Moving upstream to achieve the Quadruple Aim

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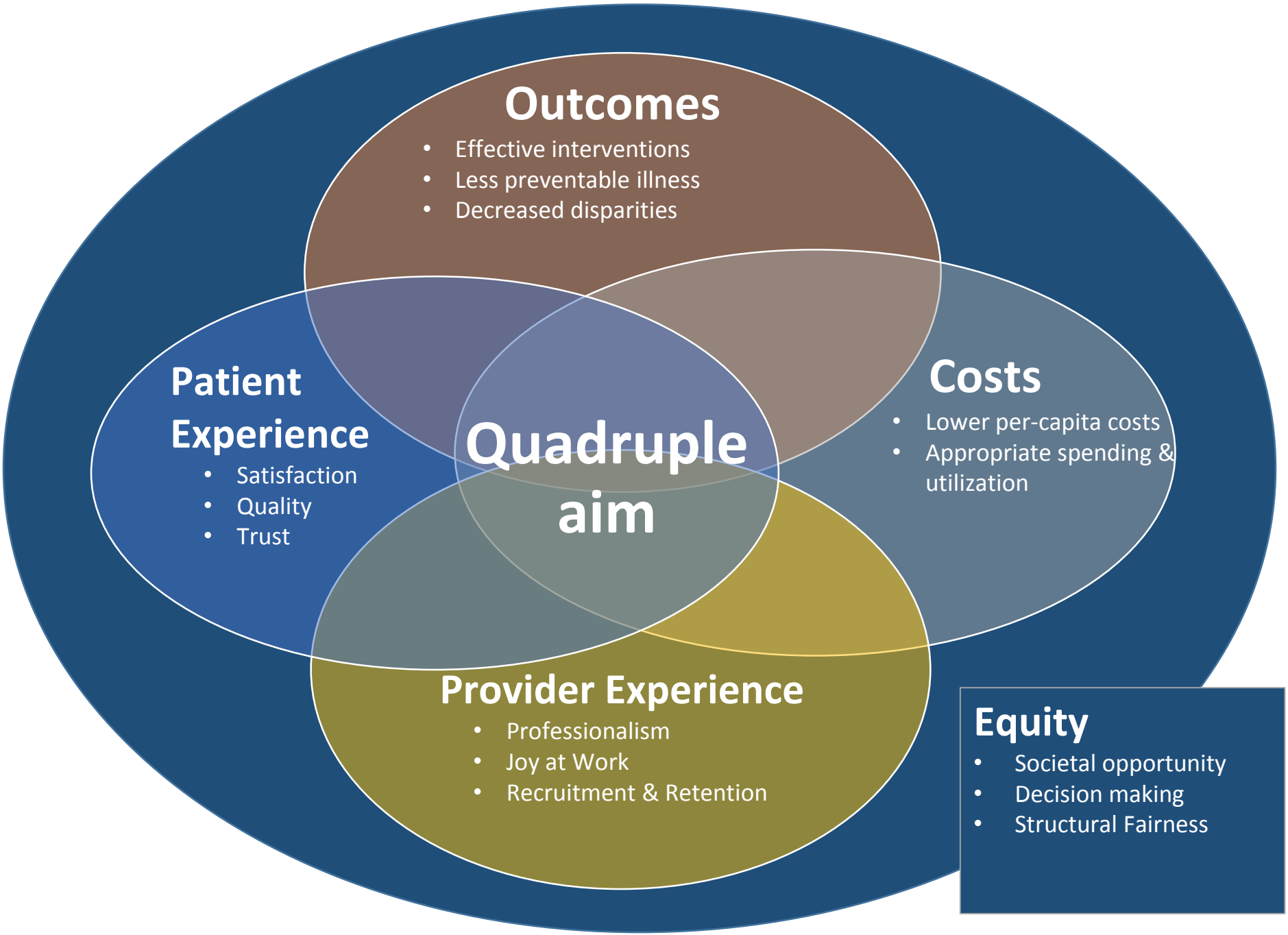
Objectives

- **Describe the importance of upstream social determinants to the Quadruple Aim**
- Describe how QI and practice redesign can help operationalize changes needed to move healthcare upstream
- Describe best practices for:
  - Patient engagement
  - Provider and staff training
  - Sharing upstream data to bolster local partnerships required to achieve whole person care

