State of the Industry

Expanding the boundaries of hospital growth and patient care
1. “Growing” problems for hospital economics

2. Reigniting growth through revenue diversification

3. Wading upstream to address social determinants
Where did all the fans go?

Network struggling to define financially sustainable path forward

Confronting declining subscribers and high fixed costs

13M Subscribers lost in 6 years, 2011-2017

ESPN pays top dollar for football, but audience isn’t buying

ESPN pays the NFL $1.9 billion annually, nearly twice what any of its network rivals shell out...

\[ \text{The New York Times, Nov. 2016} \]

ESPN increased prices, reduced variable costs

54% Increase in the amount that cable and satellite providers pay ESPN per subscribers from 2011-2017

550 Employees laid off between 2015 and 2017

Source: New York times, “[ESPN] committed to high long-term fixed costs (broadcast rights) in exchange for declining variable revenues (cable subscription fees and advertising dollars),” November 2016; Fortune, “What’s next for ESPN after its latest round of layoffs?,” November 2017; Health Care Advisory Board interviews and analysis.
Hospital economics under siege

Expense growth continues to outpace revenue growth

Revenue and expense growth rates for non-profit hospitals

2009-2018 medians

Growth hydraulic breaking down

Traditional cross-subsidies beginning to erode

An historical balance

-5%
Decline in inpatient volumes, 2013–2017

47%
Outpatient services as a percentage of overall health system revenue, 2016

16%
Cumulative increase in inpatient commercial prices, 2013-2017

Disrupted by new market dynamics

Direct pricing threats
Medicare productivity adjustments; commercial denials; RAC reemergence; site-neutral payments; DSH cuts; HDHP-fueled bad debt

Ongoing payer mix, case mix shifts
Increases in lower reimbursed, publicly insured cases; growth in lower-margin medical care; continued uncompensated care in states without Medicaid expansion

New payment models
Pay-for-performance programs; bundled payment models; accountable care organizations; direct-to-purchaser contracting; MACRA payment tracks

Persistent volume trends
Outmigration of profitable procedural care; patients with HDHPs foregoing care; growth of outpatient procedures stagnating; care management reducing utilization

Limited opportunity for future price increases

Traditional growth lever reaching limits of effectiveness

Several factors reducing effectiveness of increasing the price of care

1. Demographics shifting towards public payers
   
   Annual Medicare enrollees
   
<table>
<thead>
<tr>
<th>Year</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>38.1M</td>
</tr>
<tr>
<td>2006</td>
<td>43.4M</td>
</tr>
<tr>
<td>2016</td>
<td>56.5M</td>
</tr>
</tbody>
</table>

2. Consumer financial exposure generating public scrutiny
   
   "Blame Emergency Rooms for the Out-of-Control Cost of Health Care"
   
   *The New York Times*
   
   "Hospital ER Fees: They've Been Secret. We're Uncovering Them."
   
   *Vox*

3. Commercial insurers increasingly assertive
   
   Anthem no longer paying for hospital outpatient MRIs, CTs
   
   OptumCare influences referral patterns through physician group acquisition

"Commercial payment rate growth will have to decline, or eventually the difference between commercial rates and Medicare rates will grow so large that some hospitals will have an incentive to focus primarily on patients with commercial insurance. Thus, in the long term, Medicare beneficiaries’ access to care may in part depend on commercial payers restraining rates paid to hospitals."

*Medicare Payment Advisory Commission Report to Congress, March 2017*

Source:
- Medicare Payment Advisory Commission, "Report to Congress," March 2017
- Vox, "Hospital ER Fees: They've Been Secret. We're Uncovering Them," February 2018
- Becker’s, "With 8k More Physicians than Kaiser, Optum is 'Scaring the Crap out of Hospitals'," April 2018
- Health Care Advisory Board interviews and analysis.
## No easy victories in volumes growth

