Assessing the Value of Medical-Legal Partnerships: Case Study of New York City's LegalHealth

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BACKGROUND

There is an increasing awareness and recognition of the importance of addressing social and systematic factors in improving population health and access to care.[1] Many of these factors cannot be fully addressed without legal intervention.[3] Medical-legal partnerships (MLPs) bring together medical professionals and lawyers to address social causes of health disparities.[5]

LegalHealth, a division of the New York Legal Assistance Group (NYLAG), is a New York City based MLP with a mission to provide free legal assistance to low-income New Yorkers with serious health problems within hospitals and community-based health organizations throughout the five boroughs and Long Island.[6] LegalHealth addresses a wide range of issues, including public benefits, housing, immigration, health insurance, family law, consumer, advance directives, employment, wills and estates, education, and others.[7] Over the one-year period analyzed in this study, spanning 2013 and 2014, LegalHealth helped 5,747 clients with over 6,400 legal matters and received over $2.2 million in direct financial benefits for those clients. Since the formation of LegalHealth in 2001, it has impacted the lives of over 26,000 low-income New Yorkers.[8] During this period, LegalHealth has also been able to help obtain health insurance coverage for many clients, which in turn has created a financial benefit for hospital and healthcare partners that otherwise would likely not have received compensation for uncovered services.

LegalHealth's focus on addressing social determinants of health corresponds with broad health policy goals and the objectives of recent insurance and healthcare delivery reform programs occurring on the national and state level, such as the Delivery System Reform Incentive Payment (DSRIP) Program[9] and Medicaid Health Homes Program[10] in New York

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[1] Healthy People 2020, "Healthy People 2020: An Opportunity to Address Societal Determinants of Health in the United States (Secretary's Advisory Committee on National Health Promotion and Disease Prevention Objectives for 2020)," (Washington, D.C.: Office of Disease Prevention and Health Promotion, U.S. Department of Health and Human Services, 2010); P. Braveman, S. Egerter, and D. R. Williams, "The Social Determinants of Health: Coming of Age," *Annu Rev Public Health* 32(2011); A.M. Hewitt, "Addressing Health Disparities: Understanding Place in the Role of Social Determinant Interventions," in *Social Determinants, Health Disparities and Linkages to Health and Health Care*, ed. J.J. Kronenfeld, *Research in the Sociology of Health Care* (United Kingdom: Emerald, 2013).

[3] E. Cohen et al., "Medical-Legal Partnership: Collaborating with Lawyers to Identify and Address Health Disparities," *J Gen Intern Med* 25 Suppl 2(2010); E. Lawton and E. T. Tyler, "Optimizing the Health Impacts of Civil Legal Aid Interventions: The Public Health Framework of Medical-Legal Partnerships," *R I Med J (2013)* 96, no. 7 (2013); M. Sandel et al., "Medical-Legal Partnerships: Transforming Primary Care by Addressing the Legal Needs of Vulnerable Populations," *Health Aff (Millwood)* 29, no. 9 (2010).

[5] Medical-legal partnerships currently operate 292 health care institutions in the United States. See http://medical-legalpartnership.org/faq.

[6] LegalHealth, "About Legalhealth," http://legalhealth.org/about-us/.

[7] Ibid.

[8] Ibid.

[9] Refer to https://www.health.ny.gov/health_care/medicaid/redesign/dsrip/overview.htm

State, as well as newer patient service models, such as Accountable Care Organizations and Patient-Centered Medical Homes. Given the current significance of its services, LegalHealth proposed this paper to: (1) discuss its role as a community organization that improves patient quality of life, and; (2) to analyze its role in obtaining healthcare coverage for patients and evaluate how that coverage can impact healthcare partners' bottom line.

METHODS

We describe the value and benefits associated with the services provided by LegalHealth and estimate the dollar value associated with those benefits as a way of demonstrating the possible "returns on investment." A simple conceptual framework shows the paths through which LegalHealth's services impact the community and its healthcare partners. A focused discussion of both the direct and indirect benefits related to healthcare contextualizes LegalHealth's valuable role in assuring appropriate coverage for preventive care, acute care, and safe and appropriate discharge, as well as avoiding unnecessary hospital utilization.

