Advisory Board | Consulting

Dispensary of Hope

Gaining pharmaceutical efficiencies, reducing U.S. health system cost, and improving health outcomes by providing pharmaceuticals to those in need

Advisory Board Consulting Value-Based Care

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Disclosure of relationship between Advisory Board and the Dispensary of Hope: The following is a summary of a comprehensive study by The Advisory Board Company of the work of the Dispensary of Hope, and its financial and health outcomes impact on communities. As a supporting partner of this new enterprise, Advisory Board Company was not compensated in any way for this research.

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Introduction

Message To Membership: Smart Stewardship Takes Bold Collaboration

A goal that every health system, employer, and community shares is to see profound improvement in health outcomes among the chronically ill, low-income, and uninsured achieved through a financially and socially sustainable mechanism. The Dispensary of Hope began with the vision to recover and make use of surplus medication – medication under the purview of a licensed healthcare facility that would expire if not redistributed. In 2003, the concept of the Dispensary of Hope was born and has grown into a national healthcare transformation platform producing break-through results in improved chronic illness health outcomes for some of the most difficult-to-reach patients. The organization provides a case-study in sustainably achieving the triple aim in healthcare: increased access to healthcare services, reduced cost of care, and improved healthcare outcomes. This impact is made possible through a bold collaborative platform – a nonprofit, licensed drug distributor that joins the generosity of the drug manufacturing industry to the patient care capacity and mission of charitable health systems, clinics and pharmacies.

The Dispensary of Hope solves several pressing national problems in smart, new ways. First, lack of insurance and high out-of-pocket costs can make medication unaffordable for the lowest-income, chronically ill, uninsured Americans. Secondly, healthcare providers and organizations wish to assist low income patients in accessing their medication, but have lacked an affordable, national medication access solution. Following full implementation of the Affordable Care Act, the United States still has 30 million uninsured people. According to the nonpartisan Kaiser Family Foundation, when the uninsured are diagnosed with an illness, they are more likely to forego healthcare services, including access to medication, and, to delay their follow up care. These patients are less likely to take their medication as prescribed and more likely to skip doses, share prescriptions, and cut pills in half. Costs of healthcare services are most often cited as the reason these people do not receive their care. As a result, those who lack healthcare insurance tend to be, and remain, sicker than those with healthcare coverage. Although they may earn enough to get by, these individuals are not offered healthcare benefits as part of their employment and do not qualify for public healthcare programs. Thus, their chronic illness keeps them in peril. Finally, drug manufacturers who regularly produce medication surplus and are forced to destroy inventory. Manufacturers and health systems are often forced to incinerate perfectly usable medication at a great cost to the company. Projections and manufacturing volumes may exceed sales, new competition in a product line may result in unsold goods, changes in a formulary may mean that a shelf in the sample medication closet remains undistributed, and changes in the marketplace may mean that unsold medication is left in a warehouse. In these instances, manufacturers and health systems may be left with unexpired inventory. Consequently, the total impact of surplus medicine in the US is in the billions of dollars annually.

No person wants to be without healthcare coverage or access to healthcare services, yet 30 million people are without coverage. The following details the impact of this collaboratively-run population health effort and how the Dispensary of Hope is increasing access to the highest-demand primary care medication, reducing the cost of healthcare services, and improving health outcomes among the low income, uninsured population.

Executive Summary: The Dispensary of Hope

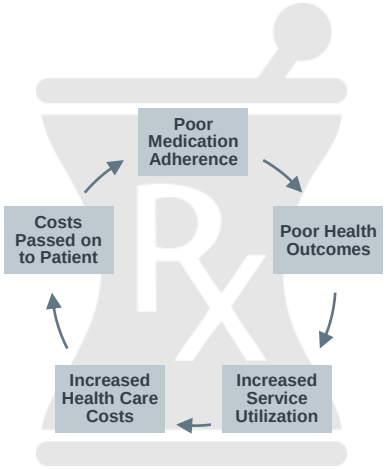


Figure 1 illustrates the cyclical implication of poor medication adherence, with multiple negative consequences of poor medication adherence burdening the patient. The first is the direct effect of nonadherence, namely poor health outcomes and increased utilization of services. The second is the cost to the patient, both directly through follow up care as a result of nonadherence, and indirectly through societal investment in healthcare to mitigate the deteriorating health of its patients.

DISPENSARY OF HOPE

Dispensary of Hope collects unexpired surplus medication that would have otherwise been destroyed and securely delivers it to charitable pharmacies and clinics so that they may improve the health of their most vulnerable patients: the poor and uninsured.

As health systems endeavor to find a “true north” in population health, the consistent focus for all organizations centers on the triple aim in health care: to enhance the care experience for patients and their families, to improve the overall health of a population, and to reduce per capita costs to manage the health of that population.

