

The Shands Jacksonville Patient-Centered Medical Home Diabetes and Hypertension Self-Management Education Model: Program Costs Summary

Background¹

Hypertension – also known as high blood pressure – and diabetes are major risk factors for heart disease and stroke. They can be prevented or controlled through proper health education, improved self-management practices, and increased access to care and treatment. The Centers for Disease Control and Prevention (CDC) identified the Shands Jacksonville Patient-Centered Medical Home (PCMH) as a promising practice to prevent heart disease and stroke because of its distinctive approach to addressing health disparities, reducing barriers to care, and providing treatment through a diabetes and hypertension self-management education (DHSME) model. In the DHSME model, the

Evaluation Questions

- ✦ What resources are required (e.g., personnel, financial) to implement the diabetes and hypertension self-management programs at the Shands Jacksonville PCMH?
- ✦ How much do the programs cost, and how are those costs distributed?

What is a designated provider clinic (DPC)?

The DPC model is an efficient way to treat patients in a community setting, while diverting them from higher-cost care (e.g., emergency room visits) by providing health education, health promotion, and community outreach in targeted areas. Patients are referred to DPCs by their primary care provider for more intensive and aggressive disease management (e.g., more frequent monitoring with extended clinic hours).

Shands Jacksonville PCMH uses three designated provider clinics (DPCs) to address unmet disease management needs for patients with uncontrolled and poorly managed chronic health conditions and help them get intensive low-cost or free treatment. From October 2013 to February 2015, CDC, working with staff from the Shands Jacksonville PCMH and the contractor ICF International, conducted an evaluation of the implementation processes, clinical outcomes, and costs of the DHSME model.² This summary describes the cost findings of the evaluation, providing a comprehensive description of the key cost drivers of delivering the diabetes and hypertension programs at the Shands Jacksonville PCMH.

Methods

In the Shands Jacksonville PCMH DHSME model, staff provide education modules for patients through two programs implemented in the DPCs: Diabetes Rapid Access Program (D-RAP) and Review, Educate and Control Hypertension (REACH). The purpose of the cost study was to determine the costs of the programs and how resources were allocated, and to help guide future decisions to implement similar programs. The study focused on program costs incurred at three of the DPCs from October 1, 2012, through September 30, 2013.

D-RAP: Accredited by the American Diabetes Association, D-RAP is a diabetes self-management education program implemented beginning in 2006 to help remove barriers to care by providing patients with the education and tools that they need to manage diabetes.

REACH: Implemented starting in 2007, REACH provides hypertension patients with rapid access to care and is designed to intervene when they present with uncontrolled, abnormal blood pressure readings. Similar to D-RAP, REACH includes intensive disease self-management education and tools to manage hypertension.

¹An Implementation Guide for the Shands Jacksonville PCMH DHSME Model can be found on the [DHDSPE Evaluation Resources](#) page: [PDF Link](#)

²A separate summary on the results of the Shands Jacksonville PCMH DHSME evaluation is available on the [DHDSPE Evaluation Resources](#) page: [PDF Link](#)



Evaluators collected detailed expenditure and time-use data using a cost study questionnaire and time-use study questionnaire, and collected patient volume numbers for a typical month.

Analyses focused on total clinical costs, costs attributable to the programs, and how costs were allocated across expenditure types and program activities. Evaluators also studied the extent of program activity at the DPCs as well as staffing and patient volume differences for the two programs.

Key Findings

The following are key findings related to program operation and staffing structure, and clinical costs, including program activity, total costs, and cost allocation.

Program operation and staffing structure

Staffing structure

Because the three DPCs focused on aggressive disease management, they had a different staffing structure than would typically be seen at primary care clinics. Patients coming to the DPCs were not required to make appointments, and most patients were monitored frequently until their disease reached “controlled” status. To accommodate this program structure, each DPC included patient-facing staff who focused on patient treatment activities, while the administrative team was involved in planning for all aspects of the PCMH and worked across DPCs.

- ⚡ Each DPC was staffed by a team of two medical assistants, one registered nurse, and one nurse practitioner.
- ⚡ In addition to administrative staff primarily housed outside the DPCs, a medical doctor, social worker, and two clinical pharmacists were also available to provide services.

Staff time

75% of average weekly staff hours at the DPCs was spent on D-RAP and REACH activities.

Because some of the services overlap in the two programs, patients in both D-RAP and REACH programs required less staff time in a combined

visit (28 minutes) than patients receiving the same services in two separate visits (32 minutes).

Figure 1. Patient specific staff time required per visit



Patient volume

- ⚡ In the month of September, which was chosen as a typical month to study patient volume, 401 of the 418 (96%) unique patients seen at the DPCs were enrolled in at least one of the programs. These 401 patients had a combined total of 797 visits.
- ⚡ Very few patients were enrolled only in D-RAP, most likely because diabetes patients often have multiple health issues. In September, there were 7 patients enrolled in D-RAP only, 203 enrolled in REACH only, and 191 enrolled in both D-RAP and REACH across the three DPCs.
- ⚡ Those enrolled in both D-RAP and REACH or REACH alone visited the DPCs about two times per month on average, and those enrolled in D-RAP alone visited the DPCs almost 3 times per month.

Clinical costs

Cost findings focused on total clinic costs for the DPCs, costs attributable to providing the programs, the monthly cost of providing services per patient, and how costs were allocated by input type (e.g., personnel, utilities) and activities (e.g.,



operations, data collection). The costs reported here take into account all of the direct expenses incurred while operating the D-RAP and REACH programs, regardless of the source of financial or in-kind support. Costs do not include startup expenses and do not include reimbursements or savings to the clinic.

