**RECONSIDERING COST-SHARING FOR DSME**

<table>
<thead>
<tr>
<th>All Individual, Deductible Paid</th>
<th>First Yr.</th>
<th>Subsequent Yr.</th>
<th>Cumulative 3 Yrs.</th>
<th>Cumulative 4 Yrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lowest</td>
<td>$185.84</td>
<td>$37.17</td>
<td>$260.18</td>
<td>$297.34</td>
</tr>
<tr>
<td>National Avg.</td>
<td>$213.08</td>
<td>$42.62</td>
<td>$298.31</td>
<td>$340.93</td>
</tr>
<tr>
<td>Highest</td>
<td>$284.24</td>
<td>$56.85</td>
<td>$397.94</td>
<td>$454.78</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Individual + Group, High Deductible</th>
<th>First Yr.</th>
<th>Subsequent Yr.</th>
<th>Cumulative 3 Yrs.</th>
<th>Cumulative 4 Yrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lowest</td>
<td>$319.18</td>
<td>$185.84</td>
<td>$690.86</td>
<td>$876.70</td>
</tr>
<tr>
<td>National Avg.</td>
<td>$363.94</td>
<td>$213.08</td>
<td>$790.10</td>
<td>$1,003.18</td>
</tr>
<tr>
<td>Highest</td>
<td>$487.72</td>
<td>$284.24</td>
<td>$1,056.20</td>
<td>$1,340.44</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>All Individual, High Deductible</th>
<th>First Yr.</th>
<th>Subsequent Yr.</th>
<th>Cumulative 3 Yrs.</th>
<th>Cumulative 4 Yrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lowest</td>
<td>$929.20</td>
<td>$185.84</td>
<td>$1,300.88</td>
<td>$1,486.72</td>
</tr>
<tr>
<td>National Avg.</td>
<td>$1,065.40</td>
<td>$213.08</td>
<td>$1,491.56</td>
<td>$1,704.64</td>
</tr>
<tr>
<td>Highest</td>
<td>$1,421.20</td>
<td>$284.24</td>
<td>$1,989.68</td>
<td>$2,273.92</td>
</tr>
</tbody>
</table>
RECONSIDERING COST-SHARING FOR DSME

participation in DSME and prevention of expensive complications in later years. Public programs such as Medicare and Medicaid should therefore provide coverage of DSME at little or no cost to consumers in order to both improve the health of individuals living with diabetes and to attempt to lower overall program costs.

As we do not have MCBS-like data from which to estimate private insurer costs, it is difficult to estimate cost-savings for such plans here. However, given the cost-savings that Duncan et al observed with respect to commercial plans, private payers should also consider providing coverage of DSME with little or no cost-sharing, and perhaps perform their own analyses of whether such a change could be a cost-effective way to improve care for their beneficiaries.

Finally, given the limitations of the data in the Duncan et al study, we recommend that additional cost-sharing-focused research be conducted to confirm and support the findings described here.

POLICY APPROACHES TO REDUCING OR ELIMINATING DSME COST-SHARING

Private Payers

While reforms to cost-sharing imposed by private payers could be achieved through legislation, policymakers and advocates should also approach individual insurers to encourage them to reduce or eliminate cost-sharing for DSME. Private payers have considerable flexibility to adjust their own cost-sharing structures and may be interested in implementing this change.

Additionally, policymakers in the 6 states that have not yet done so should work to enact laws requiring private plans to cover DSME services. New legislation should include language that prevents or discourages cost-sharing requirements.

Public Payers

Changes to Program Requirements

Policymakers should also look to improve access to DSME services in public programs. Reduction or elimination of cost-sharing for DSME in Medicare programs would generally require a statutory change at the federal level. For example, in order to eliminate cost-sharing for DSME in Medicare Part B, advocates would need to urge Congress to propose changes to 42 U.S.C. § 1395l(a) and (b) that would establish: (1) that Medicare is responsible for paying 100% of the cost for DSME and (2) that DSME is not subject to the Medicare Part B deductible.

In contrast, elimination of cost-sharing in Medicaid programs could be accomplished at the state level, either as a state plan amendment or as part of a Medicaid waiver program. In those states which have not yet adopted coverage of DSME services in their Medicaid programs, policymakers should use the amendment or waiver process to establish coverage of DSME services without cost-sharing to beneficiaries.
Opportunities for Funding Change

In order to facilitate such changes, policymakers should seek out funding opportunities under diabetes-focused initiatives. For example, policymakers should apply for—or encourage entities within their states to apply for—funding from entities such as the Center for Medicare and Medicaid Innovation (CMMI).