A primary strategy underlying this process focuses on providing cost-effective care to individuals with chronic conditions, including those who otherwise may not have access to such care. Patients’ adherence to prescribed medication schedules is a crucial component to providing effective care as part of the population health management strategy. Estimates suggest that $100 to $300 billion of annual avoidable health care costs are attributed to medication nonadherence in the United States, accounting for three to ten percent of overall health care spending[1]. Medication nonadherence pervades patient populations, and can be influenced by patient-controlled factors such as demographic and behavioral aspects, as well as external determinants related to the disease being treated, the providers facilitating access to the medication, and the medications themselves. The downstream effects of patient divergence from prescribed regimens have an eventual compounding impact on medication adherence through increased health care cost burdens on the population. However, many of the safety net organizations that strive to meet the needs of access-vulnerable patient populations have limited financial capacity themselves. They are often unable to sustain local patient needs as they provide free or substantially discounted prescription drugs, relying on other financial means to cover costs.

Meanwhile, pharmaceutical manufacturers may have in their possession surplus medication – medication which they must store, ship and destroy – adding avoidable cost to the manufacturer. Comparing medication supply and demand, the market presents an opportunity for manufacturers to reduce waste and better serve patient populations, and for patient populations to enjoy increased access to affordable medication. The Dispensary of Hope offers a unique solution to align surplus medicine of drug manufacturers with the evident needs of patient populations with limited access to prescription drugs. The Dispensary of Hope’s business solution helps to alleviate the access issue to improve medication adherence and reduce overall healthcare costs in the United States. The following section outlines their business model and results, as well as the methodology for evaluation.

1) Iuga, A. O., & McGuire, M. J. (2014). Adherence and health care costs. *Risk Management and Healthcare Policy, 7*, 35–44. http://doi.org/10.2147/RMHP.S19801

Dispensary of Hope: Supply / Value Chain

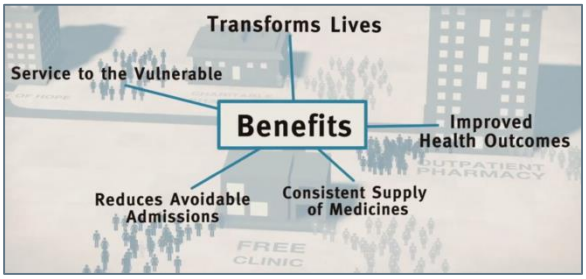
Generating value to all stakeholders since 2003

Value to Suppliers

The Dispensary of Hope receives drugs that would otherwise be incinerated and works with health systems and pharmacies to provide those drugs to people who cannot afford their medication. The process begins as drug manufacturers send an available inventory list to the Dispensary of Hope. Their donations of medication qualify for tax deductions, reduce the economic and environmental burdens of incinerating these drugs, and offer a new and exciting alternative for manufacturers to engage in corporate social responsibility.

Internal Operations

Donated medications are adjudicated through a state of the art logistics center and tracked through the Dispensary of Hope's cloud-based eHope system. All medications are Track & Trace compliant per the Drug Supply Chain Security Act and stringently documented. The Dispensary of Hope is approved to distribute in each state in which it operates. These steps are critical to ensuring drug efficacy, safety, and compliance to partner agreements to alleviate concerns of diversion or improper dispensing.



Value to Customers

Health systems and pharmacies order from the available inventory to provide medication to their low-income, uninsured population. The inventory of over 400 drugs represents the highest demand medications needed to treat chronic illness. The Dispensary of Hope charges an annual membership fee which allows pharmacies and clinics unlimited ordering and weekly shipments to cover the needs of eligible patients. The drugs are dispensed at no cost to eligible patients, affording them the ability to properly manage chronic disease and ease the burden on health systems.

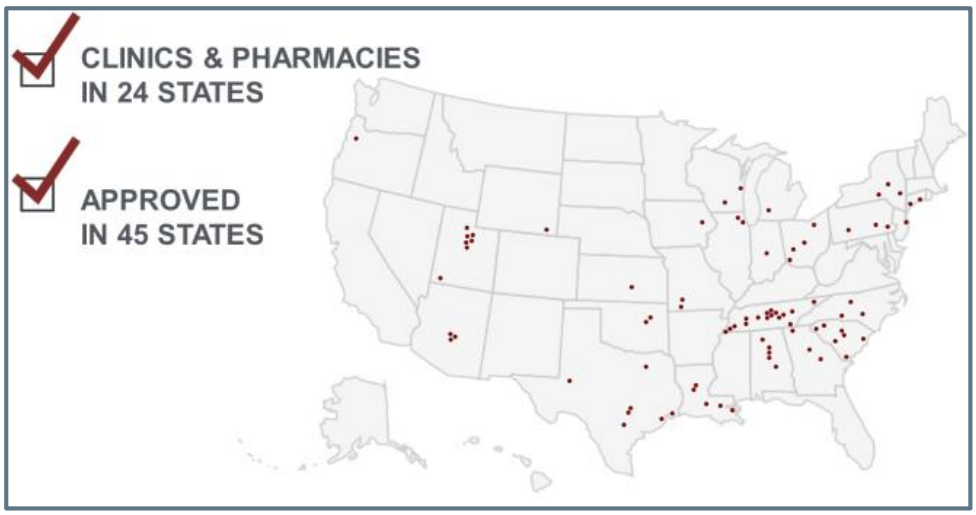
1) Uninsured and underinsured individuals with incomes less than 200% of the Federal Poverty Line (FPL)