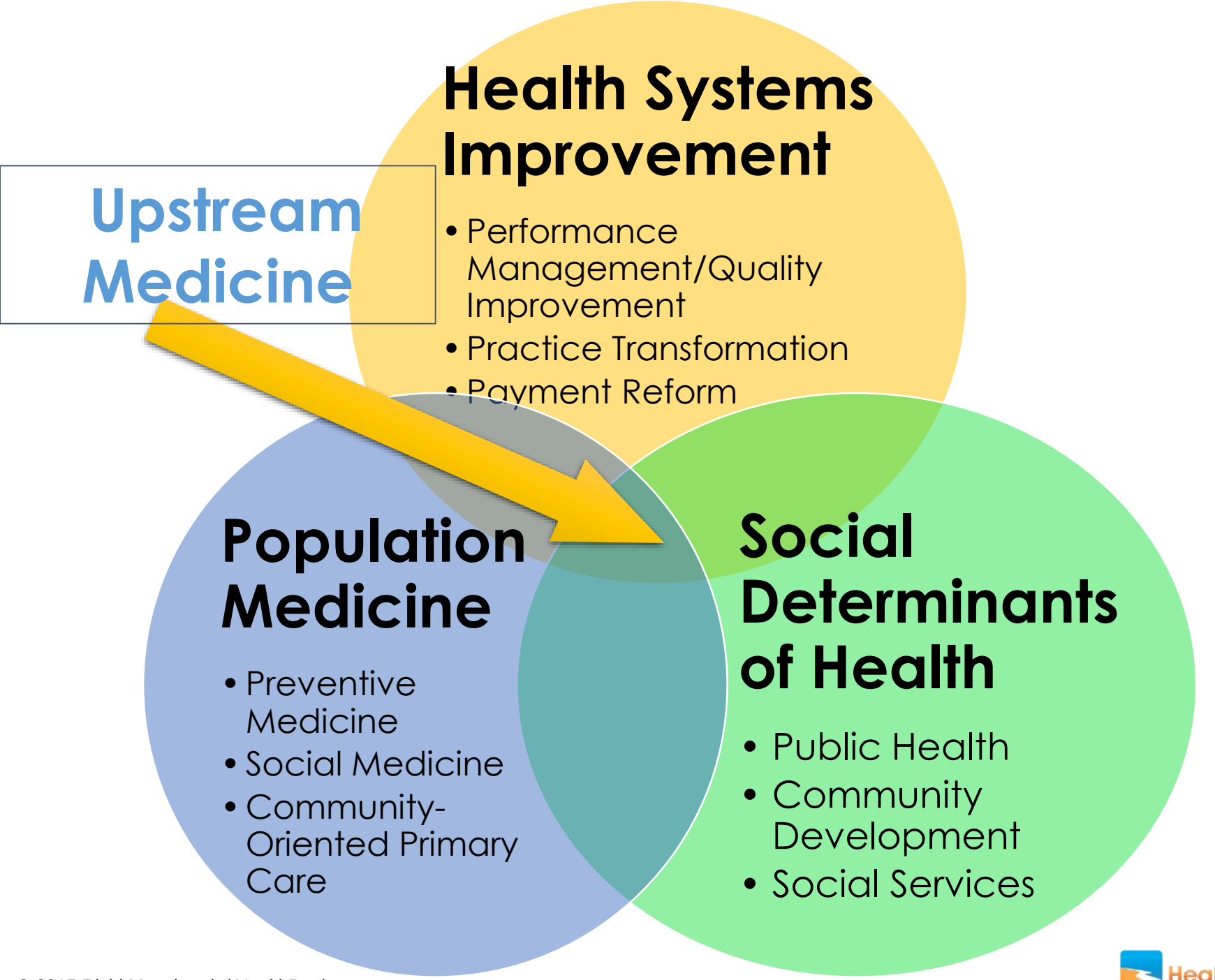
- Improve readiness to move upstream



- Coalesce around a common civic purpose – transform traditional service providers and institutions into catalysts of civil society.
- Increase performance management capabilities & human capital development in the social sector as an "upstream" force multiplier in education, housing, food security, transportation, and other areas of action
- As healthcare and social service spending is rebalanced, we should not underestimate the degree of waste, missed opportunity, and suffering that results when these sectors remain siloed

A Medical- Legal Partnership

for 'High Utilizer' Homeless Veterans



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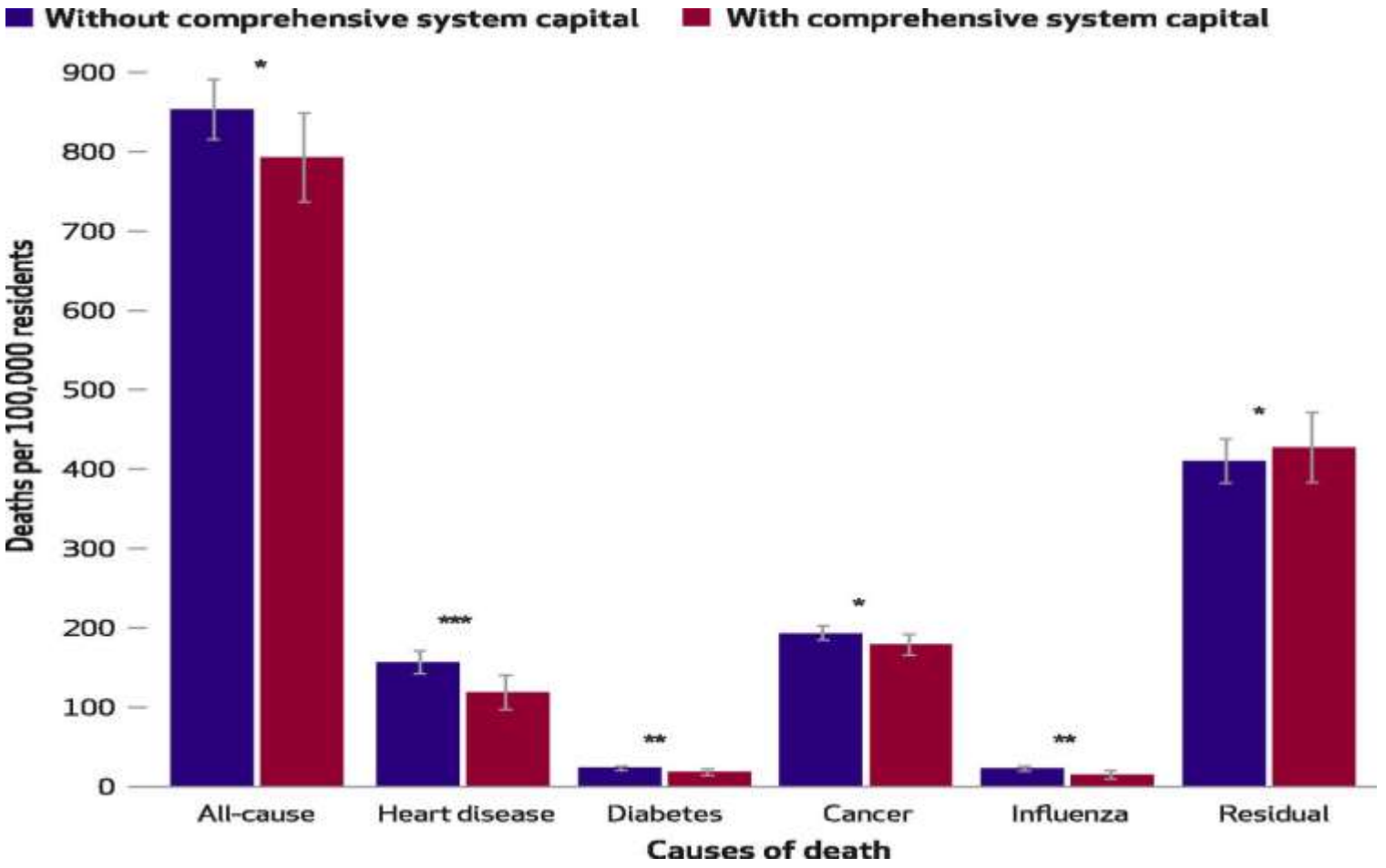
More community social capital associated with lower mortality



Differences in county mortality rates associated with comprehensive population health system capital, 2014.