Section 3021 of the Affordable Care Act (ACA) created CMMI within CMS with the aim of “test[ing] innovative payment and service delivery models to reduce program expenditures . . . while preserving or enhancing the quality of care furnished to individuals.” Given the financial and physical toll that diabetes is taking upon the United States, policymakers should encourage CMMI to focus its next round of grants specifically on funding initiatives which seek to address barriers—such as coverage and cost—to crucial diabetes services.

CONCLUSIONS

The diabetes epidemic is quickly taking a drastic physical and financial toll on the United States. DSME has been shown to be a successful and cost-effective intervention for individuals living with diabetes. However, despite support for DSME across major healthcare systems, states, and key advocacy groups, only a limited percentage of diabetes patients are participating in the program. As we’ve learned from providers, educators, and patients like Joan, issues with coverage and cost are contributing to this unfortunate trend.

A comparison between recent cost-benefit analyses and estimated patient cost-sharing demonstrates that insurers who provide coverage for DSME without cost-sharing will continue to realize cost-savings in all but the most extreme cases. Moreover, by eliminating cost-sharing, insurers can enhance cost-savings by expanding the number of beneficiaries taking part in DSME programs. Public and private insurers should therefore provide coverage of DSME with little or no cost-sharing, so that Joan—and others like her—can finally receive the support that they need to effectively manage their diabetes.

KEY CONCLUSIONS

- Diabetes self-management education (DSME) is a critical and cost-effective diabetes intervention.
- Reducing or eliminating cost-sharing would improve patient access to DSME.
- A comparison between typical DSME cost-sharing and a recent study on the cost-savings associated with accredited DSME programs indicates that insurers who reduce or eliminate cost-sharing will continue to realize cost-savings in most cases.
- Public and private insurers should reduce or eliminate cost-sharing for DSME, as it is a cost-effective change with the potential to improve the health of millions of Americans living with diabetes.
APPENDIX A

The chart below provides a more detailed analysis of typical cost-sharing under Medicare Part B for DSME services.

<table>
<thead>
<tr>
<th>APPENDIX A: MEDICARE COST-SHARING WHEN PROVIDER PARTICIPATES IN MEDICARE</th>
<th>Individual Rate</th>
<th>Group Rate</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Cum. Year 2</th>
<th>Cum. Year 3</th>
<th>Cum. Year 4</th>
<th>Avg./Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal Medicare, Individual + Group (Deductible Paid)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lowest</td>
<td>$46.46</td>
<td>$12.27</td>
<td>$62.84</td>
<td>$37.17</td>
<td>$37.17</td>
<td>$101.00</td>
<td>$138.17</td>
<td>$175.34</td>
<td>$43.84</td>
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</tr>
<tr>
<td>National Avg.</td>
<td>$53.27</td>
<td>$14.30</td>
<td>$72.79</td>
<td>$42.62</td>
<td>$42.62</td>
<td>$115.40</td>
<td>$158.02</td>
<td>$200.64</td>
<td>$50.16</td>
<td></td>
</tr>
<tr>
<td>Highest</td>
<td>$71.06</td>
<td>$19.20</td>
<td>$97.54</td>
<td>$56.85</td>
<td>$56.85</td>
<td>$154.39</td>
<td>$211.24</td>
<td>$268.09</td>
<td>$87.02</td>
<td></td>
</tr>
<tr>
<td>Normal Medicare, All Individual (Deductible Paid)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>Lowest</td>
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<td>$37.17</td>
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<tr>
<td>National Avg.</td>
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<td>$213.08</td>
<td>$42.62</td>
<td>$42.62</td>
<td>$255.70</td>
<td>$298.31</td>
<td>$340.93</td>
<td>$85.23</td>
<td></td>
<td></td>
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<tr>
<td>Highest</td>
<td>$71.06</td>
<td>$284.24</td>
<td>$56.85</td>
<td>$56.85</td>
<td>$341.09</td>
<td>$397.94</td>
<td>$454.78</td>
<td>$113.70</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Deductible Health Plan, Individual + Group (Deductible Not Paid)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lowest</td>
<td>$46.46</td>
<td>$12.27</td>
<td>$319.18</td>
<td>$183.84</td>
<td>$183.84</td>
<td>$503.02</td>
<td>$690.86</td>
<td>$875.79</td>
<td>$219.18</td>
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</tr>
<tr>
<td>National Avg.</td>
<td>$53.27</td>
<td>$14.30</td>
<td>$363.94</td>
<td>$213.08</td>
<td>$213.08</td>
<td>$577.02</td>
<td>$790.10</td>
<td>$1,003.18</td>
<td>$250.80</td>
<td></td>
</tr>
<tr>
<td>Highest</td>
<td>$71.06</td>
<td>$19.20</td>
<td>$487.72</td>
<td>$284.24</td>
<td>$284.24</td>
<td>$771.96</td>
<td>$1,055.20</td>
<td>$1,340.44</td>
<td>$335.31</td>
<td></td>
</tr>
<tr>
<td>High Deductible Health Plan, All Individual (Deductible Not Paid)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lowest</td>
<td>$46.46</td>
<td>$929.20</td>
<td>$183.84</td>
<td>$183.84</td>
<td>$1,115.04</td>
<td>$1,300.88</td>
<td>$1,485.72</td>
<td>$371.68</td>
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<tr>
<td>National Avg.</td>
<td>$53.27</td>
<td>$1,065.40</td>
<td>$213.08</td>
<td>$213.08</td>
<td>$1,278.48</td>
<td>$1,491.56</td>
<td>$1,704.64</td>
<td>$426.16</td>
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</tr>
<tr>
<td>Highest</td>
<td>$71.06</td>
<td>$1,421.20</td>
<td>$284.24</td>
<td>$284.24</td>
<td>$1,705.44</td>
<td>$1,989.68</td>
<td>$2,273.92</td>
<td>$548.48</td>
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</tr>
</tbody>
</table>
Some providers choose not to routinely participate in the Medicare program \textit{(i.e., they do not routinely take Medicare “assignment”).}^{71} In that instance, the Medicare reimbursement rate is only 95\% of the typical rate.\textsuperscript{72} However, the provider may charge the patient up to 115\% of that lower rate.\textsuperscript{73} This amount is called the “limiting charge.”