New utilization patterns exacerbate economic challenges

<table>
<thead>
<tr>
<th>Inpatient growth obstacles</th>
<th>Outpatient growth obstacles</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>High-value volume declines</strong></td>
<td><strong>A significantly decreased price point</strong></td>
</tr>
<tr>
<td>(1.85%)</td>
<td>(28%)</td>
</tr>
<tr>
<td>Projected decline in utilization per-1000 people in the US for top four highest revenue inpatient service lines¹</td>
<td><strong>Lower per-case payment rate for partial knee replacement</strong> in an ASC versus a HOPD</td>
</tr>
<tr>
<td><strong>Not enough to go around</strong></td>
<td><strong>An increasingly crowded field</strong></td>
</tr>
<tr>
<td>Lack of volumes growth pits hospitals against one another to win share of what remains</td>
<td>Hospitals are competing against everyone from physician offices to Amazon for outpatient volumes</td>
</tr>
</tbody>
</table>

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1) General surgery, orthopedics, neurosurgery, cardiac services.

Source: Advisory Board Market Scenario Planner; Health Care Advisory Board interviews and analysis.
Unable to capture system advantages

M&A typically increases both revenue—and cost structures

Few health systems have sufficient cost discipline for M&A to grow margin

Not many health systems see revenue growth outpace expense growth

n=273

Lack of cost discipline inhibits M&A profitability

“In a survey of the consolidated financial statements of 104 health systems operating 47% of U.S hospitals, despite a more than thirty-fold difference in operating revenues between the largest and smallest systems, there was no statistical relationship between total operating revenues and operating profit in 2017, or the change in operating profit from 2015 to 2017.”

Navigant
September 2018

“In an analysis of the financial results for the 50 largest U.S. health systems, significant M&A activity was correlated with increased revenue and decreased margin.”

McKinsey
January 2018

Health systems whose average annual revenue growth exceeded average annual expense growth by more than one percentage point between 2011 and 2016
Confronting a new economic reality

What if the numbers don’t add up?

Downward pressure on market price, provider collections
- Fewer patients covered by commercial payers
- More aggressive payers, employers refusing payments or narrowing networks
- Financially exposed consumers turning to media to publicize frustrations

Stagnating high-revenue volumes growth
- Demand for traditional revenue-driving procedural care stalling
- Many remaining services out-migrating to lower-revenue settings
- Increased competition from all directions

Uncertainty in sufficiency of patient care revenue
- Wide range of potential options confronting providers
- Lack of consistent risks and rewards cloud simple decision making
- Most options require new in kind competencies

Source: Health Care Advisory Board interviews and analysis.
1. “Growing” problems for hospital economics

2. Reigniting growth through diversification

3. Wading upstream to address social determinants
Clear interest in revenue diversification

New-in-kind revenue streams a hot topic for provider executives

Advisory Board Research Annual Health Care CEO Survey results

Percent respondents ranking diversified revenue growth as high priority

56% Of all hospital leaders

70% Of community hospital leaders

Hospital systems that can supplement inpatient revenue with new, diversified revenue streams are more likely to remain successful and enhance consumer value...these investments are generally less expensive than building inpatient capacity and can help mitigate inpatient utilization declines.

"Brad Spielman
VP, Senior Credit Officer
Moody’s Investor’s Service"

Failing to diversify may require tough tradeoffs

More aggressive cost-side solutions may be needed to sustain margins

⚠ Facility closure
⚠ Budget cuts
⚠ Layoffs
⚠ Service rationalization

Source: Advisory Board Research Annual Health Care CEO Survey, 2018; “Moody’s: Cost controls and revenue diversification to offset Bradesco’s lower margins and support capital,” Moody’s Investor’s Service, July 2018; Health Care Advisory Board interviews and analysis.
Narrowing our focus

Four filters to identify top opportunities for revenue diversification

**Substantial revenue opportunity**
Organizations should prioritize investments that have the opportunity to significantly inflect year-over-year operating margin performance.

**Capitalizes on existing capabilities**
Providers should not invest in wholly unfamiliar terrain, and should instead focus on hospital-centric products that capitalize on existing skillsets.

**Aligned with broader mission**
Diversified investments should advance broader system goals to improve their value proposition as a high quality, cost efficient organization.

**Replicable across markets**
For systems operating in multiple geographic areas, investments should be prioritized according to their scalability across regions.