Glen P. Mays et al. Health Aff 2016;35:2005-2013

HealthAffairs

Housing as a health intervention

Upstream Intervention	Target Population	Healthcare Outcomes
Housing First	People experiencing chronic homelessness—Seattle and Boston	**$29,388 per person per year in net savings, and $8,949 per person per year in net savings, respectively** Larimer, 2009; MHSA, 2014
Special Homeless Initiative	Adults with serious mental illness—Boston	**93% reduction in hospital costs, resulting in $18 million reduction in health care costs annually** Levine, 2007
10th Decile Project	High-need homeless—Los Angeles	**72% reduction in total health care costs; positive ROI - Every $1 invested in housing and support estimated to reduce public & hospital costs by $2 the following year and $6 in subsequent years** Burns, 2013
My First Place	Foster care recipients—California	**Better health outcomes; $44,000 per person per year in net savings** First Place for Youth, 2012

Adapted from: Taylor LA, Tan AX, Coyle CE, et al. Leveraging the Social Determinants of Health: What Works? Yi H, ed. *PLoS ONE*. 2016;11(8):e0160217. doi:10.1371/journal.pone.0160217.

Food and nutrition as health interventions

Upstream Intervention	Target Population	Healthcare Outcomes
Women, Infants, and Children (WIC)	Low-income women and children—selected cities and states (U.S.)	**Better health outcomes; $176 million per year in net savings in U.S.** Foster, Jiang, & Gibson-Davis, 2010; Khanani et al., 2010; Hoynes, Page, & Stevens, 2009
Home-delivered meals	Older adults—nationwide	**A 1% increase in meals delivered to the homes of older adults was estimated to be associated with reduction of $109 million in Medicaid costs;** **A $25 annual increase in home-delivered meals per older adult was estimated to be associated with a 1% decline in nursing home admissions** Thomas & Mor, 2013a; Thomas & Mor, 2013b; Thomas & Dosa, 2015

Adapted from: Taylor LA, Tan AX, Coyle CE, et al. Leveraging the Social Determinants of Health: What Works? Yi H, ed. *PLoS ONE*. 2016;11(8):e0160217. doi:10.1371/journal.pone.0160217.

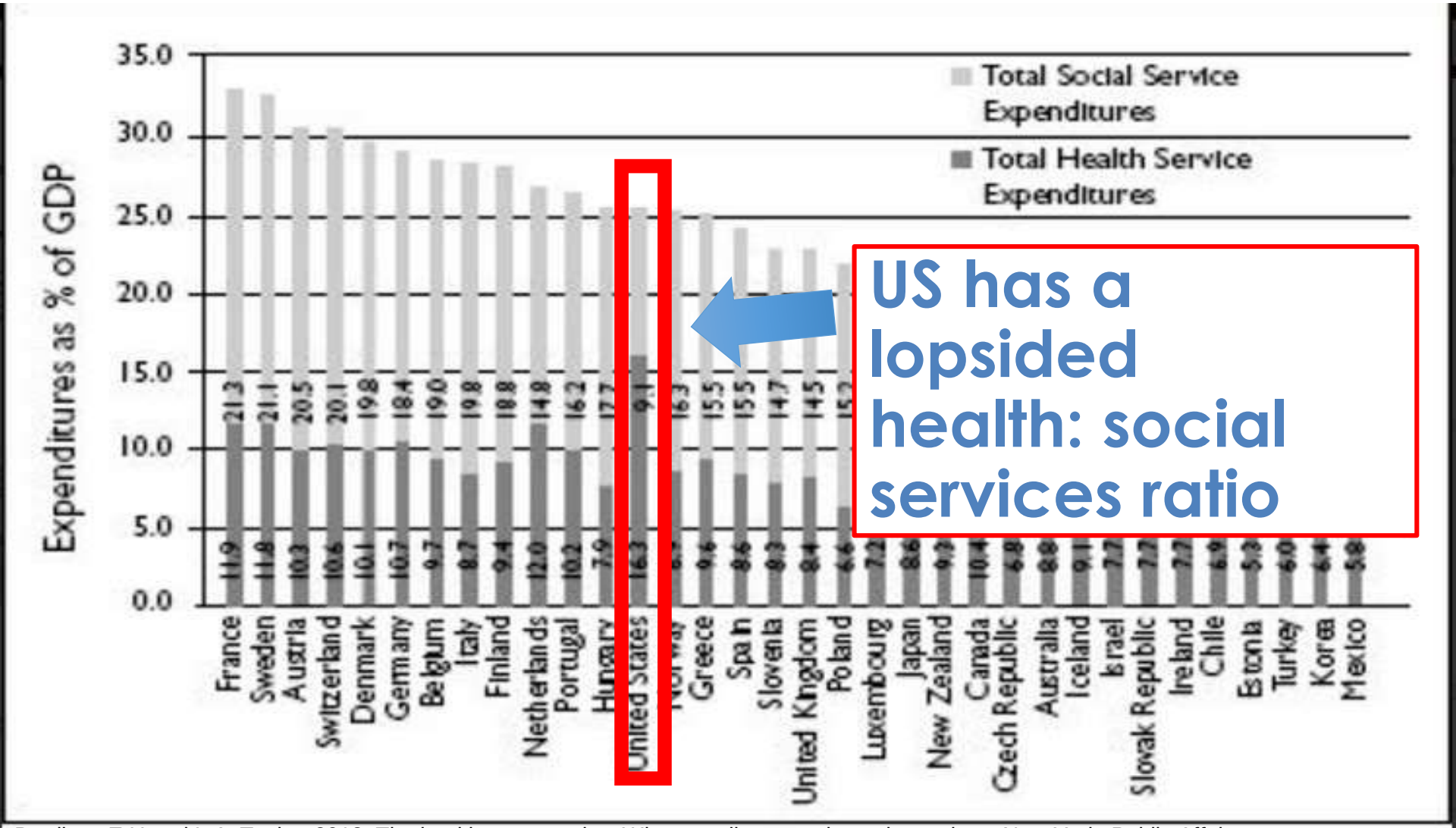
The impact of linking social & healthcare services (moving upstream)