Dispensary of Hope: Sustainable Growth and Outlook

Promising Growth

Moving into sustainability

Growth is sustained by the Dispensary of Hope's ever-expanding network of facilities across the US, which currently stands at 94 dispensing partner sites in 24 states with expected increase to 107, a 16.3% increase, by July 2017. They have worked closely with the pharmaceutical boards, or the appropriate alternative in each of these states, to become approved in 45 states with the expectation to be in all 50 states plus D.C. by December 2016.



National Presence

Building on the backbone of their commitment to indigent populations, the organization has grown by leaps and bounds. Since 2011, they have witnessed an annual growth rate of 55.6%, dispensing $36.5 million of drugs since July 1, 2013 and $19.5 million over the last 12 months alone. The majority of these drugs are generic; however, there is a small subset of branded drugs to help cover the continuum of patient needs.

To the Dispensary of Hope, however, this is still just the tip of the iceberg. They estimate $10 billion worth of unexpired, usable prescription drugs are incinerated every year in the U.S. alone. Roughly 0.25% of that waste is currently being captured through the Dispensary of Hope's efforts. The Dispensary of Hope envisions a future in which every manufacturer is donating all usable surplus to provide for those in need.

Research in Brief

The Challenge

The Dispensary of Hope has proven immense value to the patients and communities they serve and the drug manufacturers with whom they partner. For the health systems, however, the exact financial Return on Investment (ROI) had yet to be quantified. Are there sufficient cost-of-care savings at the hospital-level to offset the investment needed to manage a Dispensary of Hope program? What is the financial impact of serving the medication access needs of the uninsured? How do these medications impact health outcomes?

Defining The Investment

The necessary level of investment varies by hospital and depends on the current pharmacy structure and expected volume of uninsured patients. This expense includes:

- Pharmacy staff costs
- Dispensary of Hope subscription cost (access to all medications in the Dispensary of Hope inventory and distribution/shipping costs)
- Administrative costs (printing, labels, space, etc.)

Return on Investment

The Advisory Board Company aggregated multiple years of hospital billing data, Dispensary of Hope pharmacy enrollment data, and medication dispensing data. The investigation focused on three methods of analysis in order to determine the impact in hospital costs and utilization. Using multiple patient cohorts across multiple years, inpatient utilization decreased by 50%+ and emergency department utilization decreased by 35%+. Cost per case also decreased for inpatient encounters by 15%+ and ED average costs decreased by 40%+. Using comparisons to like-populations, a conservative 25% of the utilization and cost reductions was attributed to Dispensary of Hope interventions.

In conclusion, the return on investment from the hospital perspective is 3:1 on a per 1,000 Dispensary of Hope enrollees basis.

Annual Savings per 1,000 Enrollees	Annual Pharmacy Expense to Hospital	Return on Investment for Hospital
$650K	**$210K**	**3:1**

Methodology

Taking a Data-Driven Approach to Demonstrate Value

Case Study of Saint Thomas Health in Nashville, TN

Collaborative Approach

In collaboration with the Dispensary of Hope and St. Thomas Health, the Advisory Board Company studied over two years of facility billing encounter detail data, cost accounting data, and pharmacy utilization data (including Dispensary of Hope patient enrollment and prescription history). These data sets were aggregated in order to establish a clear picture of patient enrollment periods, utilization of Dispensary of Hope services, and utilization of hospital services.

Methods Used

To evaluate particular aspects of hospital utilization, data was processed in order to determine, at the encounter level, whether an encounter was deemed potentially preventable, primary care treatable, a diagnosis-related readmission, or a potentially preventable complication. The investigation considered three primary analyses, each highlighting significant improvements in hospital utilization for the patient population enrolled in Dispensary of Hope.