When a provider uses the limiting charge, the patient is responsible for paying the typical 20\% coinsurance \textit{(i.e., 20\% of the 95\% rate)} and the additional 15\% \textit{(i.e., 15\% of the 95\% rate).} \textsuperscript{74} Ultimately, this means that the patient pays cost-sharing of 35\% of the 95\% rate \textit{(i.e., 30.4\% of the limiting charge)}. The chart below describes DSME cost-sharing in situations in which a provider applies the limiting charge.\textsuperscript{75}

<table>
<thead>
<tr>
<th>APPENDIX B: MEDICARE COST SHARING WHEN PROVIDER USES LIMITING CHARGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal Medicare, Individual + Group (Deductible Paid)</td>
</tr>
<tr>
<td>Lowest</td>
</tr>
<tr>
<td>National Avg.</td>
</tr>
<tr>
<td>Highest</td>
</tr>
<tr>
<td>Normal Medicare, All Individual (Deductible Paid)</td>
</tr>
<tr>
<td>Lowest</td>
</tr>
<tr>
<td>National Avg.</td>
</tr>
<tr>
<td>Highest</td>
</tr>
<tr>
<td>High Deductible Health Plan, Individual + Group (Deductible Not Paid)</td>
</tr>
<tr>
<td>Lowest</td>
</tr>
<tr>
<td>National Avg.</td>
</tr>
<tr>
<td>Highest</td>
</tr>
<tr>
<td>High Deductible Health Plan, All Individual (Deductible Not Paid)</td>
</tr>
<tr>
<td>Lowest</td>
</tr>
<tr>
<td>National Avg.</td>
</tr>
<tr>
<td>Highest</td>
</tr>
</tbody>
</table>

14
ENDNOTES

1 The name of this individual has been changed.


5 DSME is sometimes also referred to as diabetes self-management training (DSMT). For consistency, the term “DSME” is used throughout this white paper to refer to both DSME and DSMT.


7 Id.


10 Id. Astoundingly, these figures may be relatively conservative. In 2014, researchers put the annual cost of diabetes at closer to $322 billion, including $244 billion in excess medical costs and $78 billion in reduced productivity. See Timothy M. Dall et al., *The Economic Burden of Elevated Blood Glucose Levels in 2012: Diagnosed and Undiagnosed Diabetes, Gestational Diabetes Mellitus, and Prediabetes*, 37 DIABETES CARE 3172, 3172 (Dec. 2014).


14 Id.

15 Id.


18 Id.

RECONSIDERING COST-SHARING FOR DSME


24 Id.


27 Id. at S147.

28 In a meta-analysis of 31 studies on DSME, this intervention showed a reduction in blood glucose of 0.76% immediately following the intervention. Susan L. Norris et al., Self-Management Education for Adults with Type 2 Diabetes: A Meta-Analysis of the Effect on Glycemic Control, 25 DIABETES CARE 1159, 1164 (2002). Further, each additional 23.6 hours of contact between a DSME instructor and a patient led to glucose reductions of 1%. Id.