In this report we use a qualitative analysis, however the main methodological approach of this report is a cost-benefit analysis (CBA). A cost-benefit analysis is a systematic approach that assesses the economic worth of a program by comparing the monetary costs (inputs) to the monetary benefits (outputs). The ultimate goal of the evaluator is to document whether the benefits of a service or intervention exceed the costs of providing said service or intervention.

MODEL FRAMEWORK

We begin with an overview of LegalHealth's services. In the period of November 2013 to October 2014, LegalHealth worked with 5,747 clients on 6,423 legal matters. More than 80% of all legal matters were related to coverage (insurance, Medicaid, etc.), housing, income support, immigration, wills and estates. (**Table 1**).

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[10] Refer to https://www.health.ny.gov/health_care/medicaid/program/medicaid_health_homes/

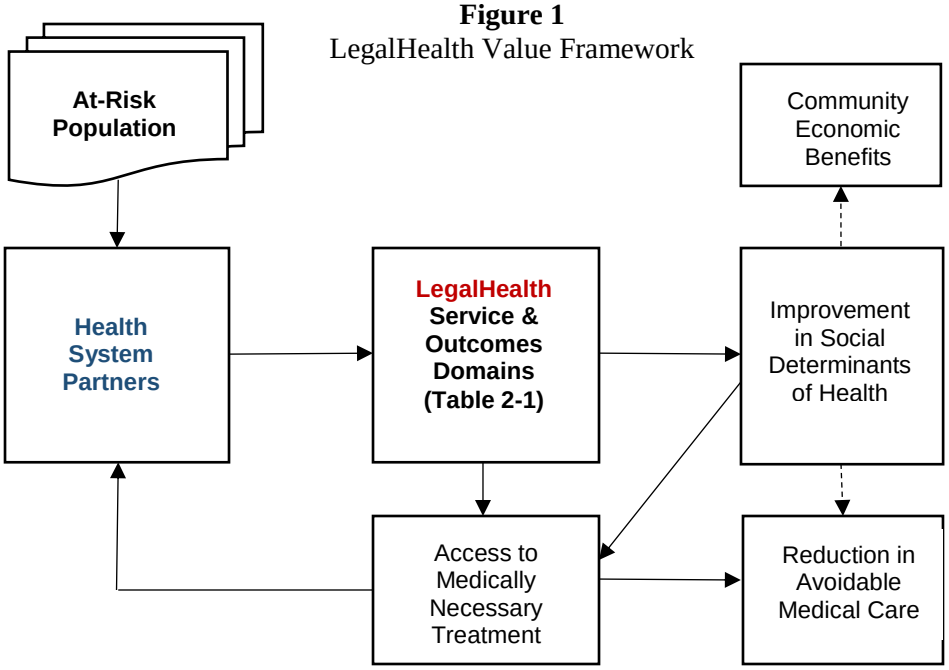
Table 1
Legal Health Annual Caseload (November 1, 2013 to October 31, 2014)

Service and Outcome Domain	Number of Clients*	No. of Matters	Percent of all Matters
1-Income Support (a)	1,077	1,251	19.48%
2-Immigration (b)	1,101	1,206	18.78%
3-Housing (c)	1,001	1,091	16.99%
4-Coverage (d)	657	780	12.14%
5-Family Issues (e)	495	564	8.78%
6-Debt Management (f)	287	318	4.95%
7-Employment (g)	210	215	3.35%
8-Education Access (h)	101	116	1.81%
9-Misc., inc. Wills, Advance Planning (i)	818	882	13.73%
TOTAL		6,423	100.00%

Notes: (a) includes SSDI, SSI, Public Assistance, Food Stamps, etc.; (b) includes a variety of immigration and naturalization issues; (c) includes landlord/tenant issues, subsidized housing, discrimination, etc; (d) includes enrollment in and disputes related to Medicaid, Medicare, private insurance, and other health-related programs; (e) includes custody/visitation, divorce, guardianship, child support, etc; (f) includes financial counseling, debt relief, collections, etc; (g) includes discrimination, wage claims, employee rights, etc; (h) includes access to education, learning disabilities, student financial aid, etc; (i) includes wills, torts, powers of attorney, applications for disaster relief, etc.; *counts of clients include some "double counting" in cases where clients have multiple service needs.