Source: Health Care Advisory Board interviews and analysis.
Diversifying into new revenue streams

Primary opportunities to generate diversified revenue

Most traditional

Philanthropy
Health plan

Most emergent

Pharmacy
Venture investment
Intellectual property

Reevaluate traditional opportunities for revenue diversification
Harness strategic advantages to capitalize on emerging revenue opportunities

Potential diversification related-risks to consider

⚠️ Some opportunities short-term in nature
⚠️ Most health care-adjacent industries highly competitive
⚠️ Exposure to economics and threats of new business

Source: Health Care Advisory Board interviews and analysis.
Development puts meaningful dollars in play

FY2018 production figures show wide range, $9M median

Total dollars raised (FY2018)

In millions of dollars

n=75


Still one of the most efficient dollars available

Most of the sector maintaining sub $0.30 cost to raise one dollar

Cost to raise a dollar (FY2018)
n=65

Overall margin impact continues to impress

Philanthropy providing big boost during tough economic time

**Philanthropy’s net margin impact (FY2018)**

*Hospital margin points contributed by philanthropy*

n=71

<table>
<thead>
<tr>
<th>Percentile</th>
<th>Margin Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>10th</td>
<td>0.0%</td>
</tr>
<tr>
<td>20th</td>
<td>0.2%</td>
</tr>
<tr>
<td>30th</td>
<td>0.3%</td>
</tr>
<tr>
<td>40th</td>
<td>0.4%</td>
</tr>
<tr>
<td>50th</td>
<td>0.6%</td>
</tr>
<tr>
<td>60th</td>
<td>0.8%</td>
</tr>
<tr>
<td>70th</td>
<td>1.1%</td>
</tr>
<tr>
<td>80th</td>
<td>1.5%</td>
</tr>
<tr>
<td>90th</td>
<td>3.1%</td>
</tr>
</tbody>
</table>

Now to the “holy grail” of cross subsidies

(In theory) lots of running room in the health plan premium dollar

Percentage of total revenue attributed to health plan premium revenue

- Sharp Health, 2017: 39% of $1.3B
- Spectrum Health, 2017: 60% of $1.8B

Assessing the premium revenue opportunity
2017 health system premium revenue

- Sharp Health Plan: $1,360,121,000
- Priority Health (Spectrum Health): $1,806,336,000

Profitability not guaranteed

Of provider-sponsored health plans created since 2010 have generated profits

10%

1) Does not include relevant operating expenses.

Source: Health system consolidated financial statement analysis; Health Care Advisory Board interviews and analysis.
New plan development an extensive undertaking

Substantial scale, capital, expertise necessary for success

Benchmarks heard in the research

<table>
<thead>
<tr>
<th>Scale</th>
<th>Capital</th>
<th>Capabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>136,336</td>
<td>$329M</td>
<td>Regulatory/actuarial expertise, Operational Infrastructure</td>
</tr>
</tbody>
</table>

1) Based on 15.56% of anticipated annual health expenditures; assumes annual per-capita health expenditure of $5,141.

Partnership accelerates plan development

A diverse set of potential partners provide scale, capital, and capabilities

Aetna
Offers range of “accountable care solutions” from delegated risk to co-branding and joint ventures

Partnering with:
- Banner Health
- Texas Health Resources

Cigna
Launched CareAllies Inc. to help providers, including those launching their own plans, transition to value-based care

Partnering with:
- St. Joseph Hoag Health
- Seton Healthcare Family

Anthem
Partnering with providers in select markets; after launching Vivity in 2014, expanded to Wisconsin in 2016

Partnering with:
- Vivity
- Aurora Health Care

Provider-sponsored health plan partnership trends

100%
Of new provider sponsored health plans between 2015-2017 were joint ventures

27%
Of health care executives planning to launch MA plan in next four years

59%
Of respondents planning to launch MA plan that intend to seek partnership

Looking beyond the usual suspects

A new wave of revenue diversification opportunities emerging

Primary opportunities to generate new revenue streams

Most traditional

- Philanthropy
- Health plan

Reevaluate traditional opportunities for revenue diversification

Most emergent

- Pharmacy
- Venture investment
- Intellectual property

Harness strategic advantages to capitalize on emerging revenue opportunities

Source: Health Care Advisory Board interviews and analysis.
Big dollar market means big margin potential