Table 1: Overview of Three Methods Used to Identify Value

1 Pre-Post Intervention Analysis

Population:
DoH patients enrolled in 2014

Method:
- Compared utilization data pre- and post - DoH enrollment, ensuring symmetric before & after timeframes

Key Results
- 37% decrease in inpatient utilization, 20% decrease in average cost per case, and 19% decrease in average length-of-stay
- Minimal change in ED visits and 54% decrease in ED cost per visit

2 Member Enrollment Timeline Analysis

Population:
DoH patients enrolled in 2013, 2014, & 2015, grouped into separate cohorts

Method:
- Compared annualized 2013, 2014, & 2015 utilization data for all three populations

Key Results
- Similar impact as method 1 in decreases to utilization and cost per case
- At least 25% decreases across all categories of potentially preventable utilization
- Reduction in year-over-year "high utilizers" [1]

3 DoH Consistent Utilizer Analysis

Population:
DoH patients enrolled in 2013 & 2014 with consistent pharmacy use in multiple years[2]

Method:
- Compared total costs for 2013 & 2014 inpatient (IP) & emergency department (ED) utilization data across time

Key Results
- Approx. 25% of DoH enrollees used dispensing services consistently across multiple years
- Total cost changes for the consistent utilizer population was $2,750+ per patient

Data Sources:
- Facility Billing Data | March 2013 – Mid Year 2015 | Discharge Date
- Cost Accounting Data | March 2013 – Mid Year 2015 | Discharge Date
- Dispensary of Hope membership rosters | Midtown | October 2014 - Current
- Dispensary of Hope membership rosters | West | January 2013 - Current
- Pharmacy data for Midtown & West Dispensaries | January 2012 – April 2015

1) High utilizers - those individuals with two or more inpatient or Emergency Department visits in a given year.

2) Using DoH dispensing data, consistent utilizers have at least one pharmacy visit in the year of enrollment and one year post-enrollment

Understanding the Continuum of Care

Algorithm Descriptions

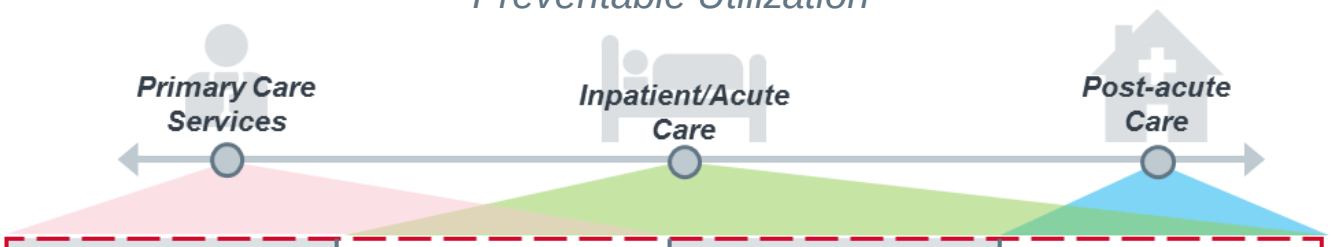
Methods to identify preventable utilization

The Advisory Board Company utilized several algorithms to identify and categorize preventable utilization. For ED visits, the New York University's Potentially Preventable ED Visits (PPEDs) algorithm determines the likelihood that a visit was emergent, non-emergent, or emergent but avoidable. The Agency for Healthcare Research and Quality's Prevention Quality Indicator (AHRQ's PQI) algorithm helps identify admissions that are treatable in an ambulatory setting or avoidable with improved primary care interactions. Two 3M algorithms help identify Potentially Preventable Complications (PPCs) and Potentially Preventable Readmissions (PPRs), which represent avoidable complications not present on admission and readmissions clinically related to a prior admission, respectively.

Population Health Implications

Each of these utilization metrics help identify gaps in care across the continuum. For example, PPEDs and Ambulatory-Care-Sensitive Admissions (ACSAs - hospitalizations due to poor outpatient/holistic care) are indications of gaps in primary care access. Potentially Preventable Complications are indicators of both hospital quality as well as a patient's risk of complications. Potentially Preventable Readmissions can help identify situations with a lack of follow-up care or access to the necessary medication needed to manage a condition post-discharge.

Preventable Utilization



Potentially Preventable ED Visits	Ambulatory Care Sensitive Admissions	Potentially Preventable Complications	Potentially Preventable Readmissions
•**NYU Algorithm** to determine **non-emergent** and **emergent, but avoidable** cases •PPEDs indicate potential **access issues** and/or **insufficient primary care services** •**Travel distance** impacts preventable ED utilization for private payers and self pay[1]	•**AHRQ Algorithm** used to identify admissions that can be **better treated in an ambulatory care setting** or **avoidable with high-quality, community-based primary care** •ACSAs are common among chronic condition patients with ailments like COPD, CHF, and Asthma	•**3M Algorithm** used to identify potentially avoidable complications not present on admission •PPCs **drive significant costs** to the hospital and are **not reimbursed favorably**	•**3M Algorithm** used to identify readmissions clinically related to a prior admission •PPRs reveal **issues with post-acute care**, the hospital **discharge process**, and **patient compliance**

1) Study of South Carolina utilization data: BMC Health Serv Res. 2015; 15: 203.