Upstream Intervention	Target Population	Outcomes
"Effects of Social Needs Screening and In-Person Service Navigation on Child Health: A Randomized Clinical Trial" Pediatrics, 2016.	1809 children, enrolled in primary care and urgent care settings	**At 4 months after enrollment, the number of social needs reported by the intervention arm (navigation) decreased more than that reported by the control arm, with a mean (SE) change of −0.39 (0.13) vs 0.22 (0.13) (*P* < .001).** **Caregivers in the intervention arm reported significantly greater improvement in their child's health, with a mean (SE) change of −0.36 (0.05) vs −0.12 (0.05) (*P* < .001).** Gottlieb LM, Hessler D, Long D, Laves E, Burns AR, Amaya A, Sweeney P, Schudel C, Adler NE. Effects of Social Needs Screening and In-Person Service Navigation on Child HealthA Randomized Clinical Trial. *JAMA Pediatr.* 2016;170(11):e162521. doi:10.1001/jamapediatrics.2016.2521;

Healthcare payers are considering upstream factors

- Affordable Care Act > More coverage for millions of people with more social needs
- Value-Based Payment reform and Alternative Payment Models (bundled payments, ACOs, MACRA)
- Payers are considering upstream factors
  - CMMI Accountable Health Communities
  - California Accountable Communities for Health Initiative (CACHI)
  - Health Plans / Managed Care Organizations
  - Self-insured Employers

Lopsided

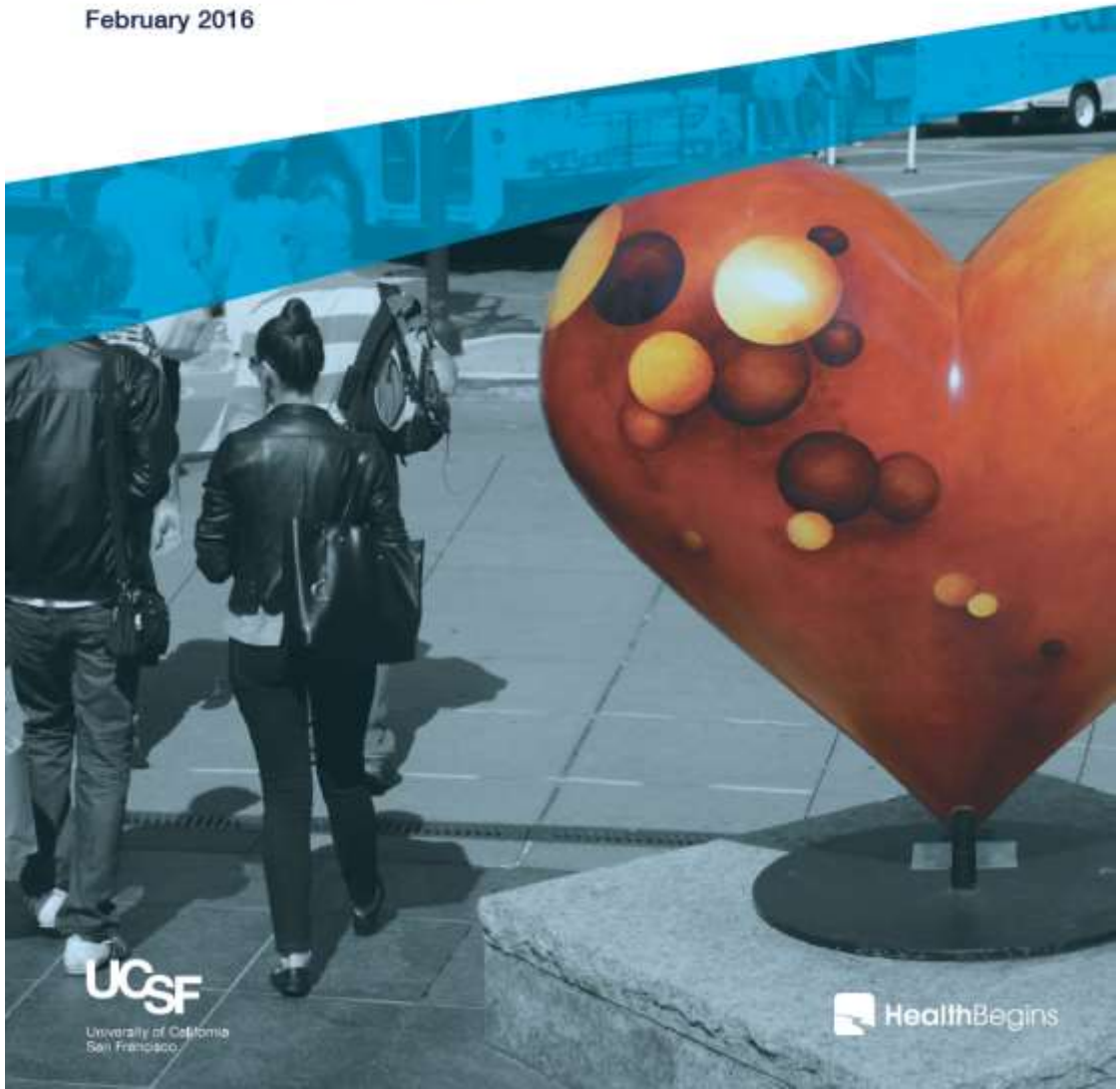


Bradley , E.H and L.A. Taylor, 2013. The healthcare paradox: Why spending more is getting us less. New York: Public Affairs.

Building Medicaid Managed Care Systems that Address Social Determinants of Health:

A Case Study Synthesis

February 2016



Findings

Medicaid MCO leaders describe investments in social determinants of health in terms that reflect components of the Triple Aim

Findings

Improved health care quality:

“We can’t do the work we’ve been charged with and do it well unless we figure [social determinants of health] out.”

Findings

Improved patient care experience:

"We [address social determinants because we] want to have high levels of consumer engagement [and] high levels of consumer satisfaction, which is the most important benchmark for me."

Findings

Decreased costs:

“We don’t go into this as if we were making grants. We go into this more as if we were making business investments.”