But even incremental improvements will help

Model: typical pharmacy operations versus best in class
Assumptions about typical pharmacy performance:
• Pharmacy supply expenses constitute 10% of overall expenses
• Employee drug benefit expenses constitute 2% of overall expenses
• Baseline organization has minimal initial investment in pharmacy:
  • Minimal steerage of employee population to in-house pharmacies (≈10% scripts filled internally)
  • Pharmacy provides ≈5% of organization’s contribution margin

Operating margin impact by achieving best-in-class pharmacy performance

<table>
<thead>
<tr>
<th>Cost avoidance</th>
<th>Growth</th>
<th>Total margin potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Counteract inflationary pressure</td>
<td>Invest in pharmacy business</td>
<td>0.75%</td>
</tr>
<tr>
<td>Control utilization</td>
<td>Manage risk population</td>
<td>0.62%</td>
</tr>
<tr>
<td>0.60%</td>
<td></td>
<td>2.8%</td>
</tr>
<tr>
<td>0.80%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Typical pharmacy performance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating margin improvement</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Estimated margin improvement potential for moving from typical to best-in-class pharmacy performance

Source: Health Care Advisory Board interviews and analysis.
## Additional details on analysis

### Assumptions and constants for high performance

<table>
<thead>
<tr>
<th>Inflationary pressure</th>
<th>Uncontrolled utilization</th>
<th>Manage risk population</th>
<th>Invest in pharmacy business</th>
</tr>
</thead>
</table>
| Annual price growth limited to general inflation rather than drug inflation by optimizing contractual negotiation and compliance | Lowest price therapeutic equivalent drugs are placed on formulary and utilized in practice with full compliance:  
  - Formulary adherence is >99%  
  - All available generics and biosimilars are adopted and used  
  - Inpatient formulary mix does not significantly change from year-to-year  
  - Site of care policy managed closely, limiting to one or two exceptions per month | Employees steered to provider-affiliated pharmacies rather than third parties most of the time:  
  - Affiliated pharmacies dispense ≈95% of employee scripts; affiliated pharmacies serve both specialty and retail scripts  
  - Drug benefit makes up ≈20% of the overall cost of employee health benefits  
  - Third-party pharmacy gross profit margin is ≈20% | Pharmacy investments contribute sizeable net income to the organization:  
  - Revenue contributions come from retail, specialty, and infusion business  
  - Specialty pharmacy margin is approximately 15% after accounting for operating expenses  
  - Contribution margin equates to ≈30% of the organization’s overall contribution margin |

### Assumptions:
- Volume growth provides annualized 1.6% additional discount
- All drugs that can be purchased on contract are done so; drugs purchased off contract are ≈5–15% higher in price

Source: Health Care Advisory Board interviews and analysis.
### Unpacking the business case for pharmacy

Evaluate strategic advantages against structural risks

#### Unearthing the pharmacy opportunity

<table>
<thead>
<tr>
<th>Health system strategic advantages</th>
<th>Structural market challenges</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Control over “demand” of supply chain: use purchasing power to put downward price pressure on suppliers</td>
<td>CMS cuts 340B payments</td>
</tr>
<tr>
<td>2. Alignment with prescribing physicians: shift prescribing patterns to highest-value drugs</td>
<td>• Reduces Medicare Part B payments for drugs purchased under the 340B program by $1.6B in 2018</td>
</tr>
<tr>
<td>3. Access to medical record, patient health history: improve health outcomes through integration of care</td>
<td>New entrants gain foothold</td>
</tr>
<tr>
<td>4. Proximity to patient, provider, and pharmacist: retain script volume from pharmacy adjacent services</td>
<td>• Amazon-PillPack acquisition gives Amazon instant access to all 50 states where PillPack is licensed as a mail-order drug company</td>
</tr>
</tbody>
</table>

**CMS cuts 340B payments**
- Reduces Medicare Part B payments for drugs purchased under the 340B program by $1.6B in 2018

**New entrants gain foothold**
- Amazon-PillPack acquisition gives Amazon instant access to all 50 states where PillPack is licensed as a mail-order drug company

**Incumbents vertically integrate**
- CVS-Aetna\(^1\)
- Cigna-Express Scripts
- Optum-CatamramRx\(^2\)

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1) Pending closure.
2) Advisory Board is a subsidiary of Optum. All Advisory Board research, expert perspectives, and recommendations remain independent.