Method 1: Patients Pre and Post Enrollment

Dispensary of Hope Intervention

20% and 54% realized cost savings within the inpatient and Emergency Department settings, respectively

The first method of analysis considered a specific cohort of patients who enrolled within the 2014 calendar year. Using the date of enrollment for each participant, a symmetric time period of data pre-enrollment and post-enrollment was evaluated (Table 1).

Inpatient and Emergency Department Encounters

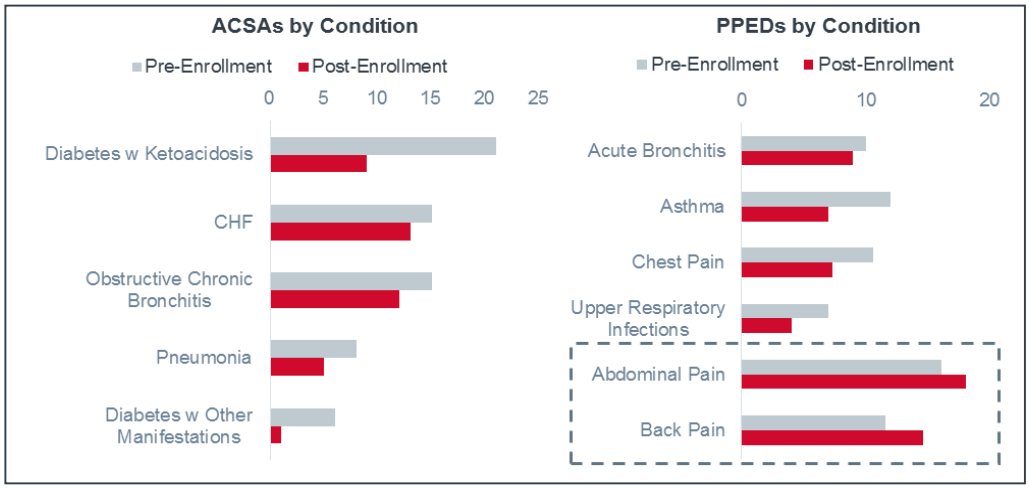
This analysis highlighted definitive reductions in utilization of both inpatient and emergency services, cost per case, and length-of-stay. For inpatient and emergency department visits, the most meaningful outcome was the cost improvements associated with this indigent population.

Pre-Post Intervention Analysis Focuses on ~400 DoH Patients Enrolled During 2014[1]

	Inpatient			ED		
	Pre-	Post-	% Change	Pre-	Post-	% Change
Total Encounters	219	137	**-37%**	212	205	**-3%**
Average Cost[2] per Encounter	$7.5K	$6.0K	**-20%**	$288	$132	**-54%**
Average LOS	7.0 days	5.7 days	**-19%**	n/a	n/a	n/a

ACSAs and PPEDS

Many of the underlying reasons for the above improvements come from the reduction in the improper use of resources. Both ACSAs and PPEDs dropped significantly. However, there was minimal improvement to PPEDs for abdominal and back pain, which are two conditions that may require controlled substance pain medications not available through the Dispensary of Hope.



1) For every patient enrolled in 2014, analysis compares symmetric data pre- and post- enrollment up to one year; analysis focused on West Dispensary
2) Average cost expressed as Direct Variable Cost

Method 2: Patients by Enrollment Year

Year-over-year improvement was evident across Dispensary of Hope enrollees in all categories and metrics

Utilization Over Time

The second analysis grouped cohorts of patients by enrollment year in Dispensary of Hope. The evaluation of hospital utilization by patient enrollment year demonstrated similar year-over-year reductions in both utilization and spend across this population. Further, definitive improvements were observed two years beyond the enrollment year for patients enrolled in 2013 which indicated that a health system may continue to realize utilization and cost reduction benefits for a single population across multiple years.

Enrollment Timeline Analysis Shows Utilization Changes Over Time

Inpatient Utilization Per Thousand Lives		Discharge Year 2013[1]	2014	2015[1]	% Change
Enrollment Year	2013	749	162	138	-82%
	2014		711	336	-53%
	2015			1,777	

ED Utilization Per Thousand Lives		Discharge Year 2013	2014	2015	% Change
Enrollment Year	2013	652	329	256	-61%
	2014		693	451	-35%
	2015			676	

High Utilizers

Significant utilization decreases occurred for patients identified as high utilizers, those individuals with two or more inpatient or Emergency Department visits in a given year.