Proof of concept: 'Moving upstream' to the worksite to identify upstream risks

Wonderful health & wellness

Biometrics nationally

- Across the US, half of large employers either offer employees the opportunity or require them to complete biometric screening. Health Aff (Millwood). 2015 Oct;34(10):1779-88. doi: 10.1377/hlthaff.2015.0885.

Biometrics screenings identified biological risks

- California Central Valley employees screened: 87%
- Diabetes 11%

Social risk identified

- We added 4 questions to the biometrics:
  - Financial, Food and Housing Insecurity
- **10% of employees identified with biological AND social health risks**

Acting on upstream issues as a self-insured employer

- Targeted care management through primary care onsite clinics with integrated psychosocial services
- Community benefits & corporate philanthropy
- Evaluation, risk models, and value contracting

Our healthcare workforce is asking for help

"I'm a primary care pediatrician in [a rural county]. Highest teen preg rate, meth addiction, high school drop out rate... Many more issues.

Understand upstream approach for years. Try my best but falls by the wayside as I don't have resources - No help, city/ county overwhelmed.

Patients lost to follow up- I'm seeing over 30 a day. How to manage? Would like to discuss."

Burnout & clinic capacity to address social determinants of health

Survey of over 500 primary care clinicians

"My clinic has the resources, such as dedicated staff, community programs, resources or tools to address patients' social needs"

After multivariate analysis, lower perceived capacity of clinics to address social needs was the strongest predictor of clinician burnout.

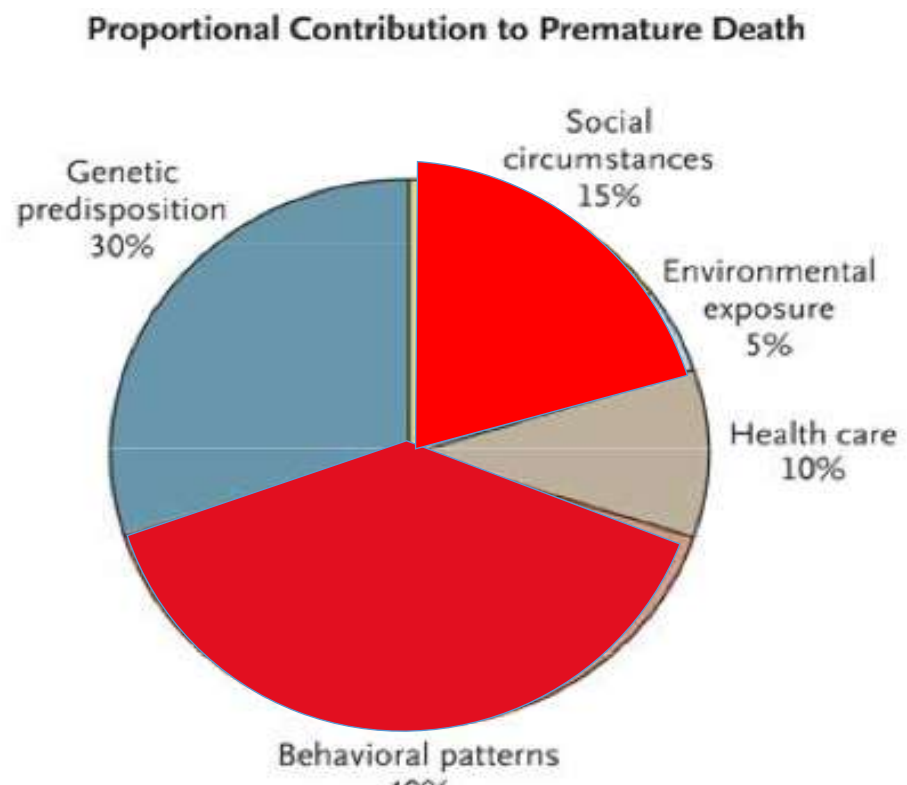
SF HEALTH NETWORK
SAN FRANCISCO DEPARTMENT OF PUBLIC HEALTH

U.S. Department of Veterans Affairs

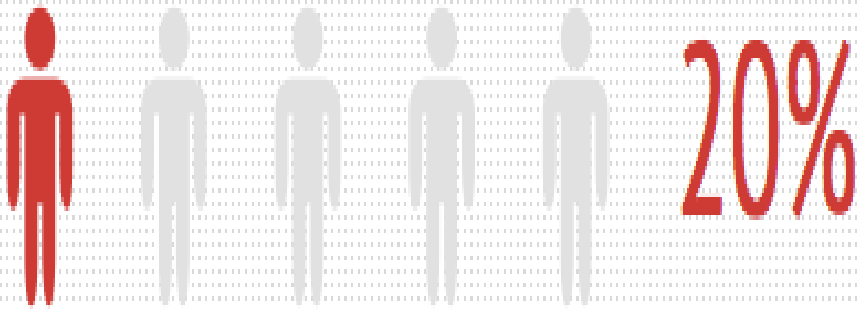
UCSF Medical Center

Source: Olayiwola et al. from presentation. Arizona Alliance of Community Health Centers, Phoenix, AZ. Feb 2016.