Innovation centers emerging nationwide

Providers seeking to apply innovative capabilities in new ways

Hospitals and health systems developing innovation centers

Growing prevalence

92%

Increase in number of U.S. hospitals with innovation centers from 2015 (25) through 2017 (58)

Growing interest

30%

Percent of hospital leaders planning to build innovation center in next 18 months

However, no standard definition

A wide array of options for innovation centers

Observed innovation center models

- Venture investment
- Annual competition
- Internal business accelerator
- Comprehensive innovation center

Select innovation center focus areas

- Operations
- Care delivery
- Patient experience
- Intellectual property

Primary strategic advantages from innovation center investment

- **Higher clinical quality** enabled by care pathways development and investment in digital medicine

![Image of higher clinical quality]

- **Enhanced brand as innovator** with potential for generating increased volumes, donor funding, and more

![Image of enhanced brand]

**Improved operational efficiency** as a result of process improvement pilots and initiatives

![Image of improved operational efficiency]

**New revenue streams** through venture investment and monetization of intellectual property (IP)

![Image of new revenue streams]
Two primary paths to new revenue

Distinct yet highly complementary functions

Defining the primary opportunities to grow revenue through innovation

Venture investment

- Investment arm that buys equity stakes in early-stage growth companies
- Sources investments **externally**
- Health system acts as strategic partner to grow value until liquidity event occurs

IP¹ commercialization

- Business development arm tasked with identifying and monetizing IP
- Sources investments **internally**
- Health system acts as initial financier and strategic partner

Capture external innovation

Cultivate internal innovation

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¹ Intellectual property.

Source: Health Care Advisory Board interviews and analysis.
## Evaluating revenue diversification options

Assess the business case and potential hospital strategic advantages

<table>
<thead>
<tr>
<th>Diversification lever</th>
<th>Necessary investment</th>
<th>Industry risks</th>
<th>Hospital advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Philanthropy</td>
<td></td>
<td>Potential volatility due to economic conditions</td>
<td>Existing large donor base, not-for-profit status</td>
</tr>
<tr>
<td>Health plan</td>
<td></td>
<td>High startup costs, substantial necessary investment in expertise and infrastructure</td>
<td>Nexus of care delivery, attributed patient lives, existing payer relationships</td>
</tr>
<tr>
<td>Pharmacy</td>
<td></td>
<td>Potential 340B changes, PBM consolidation, new industry entrants</td>
<td>Nexus of care delivery, attributed patient lives, existing payer relationships</td>
</tr>
<tr>
<td>Venture investment</td>
<td></td>
<td>High annualized volatility relative to other securities</td>
<td>Clinical capabilities, expertise, infrastructure, and human capital</td>
</tr>
<tr>
<td>Intellectual property commercialization</td>
<td></td>
<td>Health IT a highly competitive market, high startup cost</td>
<td>Clinical capabilities, expertise, infrastructure, and human capital</td>
</tr>
</tbody>
</table>

1) Based on select illustrative examples.

Source: Health Care Advisory Board interviews and analysis.
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Social determinants of health in the spotlight

News coverage expanding from trade publications to mass media

**STAT**  
April 30, 2019  
“We need a national conversation about health—not just about health care”

**The Wall Street Journal**  
September 16, 2018  
“Health Care Looks Beyond Medicine to Social Factors”

**Reuters**  
March 7, 2019  
“Homing in on health: U.S. homeless prescribed safe, stable housing”

**Modern Healthcare**  
August 25, 2018  
“Hospitals tackling social determinants are setting the course for the industry”

**The Economist**  
September 1, 2018  
“Loneliness is a serious public-health problem”

**NBC**  
March 28, 2018  
“Is your neighborhood hurting your health? Here’s how to change it.”

Progressive leaders pushing system upstream

When you look at the dollars health care systems have, our nonprofit status, and the talented and mission-based people we have,

why wouldn't we use that chassis across the United States and invest that same amount of money on a new focus: social determinants of health?

That seems awfully logical to us—and besides, if we don't start investing in our communities, who will?