A conceptual framework diagrams the pathways through which LegalHealth's services result in both direct and indirect societal benefits as well as direct benefits to LegalHealth's hospital and health system partners. The start of the "benefit pathway" begins with an individual or potential client who is part of the at-risk population (e.g., vulnerable populations such as the indigent and elderly) and identified by LegalHealth's partners in the medical and social services community (**Figure 1**). Once LegalHealth determines that the potential client can effectively be served by LegalHealth, the potential client becomes a client and will be aided in one or more of the service domains identified in Table 1.

Figure 1
LegalHealth Value Framework



The services provided by LegalHealth affect many factors that impact health. LegalHealth services can improve medical access, thereby providing a revenue stream for partner hospitals and health systems and improving the flow of patients *out* of hospitals, which can also be a benefit to partner hospitals because most payers are moving toward a value-based reimbursement system. As a result of improved access to medically necessary services, the majority of which is primary care, at-risk populations are less likely to obtain avoidable medical care, such as expensive hospitalizations for poorly managed chronic diseases. LegalHealth services have three essential benefits: (1) direct benefits regarding the role of social determinants in assuring ongoing access to preventive care; (2) indirect benefits regarding reductions in avoidable medical care attributed to improved access to primary and preventive care; and (3) community economic benefits regarding LegalHealth's role in improving clients' financial stability.

RESULTS

Qualitative Analysis

By assisting with legal issues pertaining to housing, employment, income maximization, or other matters, and stabilizing patients in their communities, LegalHealth impacts patient health, which likely leads to unquantifiable cost savings for LegalHealth's healthcare partners and society. Through a qualitative analysis, we examine these inexact, sometimes intangible benefits and their value.

One way to better understand the benefits of its services is to focus on how LegalHealth assists individuals with chronic conditions and other serious non-acute conditions, a category that includes many elderly people. These types of clients best demonstrate LegalHealth's role in preventing avoidable medical services and assuring appropriate coverage for when services are

medically necessary. Where noted, the hospitalization cost data presented in this section are based on a query of the New York State Statewide Planning and Research Cooperative System (SPARCS) Health Data Query System,[11] pertaining to LegalHealth partner hospitals and health systems.[12] Other data sources are noted. A summary of the cost estimates for each condition is provided in **Table 2**.

Table 2
Average Costs Per Hospitalization and Per Day, Common Safety-Net Hospital Admissions, 2014

Service and Outcome Domain	Cost per Hospitalization	Cost Per Day of Hospitalization	Total Costs of Disease (2014; billions)
Asthma	$17,849	$4,972	$80
Diabetes	$19,093	$5,242	$250
Mental Disorders and Dementia	$33,453	$2,366	NA
Heart Disease and Stroke	$87,016	$11,062	$320
Kidney Disease	$33,394	$5,191	$46.9
High Risk Pregnancy	$232,190	$7,313	$10
Sickle Cell Disease	$21,780	$4,713	$1.21
Inpatient Cancer Treatment	$52,966	NA	$97.9
Notes & Sources: See text.			

Chronic diseases are the leading causes of disability and death in the United States, accounting for seven out of ten deaths and affecting the quality of life of more than 100 million Americans.[13] Diabetes, heart disease and stroke alone account for $560 billion in annual healthcare expenditures in the U.S.[14] Many of the most prevalent chronic diseases, especially asthma, diabetes, heart disease, stroke and depression, can be prevented or managed through early detection and coordinated primary care. Lack of preventive and primary care typically

[11] Statewide Planning and Research Cooperative System (SPARCS), "Health Data Query System " (Albany, NY: New York State Department of Health, 2015).