Social factors account for 60% of premature death & impact the Quadruple Aim



Schroeder S. N Engl J Med 2007;357:1221-1228



U.S. doctors equipped to address patients' social needs

Robert Wood Johnson Foundation
"Health Care's Blind Side" December 2011

But only 1 in 5 MDs have confidence to address them

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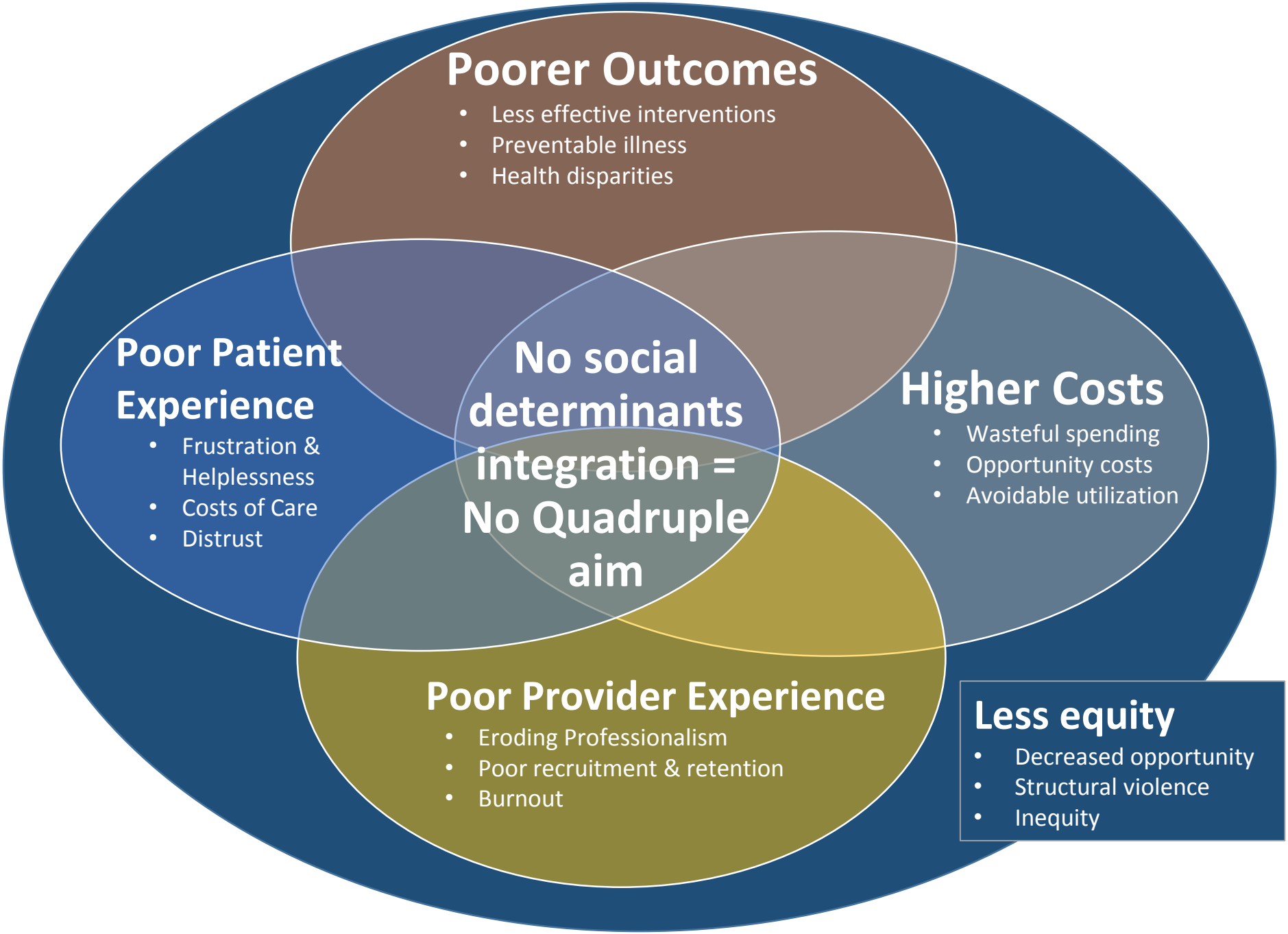
Poorer Outcomes
• Less effective interventions
• Preventable illness
• Health disparities
Poor Patient Experience
• Frustration & Helplessness
• Costs of Care
• Distrust
No social determinants integration = No Quadruple aim
Higher Costs
• Wasteful spending
• Opportunity costs
• Avoidable utilization
Poor Provider Experience
• Eroding Professionalism
• Poor recruitment & retention
• Burnout
Less equity
• Decreased opportunity
• Structural violence
• Inequity

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- Improve your readiness to move upstream

Let's start with a Case Study

- Mr. M is a 51 year old father of two, diagnosed with Type II diabetes at age 38. Last HbA1c = 8.2. BMI: 29
- Medications:

  Metformin 1000mg po bid

  Glipizide 10mg po bid

  No known problems with medication adherence.
- At the end of last month, he was extremely dizzy, nearly fainted and was hospitalized. Diagnosis: Hypoglycemia

What could have led to Mr. M's hospitalization?

What Could Have Led to Mr. M's Hospitalization?

Food Insecurity

Poor Dietary or Exercise Habits

Medications

Food Insecurity

- Food insecurity reflects the inability to access food because of inadequate finances or other resources
    - Hunger is related as an individual – level physical sensation
    - One in seven Americans cannot reliably afford food

Seligman HK, et akl. Food Insecurity and Clinical Measures of Chronic Disease. Abstract Presentation, SGIM, National Meeting, PA, 2008; Seligman HK, et al. *Health Affairs.* 2014;33(1):116–23.; Weiser SD, et al. *PLoS Med*. 2007;4(10):e260.

Food insecurity: Driver of preventable, high cost healthcare utilization

The risk of diabetes is about 3X higher in very food-insecure households compared to food-secure households, after accounting for differences in socioeconomic status and obesity. Seligman HK, et akl. Food Insecurity and Clinical Measures of Chronic Disease. Abstract Presentation, SGIM, National Meeting, PA, 2008

Lower-income diabetic adults have a 27% higher rate of hospital admissions due to end-of-the month food insecurity, compared with higher-income diabetics Seligman HK, et al. *Health Affairs.* 2014;33(1):116–23.;

More than half of patients with high hospitalization rates (at least 3 inpatient visits in a 12-month period) were food insecure or marginally food secure. 75% were unable to shop for food on their own and 58% were unable to prepare their own food. (Philadelphia)

To achieve the Quadruple Aim, where do we start?