High Utilizers Insights

- Decrease in number of visits does not result in worse health outcomes but rather an outcome of better health management
- **66-80% decrease** in number of High Utilizers after one year in DoH program
- **Additional 50-75% decrease** between first year and second year

Number of High Utilizers by Discharge Year

Year of Enrollment	IP	2013	2014	2015
	2013	73	18	9
	2014		58	12

Year of Enrollment	ED	2013	2014	2015
	2013	68	23	6
	2014		56	11

1) Data annualized to extrapolate an entire year; Patients are not represented in multiple years; mutually exclusive cohorts

Method 3: Consistent Pharmacy Utilizers

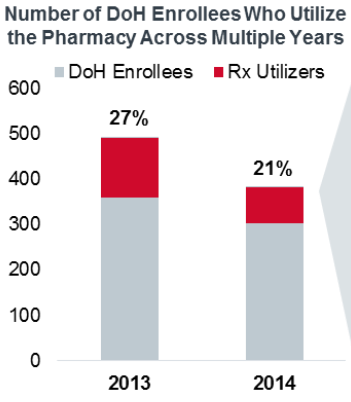
Enrollees who utilize Dispensary of Hope services across multiple years show significant improvements in total cost of care

External Factors

The first two methods of analysis showed immensely promising results; thus, a third analysis was included to ensure the data was not skewed by external factors such as a geographic move of a patient, a transition to new health coverage, limited prescription need due to an acute episode, non-compliance with the Dispensary of Hope program, or other external factors. To address these external factors, prescription fill information from Saint Thomas Health Plaza Pharmacy was reviewed.

Prescription Utilization

Using the prescription history, about 25% of enrolled patients were determined to be consistent Dispensary of Hope utilizers over a long period of time (i.e. these patients filled prescriptions at the pharmacy across multiple years). Evaluation of this subset of patients eliminated several potential external factors such as a geographic move, insurance transition, the need of drug intervention for only an acute episode, and non-compliance. This smaller cohort experienced consistent decreases in costs to the health system. Year-over-year savings for this population is estimated to be over $2,500 per patient in direct variable costs to the health system.



Total Inpatient Costs		Discharge Year 2013[1]	2014	2015[1]	% Change
Enrollment Year	2013	$674K	$117K	$77K	-89%
	2014		$374K	$106K	-72%

Total ED Costs		Discharge Year 2013[1]	2014	2015[1]	% Change
Enrollment Year	2013	$25K	$6K	$1K	-96%
	2014		$2K	$1K	-50%

$579K — *Annual Spend Decrease for Both Enrollment Years*

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210 — *Consistent Utilizers in Sample*

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$2,759 — *Annual Savings per Consistent Utilizer*

Implications

Given that this method showed more significant impact and accounted for external factors that lead to false indicators of cost improvements, it validated that the above estimated impact is driven by Dispensary of Hope interventions. While the non-consistent (or temporary) utilizers of Dispensary of Hope still receive significant benefits from Dispensary of Hope, it is difficult to determine what portion of that impact could be attributed to Dispensary of Hope versus other external factors.

1) Data annualized to extrapolate an entire year

Patient Population Comparison

Comparison to Other Patient Populations

In an effort to validate results and provide context for the population served by the Dispensary of Hope, other payer classes were compared across the same timeframe. Among the St. Thomas patient population, Dispensary of Hope enrollees were higher utilizers of inpatient and ED services and performed worse across all preventable utilization statistics. Further, post-enrollment results improved metrics across all categories.

	Commercial	Medicaid	Medicare	Self Pay	Pre- DOH[1]	Post- DOH[1]
IP Encounters	14,205	6,198	22,263	1,818	434[2]	94
IP Average Cost per Encounter	$3,999	$2,924	$6,965	$4,771	$6,543	$3,773
ALOS	3.5	3.9	4.9	4.9	5.7	5.0
% Frequent Flyers	6.0%	8.4%	21.0%	10.8%	29.6%	25.4%
			Preventable Utilization Statistics			
ACSA Rate	3.4%	6.5%	13.8%	15.7%	19.3%	20.2%
PPR Rate	2.2%	4.3%	7.0%	5.1%	12.7%	7.4%
PPC Rate	4.3%	3.3%	9.4%	5.0%	9.9%	7.4%
PPED Rate	42.7%	54.9%	44.0%	46.9%	51.9%	49.6%

Self-Pay Cohort Comparison

As a further validation test, a cohort of self-pay patients, who were not enrolled in Dispensary of Hope, was established to track utilization over time. While there was some reduction in average cost per case and ACSAs, it was minimal in comparison to the Dispensary of Hope population across the time period.

Self-Pay/Charity Population	*Discharge Year*			*Self-Pay*	*DoH Comparison*
	2013[3]	***2014***	***2015[3]***	***CAGR[4]***	***CAGR***
IP Encounters per 1,000 Lives	637	616	680	**1%**	**-57%** ↓
Average IP Cost per Encounter	$4,508	$4,820	$4,357	**-2%**	**-37%** ↓
ACSAs per 1,000 Lives	116	106	113	**-1%**	**-43%** ↓
PPRs per 1,000 Lives	45	45	55	**11%**	**-70%** ↓
PPC Rate	5.9%	4.9%	5.4%	**-4%**	**-45%** ↓

1) For DoH enrollees in 2013, compares 2013 and 2014 utilization
2) Annualized figure
3) Data annualized to extrapolate an entire year
4) Compound Annual Growth Rate

Patient Population Comparison

Dispensary of Hope Affect on Self-Pay vs. Medicaid Populations

The data suggests that the Dispensary of Hope (DoH) program decreases overall utilization of inpatient and ED services, decreases costs when services are needed, and improves population health metrics. Those findings held true when evaluating a subset of DoH enrollees (~25% of total enrollees) who were consistent year-over-year utilizers of the DoH pharmacy. In order to calculate a return on investment for the health system, one question still remained: How much total cost of care savings can be attributed to the Dispensary of Hope program?