30 Some investigators have noted, though, that not all relevant plans appear to be meeting this requirement, and so actual coverage of DSME may be more limited than the relevant laws suggest. See Delesha M. Carpenter et al., Shortcomings in Public and Private Insurance Coverage of Diabetes Self-Management Education and Support, 15 POPULATION HEALTH MGMT. 144, 147 (2012).


36 Id.
37 Id. at 1047-48 (citing Ian Duncan et al., Assessing the Value of Diabetes Education, 35 The Diabetes Educator, no. 5, 752, 752-760 (Sept./Oct. 2009)).


40 Suzanne A. Boren et al., Costs and Benefits Associated with Diabetes Education: A Review of the Literature, 35 The Diabetes Educator 72, 74 (Jan./Feb. 2009). Of the remaining studies, only one—a study focusing on a diabetes prevention program—found diabetes education to be associated with increased costs. Id. All other studies found diabetes education to be cost-neutral, or did not address cost-effectiveness in an easily classifiable manner. Id.


42 Jessica M. Robbins et al., Nutritionist Visits, Diabetes Classes, and Hospitalization Rates and Charges: The Urban Diabetes Study, 31 Diabetes Care, no. 4, 655, 657 (Apr. 2008).

43 Ian Duncan et al., Assessing the Value of Diabetes Education, 35 The Diabetes Educator, no. 5, 752, 757 (Sept./Oct. 2009). This study found that on average, patients who received diabetes education had a total of $1,029.39 in Medicare costs per month while those who did not receive diabetes education had monthly costs of $1,196.21. The number provided here is the difference between these two amounts annualized to reflect yearly costs (i.e., ($1,029.39 - $1,196.21) x 12 = $2,002).

44 Timothy M. Dall et al., Health Care Use and Costs for Participants in a Diabetes Disease Management Program, United States, 2007-2008, 8 Preventing Chronic Disease, Public Health Research, Practice and Policy, no. 3, 1, 5 (May 2011).

45 See, e.g., Carol A. Brownson et al., Cost-Effectiveness of Diabetes Self-Management Programs in Community Primary Care Settings, 35 The Diabetes Educator, no. 5, 761, 767 (Sept./Oct. 2009) (finding that although costs of creating and administering DSME programs outweighed the reduction in treatment costs, the programs provided a long-term cost-effective increase in patient quality-adjusted life years (QALYs)); Sean D. Sullivan et al., The Impact of Diabetes Counseling and Education: Clinical and Cost Outcomes From a Large Population of US Managed Care Patients With Type 2 Diabetes, 39 The Diabetes Educator, no. 4, 523, 528 (July/Aug. 2013) (noting that the follow-up period of 1 year may have been too short a time period to provide an indication of how the observed clinical benefits could translate into cost savings in the future).

46 See, e.g., Carol A. Brownson et al., Cost-Effectiveness of Diabetes Self-Management Programs in Community Primary Care Settings, 35 The Diabetes Educator, no. 5, 761, 764 (Sept./Oct. 2009).


48 Id. at 652.

49 Duncan et al provide data on risk-adjusted per member per month (PMPM) average costs for each of these populations for each year of these studies. See id. at 648-49, 652. Values described here were calculated by determining the difference in average costs between DSME and non-DSME populations, and then extrapolating over the course of the study (i.e., multiplying difference in PMPM cost by 12 months to determine per year difference and then adding average yearly cost differences for each year of the study).
Email from Ian Duncan, Adj. Associate Professor, University of California Santa Barbara, to Katie Garfield, Clinical Fellow, CHLPI (May 27, 2015, 9:20PM ET) (on file with CHLPI) (stating belief that study used allowed charges).

Medicare Current Beneficiary Survey (MCBS), CTRS. FOR MEDICARE AND MEDICAID SERVICES, http://www.cms.gov/Research-Statistics-Data-and-Systems/Research/MCBS/index.html (last visited June 6, 2015). The data included in this survey cover standard Medicare fee-for-service patients as well as Medicare Advantage patients. Therefore, actual insurer costs for the Medicare population in the Duncan et al study may differ slightly because the study population consisted solely of Medicare Advantage patients.


Duncan et al do not specifically describe what services fall under the category of “Professional” care. Here we have assumed that this category corresponds to the Physician/Supplier Services category found in the MCBS data analysis.