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Get Ready, Get Set, Go Upstream

for Mrs. M and other at-risk diabetic patients

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1) Get Ready

Assess the maturity of your clinic processes & environment to address social determinants of health

2) Get Set

Engage colleagues, key stakeholders, and community partners to plan

3) Go Upstream

Launch targeted campaigns using 'Upstream Quality Improvement'

Build system capability to support tools/best practices to address patients' social needs & connect to resources

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Upstream Readiness Assessment For Health Care Systems

	Limited or unclear	Moderate	Robust
1. Is the **environment favorable** for your organization to address social determinants of health?			
2. What's the **perceived value** of a change to assess and address social determinants of health?			
3. Do you have **executive sponsorship** to advance social determinants interventions?			
4. How established are **team roles and ownership** for your social determinants intervention(s)?			
5. How well defined is (are) the **scope** of your social determinants intervention(s)?			
6. How **well managed** is (are) your social determinants intervention(s)?			
7. How **well integrated** are social determinants of health with care delivery?			
8. How well developed are your **Continuous Quality Improvement** (CQI) processes?			
9. How mature are your **information systems and human resources** systems?			
10. What is your **financial readiness** for social determinants of health interventions?			
Total			

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Get Set:

1. Review the readiness assessment results.
Where are we ready? What can be done?

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Get Set:

2. Who are your healthcare-based upstreamists?

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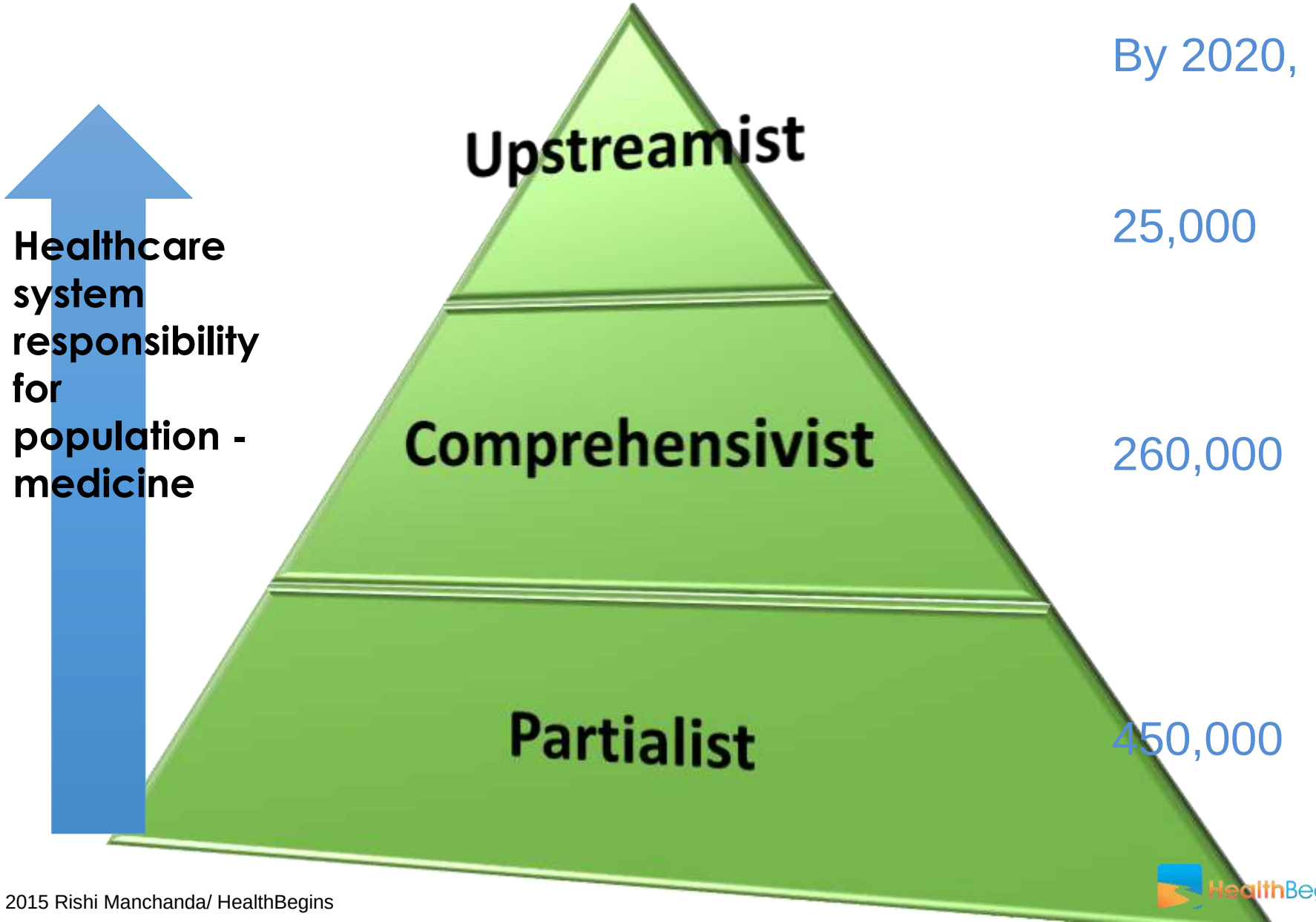
A workforce model for US healthcare



Get Set:

3. Whose are your upstream partners?

Can we describe non-medical "specialists" in the community by name, capacity, services?

For example:
For Mr. M and people like her suffering poor healthcare outcomes due to food insecurity, can you partner with a local food bank? Which one?