The best method to evaluate the true impact of the DoH program is to compare it to other, like populations. If both patient cohorts experience cost of care decreases, any excess for the DoH population above the compared cohort could more certainly be related to the DoH intervention. The below figure compares a self-pay cohort with DoH enrollees. Nearly all of the total cost decreases for the DoH population are above those from the compared self-pay population. Thus, 95% of the cost of care improvement could be attributed to the DoH intervention.

Dispensary of Hope Utilizers Show Extraordinary Utilization Reductions Compared to Other Populations

	Description of Analysis	Implied Percentage Difference to Dispensary of Hope
Comparison to Self Pay Population	***2013 cohort:*** *Inpatient utilization stayed relatively stable over time (+1%) and IP cost per case increased by 2%.*	
Comparison to Medicaid Population with Similar Conditions[1]	***2013 cohort:*** *IP utilization decreased by ~47%, but costs only decreased by ~13% YoY. ED utilization decreased by ~44%, but costs remained stable.*	

A similar analysis was performed with a cohort of Medicaid patients suffering from similar chronic conditions. The Medicaid cohort experienced meaningful reductions in utilization, but was still less than the DoH population. Cost per case decreased by about 13% compared to a 20% decrease for the DoH population. Comparing the two populations, total cost of care decreases were 23% more significant for the DoH population. If all else were equal, these results would imply that 23% of the total cost and utilization improvements for DoH enrollees could be attributed to improved access to medication. As the Medicaid population receives more access to healthcare and medications than the typical DoH enrollee, 23% may be considered the most conservative approach to take in order to isolate the true return on investment for the health system.

1) Inclusive of 14 sub-service lines with heavy prevalence of chronic conditions (e.g., Medical Cardiology, Pulmonology, Endocrinology, etc.)

Health System Impact

Population Health Returns

The Triple Aim

Impact on Health Communities

The increase in donated medication has a significant impact on the communities served by Dispensary of Hope program sites. It is clear through analysis that Dispensary of Hope is positively impacting health systems to help accomplish the triple aim. Dispensary of Hope partners demonstrate results through increased access to medication, reduction in cost of care, and improved quality for patients and caregivers.

Increased Access

PPEDs per 1,000 Lives		Discharge Year '13	'14	2015	% Change
Enrollment Year	'13	339	163	131	-61%
	'14		322	241	-25%
	2015			387	

By virtue of data demonstrating reduced preventable utilization within health systems, communities supported by Dispensary of Hope pharmacies and clinics enjoy increased access to prescription drugs. Reductions in potentially-preventable inpatient stays and emergency department visits provide good indication of the redirection of care back to the preventive treatment stage. On average, Dispensary of Hope patients lowered their preventable inpatient events by 80+ encounters per 1,000 lives and preventable emergency department visits by 95+ PPEDs per 1,000 lives. Additionally, results show a decrease in the percentage of health system "high utilizers," or individuals with numerous inpatient encounters or ED visits, after health systems established dispensary locations for Dispensary of Hope medication.

Decreased Cost

PPRs per 1,000 Lives		Discharge Year '13	'14	2015	% Change
Enrollment Year	'13	95	12	8	-92%
	'14		89	60	-33%
	2015			116	

As preventable utilization declines, the associated cost of care also decreases. The Dispensary of Hope partnerships have generated meaningful savings on a per case basis, with a 20% decrease in the average cost per inpatient encounter and a 54% decrease in average emergency department encounters. The reduced cost of care saves time and resources for the health system, which can be better spent to support the population. It also allows for a higher quality result for patients, their families, and caregivers.

Improved Quality

PPC Rate		Discharge Year '13	'14	2015	% Change
Enrollment Year	'13	10%	7%	3%	-70%
	'14		9%	5%	-44%
	2015			8%	

Perhaps the greatest benefit the Dispensary of Hope provides its partners is a population freed from the negative consequences of poor access to medication. Along with the preventable inpatient and emergent encounters, Dispensary of Hope populations saw decreased preventable readmissions and complications. Patients received needed care in appropriate settings with fewer complications and a reduced need for emergent support.