Randy Oostra, President and CEO, ProMedica
Five major interlocking non-clinical risk factors

“Social determinants of health are the conditions in which people are born, grow, live, work, and age that shape health.”

KAISER FAMILY FOUNDATION

Most pressing social determinants of health to inflect to drive equity

- **Housing**
  - Housing quality and instability
  - Neighborhood violence

- **Food**
  - Inaccessible affordable, healthy food
  - Disconnection from benefits (e.g., SNAP)

- **Economics**
  - Under-employment
  - Insufficient wages
  - Lack of insurance coverage

- **Interpersonal**
  - Social isolation
  - Discrimination
  - Adverse childhood events
  - Trauma

- **Education**
  - Health illiteracy
  - Lack of language skills
  - Quality of public schools

Undeniable impact on health, and business

Consequences associated with unaddressed social determinants of health

5X
Higher risk of developing mental health conditions due to exposure to violence and feeling unsafe during childhood

$155 billion
Annual U.S. health system costs due to food insecurity

9 years
Reduced average lifespan for 77 million Americans with low levels of education

$77B
Direct annual cost of health disparities on the US health care system

2X
Higher death rate for individuals unemployed for more than six years

$2,320
Per capita annual health system costs due to housing instability

Multiple avenues to drive impact

Decision guide for health systems’ role in community health interventions

Why isn’t this community health need already met?

Insufficient resources

What is the root cause of underinvestment in this need?

Efforts exist, but are disjointed

Current efforts are nonprofit/charity-based

Little to no incentives exist for change

Are community leaders open to the system taking a leadership role in coalescing efforts?

No

Yes

Convene range of cross-industry stakeholders, drive collaboration between existing organizations

Funder

Devote significant resources, staff, or financial aid to partnerships and community health programming

Leader

Use institutional scale to drive change by building a program or advocating for policy change

Source: Health Care Advisory Board interviews and analysis.
Diversified housing offerings meets range of needs

UVMMC¹ develops housing portfolio through partnership

<table>
<thead>
<tr>
<th>Short-Term</th>
<th>Permanent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Infrastructure</strong></td>
<td></td>
</tr>
<tr>
<td>Harbor Place Rooms: 22 family units, 34 single units with an average stay of 8 days</td>
<td>Beacon Apartments: 18 single units across an indefinite stay</td>
</tr>
<tr>
<td><strong>Services</strong></td>
<td></td>
</tr>
<tr>
<td>Case management: UVMCC funds 1 onsite FTE Case Manager from CHC¹ who connects patients to CHC provider and fulfills additional needs (e.g., insurance)</td>
<td></td>
</tr>
<tr>
<td>Mental health services: Howard Mental Services dedicates one case manager to each site (1 FTE), who is reimbursed separately</td>
<td></td>
</tr>
<tr>
<td>Additional clinical services: Various providers (e.g., Visiting Nurse Association, physician house call) visit each site as needed</td>
<td></td>
</tr>
<tr>
<td><strong>Funding</strong></td>
<td></td>
</tr>
<tr>
<td>Pay per diem rate for patients Guarantees minimum number of nights</td>
<td>Helped fund purchase and renovation of motel and pays operations amount per patient</td>
</tr>
<tr>
<td><strong>Results</strong></td>
<td></td>
</tr>
<tr>
<td>Decreased inpatient admissions: Reduced from 95 to 30 stays</td>
<td>Decreased annual cost of care: Dropped health care from $750K to $250K for permanently housed patients</td>
</tr>
<tr>
<td>Decreased ED utilization: Reduced from 161 to 94 visits</td>
<td></td>
</tr>
</tbody>
</table>

1) University of Vermont Medical Center.