[12] The subset of LegalHealth partner hospitals included in this analysis is: Bellevue Hospital Center, Coler-Goldwtr Specialty Hospital, Coney Island Hospital, Harlem Hospital Center, Jacobi Medical Center, Kings County Hospital Center, Lincoln Medical & Mental Health Center, Maimonides Medical Center, Metropolitan Hospital Center, Montefiore Medical Center, Mount Sinai Medical Center, NY Presbyterian Hospital, NY Presbyterian Hospital Clmb, North Central Bronx Hospital, Queens Hospital Center, Woodhull Medical & Mental Health Center

[13] APHA, "Public Health and Chronic Disease: Cost Savings and Return on Investment," (Washington, DC: American Public Health Association, 2014).

[14] CDC, "Chronic Diseases and Health Promotion," (Atlanta, GA: U.S. Centers for Disease Control and Prevention, 2014).

leads to higher costs, often in the form of hospitalizations, expensive treatments, and patient burden.

In cases of chronic diseases, LegalHealth can remove or diminish barriers related to social determinants and provide access to primary care, thereby avoiding unnecessary hospitalization or expediting discharge from resource-intensive environments, such as acute care hospitals. For example, asthma and diabetes are two diseases for which hospitalization can often be avoided. Stress and poor housing conditions are asthma-triggering conditions that LegalHealth interventions address. Poor coverage and living conditions are examples of social determinants for diabetes. For other diseases, such as chronic kidney conditions or sickle cell disease, utilization of the ER is inevitable even when the disease is well managed.[15] However, utilization is higher among patients also affected by social determinants such as lack of coverage, housing and family law issues. In the cases of cancer and stroke, it is important to secure and maintain coverage, as avoiding hospitalization is also not an option. For cancer patients, legal intervention can lead to underinsured patients becoming fully insured, and for stroke patients, intervention can assure access to primary care following hospitalization. Mental disorders and dementia are often exacerbated by social determinants; LegalHealth's interventions can address these as well as help clients obtain coverage and, in the event of hospitalization, achieve a timely discharge to a nursing facility, community care provider, or the home. LegalHealth attorneys do this work in partnership with hospital social workers and other healthcare workers, focusing on the complex legal challenges that cannot be otherwise addressed by the healthcare team.

Many of the most seriously and chronically ill are seniors. These older individuals often live with and die from chronic illnesses that are preceded by long periods of physical decline and functional impairment, which can create complications in providing high quality care. Through legal intervention, many elderly people can overcome these barriers and access better quality healthcare by addressing health insurance issues, securing home care, doing end-of-life planning, or enforcing basic patient rights.

Primary care is valuable to both prevention and treatment of chronic diseases. Similarly, prenatal care and end-of-life care are shown to benefit from primary care as well. Primary care access is crucial in preventing poorly managed high-risk pregnancies. Regular prenatal care is the most appropriate strategy to manage complications and reduce overall costs.[16] Medical care at the end of life is believed to consume 10% to 12% of the total healthcare budget and 27% of the Medicare budget in the U.S.[17] LegalHealth has helped clients facing the final stages of

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[15] A. Ashley-Koch, Q. Yang, and R. S. Olney, "Sickle Hemoglobin (Hbs) Allele and Sickle Cell Disease: A Huge Review," *Am J Epidemiol* 151, no. 9 (2000); CDC, "Sickle Cell Disease," (Atlanta, GA: U.S. Centers for Disease Control and Prevention, 2011); P. J. Nietert, M. D. Silverstein, and M. R. Abboud, "Sickle Cell Anaemia: Epidemiology and Cost of Illness," *Pharmacoeconomics* 20, no. 6 (2002); S. D. Roseff, "Sickle Cell Disease: A Review," *Immunohematology* 25, no. 2 (2009).

[16] See generally M. R. Hawkins, "The Impact of a High-Risk Disease Management Program on Perinatal Outcomes in a Managed Care Organization," *Case Manager* 16, no. 4 (2005); C. Peterson et al., "Preventable Health and Cost Burden of Adverse Birth Outcomes Associated with Pregestational Diabetes in the United States," *Am J Obstet Gynecol* 212, no. 1 (2015); C. L. Scott et al., "Hospitalizations for Severe Complications of Pregnancy, 1987-1992," *Obstet Gynecol* 90, no. 2 (1997).