Return on Investment for Health Systems

3:1
RETURN ON INVESTMENT FOR HEALTHCARE SYSTEMS

Impact on Health Communities

The Dispensary of Hope's vision is to connect demand with surplus through a program that generates value to its communities directly and mitigates unnecessary healthcare spend to reactively care for patients. As partners of the Dispensary of Hope program, hospital systems make annual investments of $12,500 per charitable pharmacy location and $7,500 per charitable clinic to drive down inpatient and emergency department utilization by patients with potentially avoidable encounters related to medication nonadherence. In 2014, the combined investments supported the overall Dispensary of Hope program cost of $1.6 million. The throughput of medication distributed through this program was significantly higher at $10.4 million in total medication distributed across the member sites. This equates to a $1 investment in program yielding $6.50 in distributed pharmaceuticals. The Dispensary of Hope is working to improve on this model, with its current distribution goal at $76.07 million in drugs with a program cost of $2.6 million, or a dollar in cost yielding $29.28 in distributed pharmaceuticals. The average pharmacy site currently dispenses approximately $162K in prescription pharmaceuticals, for which the Average Wholesale Price (AWP) of these drugs is $437K.

Healthcare systems benefit from a reduction in the number of total encounters, the length of stay per encounter, and the direct variable cost per encounter. Specifically, the savings to a healthcare system which can be attributed to a partnership with the Dispensary of Hope are estimated at $650K per thousand lives[1]. With the total annual pharmacy expense of $210K, the return on investment to a healthcare system for partnering with the Dispensary of Hope is approximately three to one. This total does not include the value of the manufacturer donated medication. As evident in the ROI and in the quality of care impact on populations, both hospital systems and communities benefit from a program that has remained true to its original goal of achieving cost savings while prioritizing prescription access for financially disadvantaged individuals.

1) Case study of Saint Thomas Health Plaza Pharmacy, analyzing 2014 Patient Enrollment data

IV

Conclusion

Seizing Abundant Opportunity

Key Takeaways

$10B in Pharmaceuticals Incinerated Each Year in U.S.

20-50% Decrease in Preventable Utilization

$650K savings per 1,000 lives Attributable to a Partnership with Dispensary of Hope

3:1 ROI for Health Systems

Patient-Centric efforts can create unimaginable value

As population health initiatives continue to work their way into the U.S. health landscape, organizations must find new and innovative solutions to meet the needs of their consumers while ensuring fiscal fortitude. Many of these ideas take the form of disruptive innovations whereas others, like the Dispensary of Hope, find ways to optimize the health system.

Access to care remains a burdensome issue across our health system. Medication adherence issues lead to efficacy gaps estimated to drive 3-10% of health care costs, a number which organizations like the Dispensary of Hope are tackling head-on. Much of this unnecessary burden is due to the fact that people cannot afford their medication, especially the uninsured and underinsured populations. Through proven results, the Dispensary of Hope has developed a business model that serves the needs of patients, health systems, and drug manufacturers alike with ROI figures exceeding 300% per year.

It will take the combined efforts of the Dispensary of Hope, its business partners, and other market players to enhance models of care along with preventable measures to adequately serve the needs of the 30 million consumers with inadequate healthcare coverage. In conjunction, such efforts will minimize waste in a system that already costs more per capita than any other nation.

There will still be wasted pharmaceuticals, as no forecast is perfect. Finding the appropriate partners that align with health systems' organizational and social needs is of the utmost importance. The Dispensary of Hope is positioned to be one such partner and is a force of hope for all stakeholders within the health sector value chain.

Is the Dispensary of Hope the Right Partner for You?

Use these considerations to assess your alignment with, and readiness for, services from the Dispensary of Hope

To address the current unmet need of patients, the Dispensary of Hope's strategic vision is to create "an industry standard practice, where reliable surplus is matched with planned giving to fill the need for access to medication." To achieve this, they hope to develop new partnerships with health systems to grow the network of non-profit hospital outpatient pharmacies, FQHCs, and charitable community pharmacies and clinics. To participate in the program, consider the following about your healthcare system.

Healthcare Facility Characteristics

- Organization has a non-profit designation
- Organization has an outpatient pharmacy on-site or is planning to open one
- Your mission supports access to care for underserved individuals. Some examples may include:
    - A meaningful portion of your work involves uncompensated care
    - A subsidized, sliding scale, or free prescription program is in place
    - Patients with chronic health conditions in your community are readmitting to local hospitals
    - Your Community Health Needs Assessment (CHNA) identifies gaps in health access and/or medication access

What are the requirements to participate in the Dispensary of Hope network?

- 501(c)(3) organization or owned by a 501(c)(3) hospital/health system
- Pharmacy licensed to fulfill ambulatory patient prescriptions
- Capability to manage an inventory of Dispensary of Hope drugs, including segregation and tracking
- Commitment to qualify patients (<200% FPL + uninsured) to receive prescriptions filled from a Dispensary of Hope inventory
- Agreement to dispense Dispensary of Hope drugs to patients free of charge

For more information, please contact the Dispensary of Hope:
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