Source: Population Health Advisor interviews and analysis.
University of Vermont Medical Center

- 562-bed medical center located in Burlington, Vermont
- Sole tertiary hospital in the state

► Developed a partnership with Champlain Housing Trust, a non-profit that creates and preserves affordable housing in Vermont; UVMMC pays to house their patients in Champlain Housing Trust’s buildings and funds additional case management services by the Community Health Centers of Burlington

► Additional services are provided onsite (e.g., Howard Mental Services, Visiting Nurse Association) and reimbursed independently

► Started with short-term housing, expanded to include permanent, and developing intermediate housing that will include additional onsite services in mid-2017

Source: Population Health Advisor interviews and analysis.
Universalize screening to unearth hidden challenges

ProMedica’s cross-setting food insecurity screening process

**Short-term response to inpatient admission**

RN performs initial food insecurity screen using two-question Hunger Vital Sign™

LCSW or discharge planner follows up with identified patients to validate need and connect to any additional psychosocial services

Patient discharged from hospital with one day’s worth of calories, information on follow-up support (e.g., federal programs, food banks), and PCP appointment

**Long-term support embedded in primary care**

Primary care staff across all practices screen for food insecurity and PCPs refer appropriate patients to the system’s food clinic

Patients visit food clinic for healthy, condition-specific food once a month for six months before needing new referral, encouraging regular preventive care

| 53% Reduced readmission rates | 15% Reduced health care costs | 781K Patients screened in 2017 | 3.3K Households served in 2017 |

Source: Population Health Advisor research and analysis.
ProMedica

Not-for-profit, 13-hospital healthcare organization based in Toledo, Ohio serving communities in 30 states

- System-wide food insecurity screenings prompted by food insecurity prevalence and link to obesity; patients are screened for food insecurity in both the inpatient and outpatient setting, with differing interventions
- In 2017, ProMedica conducted more than 781,000 food security screenings and the food clinic served 3,260 unique households
- Preliminary data from a small group of Medicaid patients showed those who screened positive and visited the food clinic had 3% reduction in ED usage, 53% reduction in readmission rates, 4% increase in primary care usage, and 15% reduction in healthcare costs compared to those not using the program

Source: Population Health Advisor research and analysis.
Link low-income patients to available entitlements

BMC’s¹ StreetCred program embedded in clinic to provide on-site financial aid

Provider surfaces financial need, introduces StreetCred program during the patient visit

Tax assistance volunteer helps patient prepare tax return in office at a convenient time

Tax return is filed and patient receives Earned Income Tax Credit

“Did you work this year?”

Furthers physician relationship
- A nonjudgmental question from a trusted source opens up the conversation about financial need
- Patients report feeling greater trust in and stronger connection to their provider as a result of StreetCred

Requires minimal investment
- Tax assistance volunteers, who receive free training online or through a tax assistance program, provide the bulk of the workforce
- One funded supervisory position is required per IRS regulations
- Volunteers meet with patients in available clinic spaces

1,700
Families received EITC through StreetCred since FY 2016

$3M
Total amount of money recovered by families since FY 2016


¹ Boston Medical Center.
Boston Medical Center

487-bed safety net hospital in Boston, Massachusetts

- Pediatricians at BMC realized that patients’ parents weren’t filing for tax credits despite financial needs or were losing hundreds of dollars paying for tax preparation despite the availability of free tax assistance programs across the city.

- Brought tax assistance into the doctor’s office with the StreetCred program staffed by volunteers and program supervisors. Volunteers meet with patients directly after their appointment or at another scheduled time to help them file their taxes and enroll in other wealth-building services.

- Of the families StreetCred has helped since 2016, 20% had not filed taxes the previous year, 23% reported not knowing whether they had ever received the Earned Income Tax Credit (EITC), and 63% did not know what the Earned Income Tax credit was. Since FY2016, BMC has helped 1,700 families to recover $3 million.

Source: Population Health Advisor interviews and analysis.
Empower community liaisons to engage patients

Methodist Le Bonheur’s congregational health network offers embedded community support

- **Hospital outreach coordinator**
  - Trains selected community liaisons on privacy protocols, recordkeeping, and health leadership
  - Enrolls and identifies patients who may benefit from the program

- **Community liaison**
  - Coordinates volunteer community caregivers for post-discharge support
  - Provides mental health first aid, hospital visitation, and spiritual care for terminally ill patients

- **Patient**
  - Opt into network support upon inpatient admission
  - Participates in health education courses