[17] E. J. Emanuel, "Cost Savings at the End of Life. What Do the Data Show?," *JAMA* 275, no. 24 (1996).

terminal illnesses gain access to palliative care in non-acute care settings, such as home hospice, settings that have been shown to improve outcomes and reduce costs for these types of patients.[18] LegalHealth also assists terminal patients with advance directives, use of which has been shown to reduce unwanted hospitalizations and costs of care.[19] Additionally, LegalHealth helps patients in obtaining home care, allowing them to be discharged from the hospital and remain stable in their communities.

Due to lack of access to preventable and primary care, the hospital emergency department (ED) often serves as a regular source of primary care for many individuals, especially low-income or uninsured individuals. This is widely viewed as a very inefficient arrangement, as EDs must maintain high levels of excess capacity to handle surges in demand. According to the CDC, in the U.S. in 2011 there were 136.3 million ED visits, or 44.5 visits per 100 individuals.[20] In addition, a very high proportion of ED costs are considered avoidable; individuals with regular sources of primary care visit the ED much less frequently.[21] By reducing avoidable ED visits and hospitalization through legal intervention, LegalHealth helps reduce unnecessary use of the ED. This allows the ED to focus on true emergencies, as is intended, and also saves money, as treatment in the ED costs an average of $1,200 per day.

We have emphasized the potential health system savings associated with improving access to medically necessary care while reducing the costs of avoidable hospitalizations and services; however, it is important to note that, by reducing avoidable hospital use and services, LegalHealth's goals are not in any way at odds with partner hospitals and health systems. As mentioned previously, healthcare delivery is moving toward a value-based reimbursement system, which encourages healthcare providers to deliver the best care at the lowest cost. The

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[18] See generally J. S. Bailes, "Cost Aspects of Palliative Cancer Care," *Semin Oncol* 22, no. 2 Suppl 3 (1995); C. H. Brooks, "The Potential Cost Savings of Hospice Care: A Review of the Literature," *Health Matrix* 1, no. 2 (1983); Emanuel, "Cost Savings at the End of Life. What Do the Data Show?; M. Maltoni et al., "Evaluation of Cost of Home Therapy for Patients with Terminal Diseases," *Curr Opin Oncol* 10, no. 4 (1998); S. K. Payne, P. Coyne, and T. J. Smith, "The Health Economics of Palliative Care," *Oncology (Williston Park)* 16, no. 6 (2002).

[19] For example, see D.W. Molloy, et al., "Systematic implementation of an AD program in nursing homes: A randomized controlled trial," *JAMA* 283, no. 11 (2000).

[20] http://www.cdc.gov/nchs/fastats/emergency-department.htm

[21] For example, see F. Althaus et al., "Effectiveness of Interventions Targeting Frequent Users of Emergency Departments: A Systematic Review," *Ann Emerg Med* 58, no. 1 (2011); S. A. Ismail, D. C. Gibbons, and S. Gnani, "Reducing Inappropriate Accident and Emergency Department Attendances: A Systematic Review of Primary Care Service Interventions," *Br J Gen Pract* 63, no. 617 (2013); S. R. Morgan et al., "Non-Emergency Department Interventions to Reduce Ed Utilization: A Systematic Review," *Acad Emerg Med* 20, no. 10 (2013); J. M. Pines et al., "Frequent Users of Emergency Department Services: Gaps in Knowledge and a Proposed Research Agenda," ibid.18, no. 6 (2011); D. Simonet, "Cost Reduction Strategies for Emergency Services: Insurance Role, Practice Changes and Patients Accountability," *Health Care Anal* 17, no. 1 (2009); New York Department of Health, "New York State All Payer Potentially Preventable Emergency Room Visits 2011-2012 (Statistical Brief #4)," (Albany, NY: New York State Department of Health, Office of Quality and Patient Safety, Bureau of Health Informatics, 2014).

value-based reimbursement model requires that healthcare systems work toward decreasing unnecessary and avoidable hospital use, while also addressing social determinants of health.[22]

Furthermore, by moving patients from uncompensated to compensated care, LegalHealth can create additional savings and benefits for their healthcare partners. For example, in a retrospective review of eleven patients with chronic diseases or conditions referred for insurance issues over two and a half years at one of LegalHealth's partner hospitals, the hospital received subsequent insurance reimbursements totaling $644,079 for services rendered, or an average of $58,553 per patient (**Table 3**). In the absence of LegalHealth's services, the hospital would probably not have been reimbursed for the care that they provided, and the patients would likely not have obtained insurance coverage for future medical care.