The MCBS also includes data regarding the following categories of care: dental, hospice, home health services, and long-term facility care. As the Duncan et al study does not appear to address these areas of care, we have not included them in this analysis.

Duncan et al only provide categorized risk-adjusted data for their 2005-2007 longitudinal study. Therefore we have only estimated insurer costs based upon that study. Our analysis does not estimate insurer costs under the 2005-2008 longitudinal study because no categorized data is available for that study.

As noted earlier, Duncan et al provide data on risk-adjusted per member per month (PMPM) average costs for DSME and non-DSME populations for each year of the study. In our calculations, we used these PMPM averages to estimate yearly per member per year costs for each year of the study. We then used the MCBS data to estimate the portion of those yearly costs paid by Medicare Advantage insurers.

This analysis considers the impact of eliminating cost-sharing for plans choosing to reimburse outside providers for the provision of DSME services. Potential costs and/or cost-savings associated with developing and implementing a DSME program are therefore outside the scope of this report.


42 C.F.R. § 410.141(c)(1)(i)(D), (c)(1)(ii) (2014). A beneficiary may receive a greater proportion of his or her initial ten hours of DSME in an individual setting if no group sessions are available or if the beneficiary has special needs which necessitate individual training.


Current rates were applied here to give a sense of the current cost-sharing burden. Notably, though, costs from the time of the Duncan et al study differed slightly, with group sessions being slightly more expensive, (e.g., national average payment of $17.05) and individual sessions being significantly less expensive (e.g., a national average payment amount of $29.56 for an individual DSME session). Thus, the overall cost-sharing burden at the time of the study was even lower than what is described here, due to the significantly lower subsequent year costs. See Physician Fee Schedule Search, CTRS. FOR MEDICARE & MEDICAID SERVICES, http://www.cms.gov/apps/physician-fee-schedule/search/search-results.aspx?Y=11&T=0&HT=0&CT=3&H1=G0109&M=5 (last visited June 6, 2015); Physician Fee Schedule Search, CTRS. FOR MEDICARE & MEDICAID SERVICES, http://www.cms.gov/apps/physician-fee-schedule/search/search-results.aspx?Y=11&T=0&HT=0&CT=3&H1=G0108&M=5 (last visited June 6, 2015).
RECONSIDERING COST-SHARING FOR DSME


Medicare fees vary by region. This column therefore displays the range of fees associated with DSME across all regions in the United States.


For the sake of this example, we are assuming the highest cost scenario in which the beneficiary receives all of their subsequent-year DSME sessions in the individual format.

Medicare Part B requires beneficiaries to pay a deductible of only $147. See Medicare 2015 Costs at a Glance, CTRS. FOR MEDICARE & MEDICAID SERVICES, http://www.medicare.gov/your-medicare-costs/costs-at-a-glance/costs-at-glance.html (last visited June 7, 2015). However, some Medicare beneficiaries may choose to obtain a high deductible insurance plan rather than standard Medicare coverage. In such a plan, the beneficiary may be responsible for paying the full cost of DSME as part of their cost-sharing obligation. Therefore, an estimate of the potential cost-sharing burden for DSME under such a plan is provided here in order to give a sense of the full spectrum of possible cost-sharing obligations (i.e., the spectrum ranging from the cost-sharing for a Part B beneficiary who has already paid their deductible and does not require only individual sessions to a high deductible plan beneficiary who has paid none of their deductible and requires all individual sessions).

See 42 U.S.C. § 1396o(a)(3), (b)(3) (2012); 42 U.S.C. § 1396o-1 (2012); 42 C.F.R. § 447.52(b) (2014) (limiting Medicaid cost-sharing for outpatient services to $4 for individuals with income up to 100% of the federal poverty level). Medicaid programs may impose slightly higher cost-sharing for individuals with incomes between 101%-150% of federal poverty level (up to 10% coinsurance) and above 150% of federal poverty level (up to 20% coinsurance). See 42 U.S.C. § 1396o-1(b)(1)(B)(i), (b)(2)(B) (2012).

As noted earlier, the following states currently do not require private insurers to provide coverage of DSME: Alabama, Arizona, Delaware, Idaho, North Dakota, and Ohio.

See 42 U.S.C. § 1396o (2012); 42 U.S.C. § 1396o-1 (2012) (allowing, but not requiring, states to apply cost-sharing in Medicaid programs); 42 U.S.C. § 1396o-1(b)(3)(C) (2012) (stating that states have the option to exempt classes of beneficiaries or services from cost-sharing obligations).


Id.

Id.