20%
Reduction in readmissions among program participants

$4.1 M
Aggregate cost savings from decreased utilization

Source: Population Health Advisor interviews and analysis.
CASE EXAMPLE

Methodist Le Bonheur Healthcare

Seven-hospital, 1,600-bed health system based in Memphis, Tennessee

► Developed the Congregational Health Network through formal agreements to leverage social infrastructure of 480 area churches and provide post-discharge management to high-risk patients

► Hospital staff members visit congregations to identify and enroll patients into the program. Church liaisons, identified as strong leaders in the community, educate congregation members about healthful living and disease prevention

Source: Population Health Advisor interviews and analysis.
Tailor self-management education to health literacy

Grady’s easy-to-follow medication card and timeline drive adherence

<table>
<thead>
<tr>
<th>Medicine</th>
<th>Simplified information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simvastatin</td>
<td>• Take 1 pill at night&lt;br&gt;• For cholesterol</td>
</tr>
<tr>
<td>Furosemide</td>
<td>• Take 2 pills in the morning and 2 at night&lt;br&gt;• For fluid</td>
</tr>
<tr>
<td>Insulin</td>
<td>• Inject 24 units before breakfast&lt;br&gt;• Inject 12 units before dinner&lt;br&gt;• For diabetes (sugar)</td>
</tr>
</tbody>
</table>

Jane Doe’s daily medication schedule

<table>
<thead>
<tr>
<th>Time</th>
<th>Simvastatin</th>
<th>Furosemide</th>
<th>Insulin</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00-9:00am</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>9:00-10:00am</td>
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<tr>
<td>10:00-11:00am</td>
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<td>11:00-12:00pm</td>
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<td>12:00-1:00pm</td>
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<td>1:00-2:00pm</td>
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<td>2:00-3:00pm</td>
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<td>3:00-4:00pm</td>
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<tr>
<td>4:00-5:00pm</td>
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<tr>
<td>5:00-6:00pm</td>
<td>☾</td>
<td>☾</td>
<td></td>
</tr>
<tr>
<td>6:00-7:00pm</td>
<td>☽</td>
<td>☽</td>
<td></td>
</tr>
</tbody>
</table>

Schedule may include warning signs for when dietary guidelines influence outcomes

Having times down the rows of the table allows for easy readability when multiple medications are needed

Grady Memorial Hospital

Emory University’s Grady Memorial Hospital (GMH), a large Atlanta-based public hospital

- Partnered with Rollins School of Public Health to create easy-to-read resources for polypharmacy patients with low health literacy

- The Pharmacy Intervention for Limited Literacy (PILL) program uses visual cues to communicate medication regimens. Medication placards and printed timelines provide the color, size, and shape of each pill, along with simplified directions for taking the medication.

- Of patients receiving a placard, 92% found it very easy to understand and 94% found that it helped them to remember information like the purpose of their medications or what time of day to take them.

Source: Population Health Advisor interviews and analysis.
Next level strategy is holistic community investment

Nationwide Children’s Healthy Neighborhoods, Healthy Families’ approach

- Quality education
- Strong workforce
- Affordable housing
- Safe neighborhoods
- Health & wellness

Healthy and strong communities

- 58 Housing units combined with workforce training
- 24 Childcare slots opened
- 339 Homes improved
- 2,000 Patients in school-based clinics

Source: Population Health Advisor research and analysis.
Nationwide Children’s Hospital

Pediatric hospital in Columbus, Ohio, with more than 1,316 medical staff members and over 11,200 total employees.

- Recognized that investments to improve community health would help the organization meet strategic priorities related to cost, quality, and community engagement.
- Created the Healthy Neighborhoods, Healthy Families (HNHF) program to drive overall community strength by investing in the local workforce, education system, housing system, neighborhood, and general wellness.
- Outcomes: 58 housing units with workforce training; saw a 21% drop in vacancy rates; 24 opened child care slots; 339 homes impacted; 2,000 school-based patients.

Source: Population Health Advisor research and analysis.
In social determinants, a new call to action

“We're partnering with family foundations and other philanthropic organizations on access to healthy food, hunger screening, and housing—just to name a few...

It's easy to say you can't get paid for it but I think the idea here is to just get started small…and then figure out ways to do it more economically…

…the health care industry at large has been slow in working with these groups because we've been so insularly focused on the clinical aim.”

Randy Oostra, President and CEO, ProMedica
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