Table 3
Sample of Eleven Patients from One LegalHealth Partner Hospital: Medicaid Payments, 2014

Client/Medical Condition	Legal Matter	Medicaid Payment
1. Heart Condition	Immigration & Medicaid	$151,577
2. Stroke	Immigration & Medicaid	$37,005
3. Mental Health	Medicaid	$11,721
4. Seizures	Medicaid	$4,218
5. Arthritis, Asthma & Emphysema	Medicaid	$8,858
6. Cancer	Immigration & Medicaid	$191,832
7. Cancer	Medicaid Discontinuance	$14,350
8. Diabetes & Cancer Survivor	Medicaid Eligibility	$1,216
9. Stroke	Immigration & Medicaid	$70,723
10. Cancer	Immigration & Medicaid	$104,874
11. Diabetes & Arthritis	Immigration & Medicaid	$47,705
Average per Patient		$58,553
TOTAL, 11 Patients		$644,079

Cost-Benefit Analysis

The main focus in this section is the measure of the quantifiable direct value of LegalHealth benefits; however, it is likely that benefits also accrue to the local economy and result in indirect health benefits. Based on the scope of benefits presented in Table 1, we use the available data to estimate the dollar value of LegalHealth benefits. Direct hospital benefits are defined as the dollar amount a hospital inpatient or outpatient unit received in the form of reimbursement from

[22] See D. Bachrach, et al., "Addressing Patients' Social Needs: An Emerging Business Case for Provider Investment," The Commonwealth Fund, May 2014.

third-party payers; i.e., a measure of the benefits accrued to LegalHealth's hospital and health system partners.

The direct benefits accrued to partner hospitals are a function of two parameters: (1) the annual volume of services provided in which LegalHealth's interventions resulted in coverage; and (2) the mean charges (or likely reimbursement) per case or per episode for each of those cases. As discussed earlier, a third benefit to partner hospitals and health systems is "timely discharge," which is the result of LegalHealth interventions that enable discharged patients to be placed in supportive settings (e.g., stabilized housing, housing in the community with home care or institutional settings). While there are many direct and indirect benefits associated with these types of services, the main direct benefit stems from the fact that hospitals are typically reimbursed a fixed prospectively determined amount per service. Thus, longer stays imply lower per-case margins; there is a tangible economic benefit to discharging patients as soon as they are no longer in need of the intensive services provided by hospitals. To estimate the benefit of early discharge, we assumed, conservatively, that it is equal to an additional 10% of the direct benefits.[23]

Direct hospital benefits were calculated by multiplying the average expected reimbursement per case by the number of cases per year expected to involve an inpatient admission or an outpatient visit (e.g., a visit to the Emergency Department, urgent care center, or any other outpatient clinic). To calculate the cost of a charge per patient for the hospital inpatient setting we used New York State Department of Health SPARCS data, which is the state Medicaid database. For outpatient charges we used data from the Center for Medicare and Medicaid Services (CMS). To determine average inpatient hospital charges for LegalHealth clients, we first identified the most common diseases associated with an urban, predominantly indigent population. According to the New York State Health Department, the most common diseases and conditions faced by this population are asthma, chronic obstructive pulmonary disease (COPD), diabetes, heart failure, and hypertension. Additionally LegalHealth identified cancer, mental health disorders, and high-risk pregnancies to be very common conditions faced by their clients.