Total costs

Table 1 shows the total annual costs for each DPC, with total costs associated with providing D-RAP and REACH services. Average annual costs per DPC were \$484,073, with a total annual cost of the program across all three DPCs of \$1,452,218. Ninety-three percent of the DPCs' spending provided services for D-RAP or REACH, which is not surprising since almost 96% of patients were enrolled in at least one of the two programs.

Table 1. Total Annual Costs per DPC, Shands Jacksonville PCMH, 2012-2013

Cost Type	Average Annual Cost per DPC	
D-RAP + REACH Costs	\$450,256	93%
Other Clinical Costs	\$33,817	7%
Total Costs	\$484,073	

DPC, Designated Provider Clinic; D-RAP, Diabetes Rapid Action Program; REACH, Review Educate and Control Hypertension.

Average monthly operational and patient-specific costs

To provide another perspective on the resources required to run the programs, monthly fixed operational costs and the average of the variable patient specific costs were analyzed, as shown in Table 2.

Table 2. Average Monthly Operational Costs and Patient-Specific Costs per DPC, Shands Jacksonville PCMH, 2012-2013

	Average per DPC
Monthly operational costs	\$26,337
Monthly patient-specific costs, per patient enrolled in:	
D-RAP	\$83
REACH	\$64
D-RAP+REACH	\$108

DPC, Designated Provider Clinic; D-RAP, Diabetes Rapid Action Program; REACH, Review Educate and Control Hypertension.

Operational costs were the fixed costs required to operate the programs even if no patients were enrolled. This included costs for certain personnel activities like general administration and operations, and general expenses like building space and utilities.

Patient-specific costs were the variable costs required for providing the D-RAP and REACH services to patients. These included expenses for clinical care and medical supplies and were calculated per patient for those enrolled in both D-RAP and REACH together, D-RAP only, and REACH only.

The higher cost of the D-RAP only group compared to the REACH only group could be explained by the longer staff time required per visit for D-RAP compared to REACH, as shown in Figure 1.

Cost allocations across types of expenditure and program activities

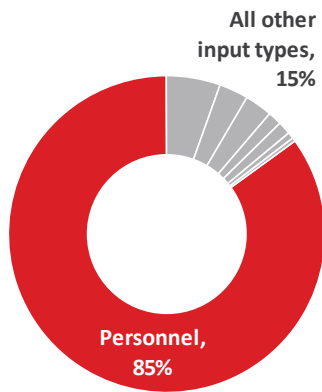
Figure 2 shows the average monthly D-RAP and REACH program costs per DPC, in eight input type categories. Because personnel costs were the main driver of total costs, Figure 3 provides an overview of the total personnel costs to operate D-RAP and REACH programs, in nine program activities.

Most of the total D-RAP and REACH costs were for personnel, as is common for most service delivery programs. Almost one-third of total D-RAP and REACH personnel costs were spent in direct patient-specific activities (clinical care coordination, patient education, drug disbursement, and other clinical care).



Figure 2. Average Monthly D-RAP and REACH Program Costs Across DPCs, by Input Type, Shands Jacksonville PCMH, 2012-2013

Input Type	Average per DPC	%
Personnel	\$31,876	85%
Facilities	\$2,066	6%
Utilities	\$1,120	3%
Prescriptions	\$1,055	3%
Supplies	\$527	1%
Equipment	\$498	1%
Other	\$244	1%
Transportation	\$136	0%
TOTAL	\$37,521	



DPC, Designated Provider Clinic; D-RAP, Diabetes Rapid Action Program; REACH, Review Educate and Control Hypertension.

Figure 3. Distribution of Total Personnel Costs per DPC, by Program Activity, Shands Jacksonville PCMH, 2012-2013

Program activity	Distribution of personnel cost
General administration & operations	32%
Data collection & dissemination	15%
Patient screening & recruitment	13%
Clinical care coordination	10%
Patient education	9%
Other clinical care	8%
Outreach	7%
Drug disbursement	2%
Provider education	2%

DPC, Designated Provider Clinic; D-RAP, Diabetes Rapid Action Program; REACH, Review Educate and Control Hypertension.

Limitations

Because of the difficulty and time required to gather 12 months of patient volume data, a single month, September 2013, was chosen to represent a typical month. September was chosen because it was the most recent month with full data at the time of data collection, and staff reported that September was indicative of a normal month.

This study focuses only on the costs associated with providing D-RAP and REACH programs and does not address their impact or cost efficiency. Future decisions about implementing similar programs should not be based solely on the cost study, but rather should consider cost findings in combination with other study findings related to impact and efficiency.

Conclusion

The Shands Jacksonville PCMH DHSME cost study provides a starting point to understand the resources needed to successfully operate and deliver D-RAP and REACH programs. Most of the DPCs' expenses were for D-RAP or REACH services, which is not surprising because 96% of patients were enrolled in at least one of the programs. Of the D-RAP and REACH costs, most (85%) were for personnel. About two-thirds of personnel costs were for general duties to operate the clinics, and the remaining third were for direct patient-specific activities.

In recent years, the Shands Jacksonville PCMH has evolved and is continually changing to meet the needs of the patient population. The Shands Jacksonville PCMH was historically funded through grants, but recent changes have allowed the clinics to bill for D-RAP, REACH, and other services. With this added revenue stream, the future cost per successful outcome is likely to decrease, given a steady or slightly increasing patient load. A future cost-benefit analysis may yield useful data to help understand the feasibility of replicating these programs in similar settings.