We then gathered SPARCS data on 17 LegalHealth partner hospital charges per episode of care for all chronic diseases. The average charge per episode of care for the partner hospitals for diagnosis groups related to these common hospital admissions was $151,021 per patient. For the outpatient charges, we used data from the New York State Department of Health, which reported an approximate mean pay per visit cost of $769 for New York City.[24] Both inpatient and outpatient amounts were adjusted for inflation using the medical component of the consumer price index (CPI)[25] and displayed in 2014 U.S. dollars. These average amounts were multiplied

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[23] For example, in the example of post-acute care for stroke, see generally "Services for Reducing Duration of Hospital Care for Acute Stroke Patients," *Cochrane Database Syst Rev*, no. 2 (2005); P. Langhorne and L. W. Holmqvist, "Early Supported Discharge after Stroke," *J Rehabil Med* 39, no. 2 (2007).

[24] New York Department of Health, "New York State All Payer Potentially Preventable Emergency Room Visits 2011-2012 (Statistical Brief #4)."

[25] Source: http://data.bls.gov/timeseries/CUUR0000SAM?output_view=pct_12mths

by the number of LegalHealth matters related to the inpatient and outpatient services affected by LegalHealth interventions.

In the period of November 2013 to October 2014, LegalHealth attorneys were engaged in 6,429 cases. Based on a manual query of case file data, 780 cases were related to health coverage and half of those (390) were related to lack of health insurance. Closer examination of the data revealed that about 7% of coverage cases involved an inpatient hospital admission and the remaining 93% involved an outpatient visit, either to an outpatient clinic of some kind or an emergency department or urgent care setting. These data are combined to estimate the value of direct hospital benefits accrued by hospital and health system partners (**Table 4**).

Table 4
LegalHealth Inpatient and Outpatient Medical Service Cases (November 2013 - October 2014) and Total Value of Benefit to Hospital and Health System Partners

Cases	Coverage Cases (%)	Coverage Cases (#)	Mean Charge per case	Value of Direct Hospital Benefit
Inpatient services, per year	7%	27.3	$151,021	$4,122,879
Added benefit from timely discharge (10%)	7%	27.3	NA	$412,288
Outpatient services, per year	93%	362.7	$769	$278,916
TOTAL	100%	390	NA	$4,814,083

Based on service use, LegalHealth clients resulted in a total of $4,122,879 in inpatient benefits, another $412,288 in benefits associated with timely discharge, and $278,916 in outpatient benefits. The total benefits accrued to partner hospitals and health systems are $4,814,083 for the specified one-year time period.

Separate from the direct hospital benefits described above, which are related to coverage, LegalHealth also collects data on the direct benefits received by patients in each of the other eight service domains shown in Table 1. We combine these data with the estimated direct hospital benefits to determine the overall value of LegalHealth's direct measured benefits (**Table 5**, column 2).

However, LegalHealth's internal data on direct benefits are not complete, as LegalHealth is not always able to collect exact dollar amounts of benefits resulting from their services. Thus, we make the conservative assumption that LegalHealth data represent 85% of actual dollar value of benefits. Each service domain (excluding the "Coverage" domain) is increased by 15% accordingly.

Each component of the calculation of the total value of LegalHealth interventions is shown in **Table 5**. All dollar amounts are in 2014 U.S. dollars. The first column repeats the nine service and outcome domains from Table 1. The second column reports the dollar value of the direct benefits associated with LegalHealth interventions, which is tracked by LegalHealth. The "Coverage" estimate reported in column 2 is not typically tracked by LegalHealth; thus, we carry

over the estimate generated in Table 4 ($4,814,083). Column 3 adds 15% to the data in column 2 to account for unmeasured benefits. An exception is the "Coverage" estimates (Domain 4), which is a full estimate and does not need to be adjusted for unmeasured benefits. The results are total benefits of approximately $7 million to $7.3 million, depending on the assumptions associated with unmeasured benefits.

Table 5
LegalHealth Total Value of Benefits (November 1 2013 - October 31 2014)

[1]	[2]	[3]
Service & Outcome Domain	Direct Measured Benefits	Including Unmeasured Benefits (+15%)
1-Income Support (g)	$1,596,385	$1,835,843
2-Immigration (h)	$10,285	$11,828
3-Housing (f)	$239,707	$275,663
4-Coverage (e)	$4,814,083 (j)	$4,814,083 (k)
5-Family Issues (d)	$6,732	$7,742
6-Debt Management (a)	$137,198	$157,778
7-Employment (c)	$40,842	$46,968
8-Education Access (b)	$38,675	$44,476
9- Misc., inc. Wills, Advance Planning (i)	$165,210	$189,992
TOTAL	$7,049,117	$7,384,372

Notes: (a) includes SSDI, SSI, Public Assistance, Food Stamps, etc.; (b) includes a variety of immigration and naturalization issues; (c) includes landlord/tenant issues, subsidized housing, discrimination, etc; (d) includes enrollment in and disputes related to Medicaid, Medicare, private insurance, and other health-related programs; includes a mix of directly measured LegalHealth benefits and calculations from Table 4-2; (e) includes custody/visitation, divorce, guardianship, child support, etc; (f) includes financial counseling, debt relief, collections, etc; (g) includes discrimination, wage claims, employee rights, etc; (h) includes access to education, learning disabilities, student financial aid, etc; (i) includes wills, torts, powers of attorney, applications for disaster relief, etc.; (j) sum of medical and direct benefits; see Table 4 and text; (k) already accounts for unmeasured benefits.

DISCUSSION

In order to conduct a cost-benefit analysis of LegalHealth interventions from the perspective of partner hospitals and health systems, two data points are needed: (1) the dollar value of direct benefits accrued to partner hospitals and health systems; and (2) LegalHealth's operating costs attributable to services to which the benefits are directly attributable. The dollar value of direct benefits accrued to partner hospitals and health systems is the total amount shown on Table 4, or

$4,814,083. The other important element—attributable operating costs of clinic operation—was reported by LegalHealth to be $2,413,000 in the 2014 fiscal year.[28] Of this amount, hospitals and health system partners contributed $996,843,[29] while the remaining amount was contributed through philanthropy.

The most appropriate approach to calculating a cost-benefit ratio for hospitals and health partners is to isolate the net direct dollar value of benefits accruing to the hospitals and health system partners, *not* including any indirect benefits accruing to the wider community as a result of improvements in social determinants of health and economic impact. This is the $4,814,083 amount. As for the appropriate operating cost amount, there are two relevant amounts: (1) the amount spent by partner hospitals and health systems during the study period, and (2) LegalHealth's day-to-day clinic operation costs.

Strictly from the hospital and health system perspective during the study period, if we divide the total benefit ($4,814,083) by the total cost (or "investment" or expense) on the part of hospitals ($996,843), the result is that, for every $1 spent by hospitals, the hospitals received $4.83 in benefits during the study period. Using a non-philanthropy-sustained approach, if hospitals cover the full cost of clinics (LegalHealth's total cost of clinic operation is $2,413,000), then for every $1 spent, they would receive $2 in benefits.

CONCLUSIONS

The services provided by LegalHealth affect a variety of factors that impact health and well-being and do so through several channels. LegalHealth services improve access to medically necessary services. These services then become a revenue stream for partner hospitals and health systems. By assuring access to medically necessary services, the majority of which are primary care, at-risk populations are less likely to receive avoidable medical care, such as expensive hospitalizations for poorly managed chronic diseases.

Moreover, by directly addressing the most important social determinants of health (e.g., employment, income, and housing), the services provided by LegalHealth have three other essential benefits. The first is a direct effect: by addressing social determinants, LegalHealth interventions are bolstering the foundations of preventive care and primary care. Second, improved access to preventive care and primary care result in cost savings downstream. Finally, the community economic benefits associated with LegalHealth's role in improving clients' financial stability (e.g., reducing stress; stabilizing employment) contribute to the health of the local economy and improve access to factors that continue to have an indirect, positive effect on health, such as community connections, education, and social support networks.

[28] The estimated cost of operating a LegalHealth clinic at hospitals with one weekly clinic is $65,000. The cost for hospitals with two weekly clinics is $130,000.

[29] The median annual hospital contribution during this time period was $44,000.

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