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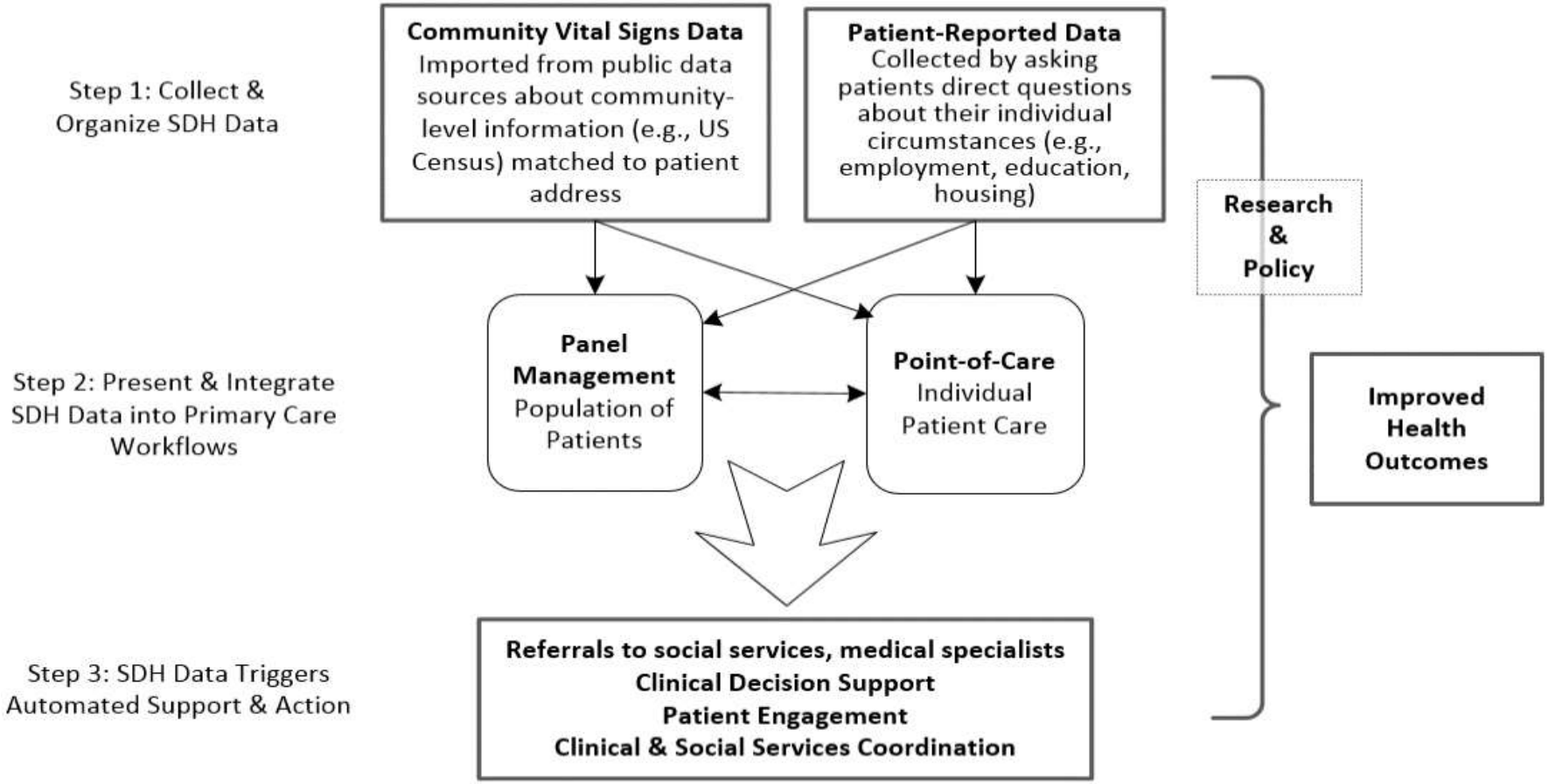
Get Set:

4. Review upstream data collection



Conceptual Model for SDH in Primary Care

See: DeVoe JE, Bazemore AW, Cottrell EK, Likumahuwa-Ackman S, Grandmont J, Spach N, Gold R (2016). Perspectives in Primary Care: A Conceptual Framework and Path to Integrating Social Determinants of Health Into Primary Care Practice. *Annals of Family Medicine*, *14*(2).

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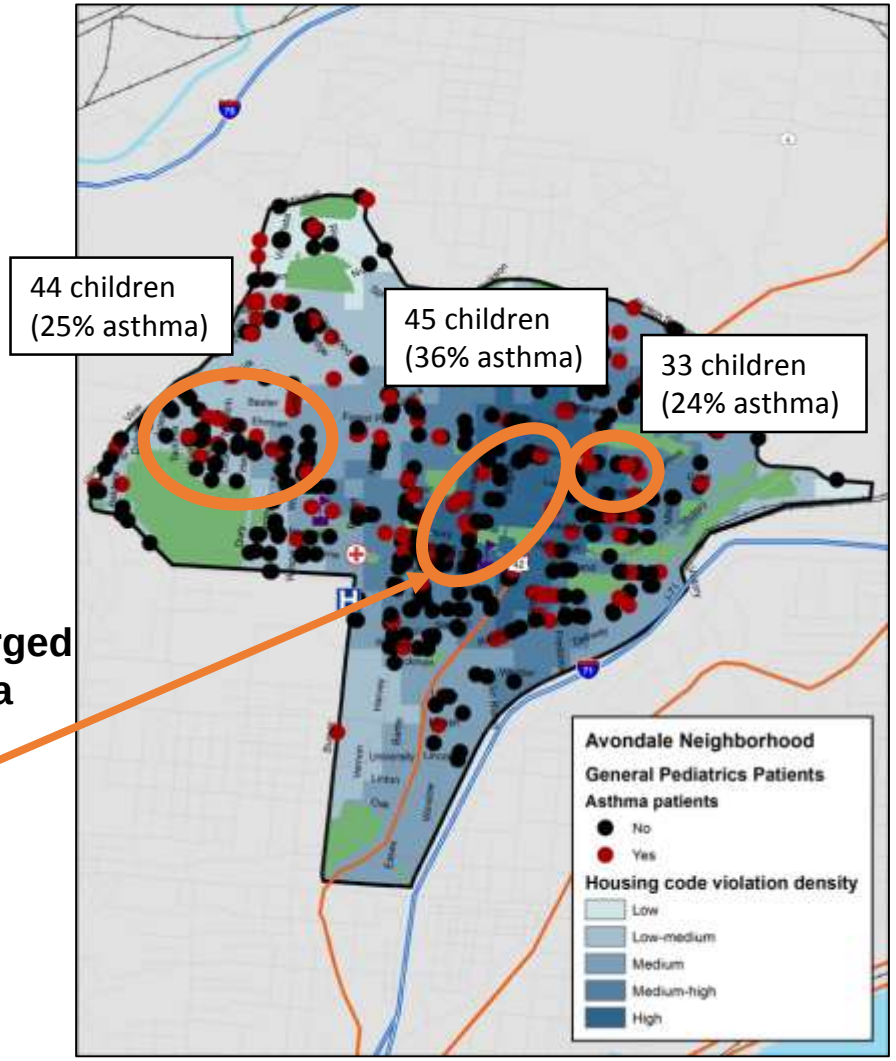
Housing and Health

- Overlaying health and housing data spurs pattern recognition
  - Cincinnati Child Health Law Partnership (Child HeLP)

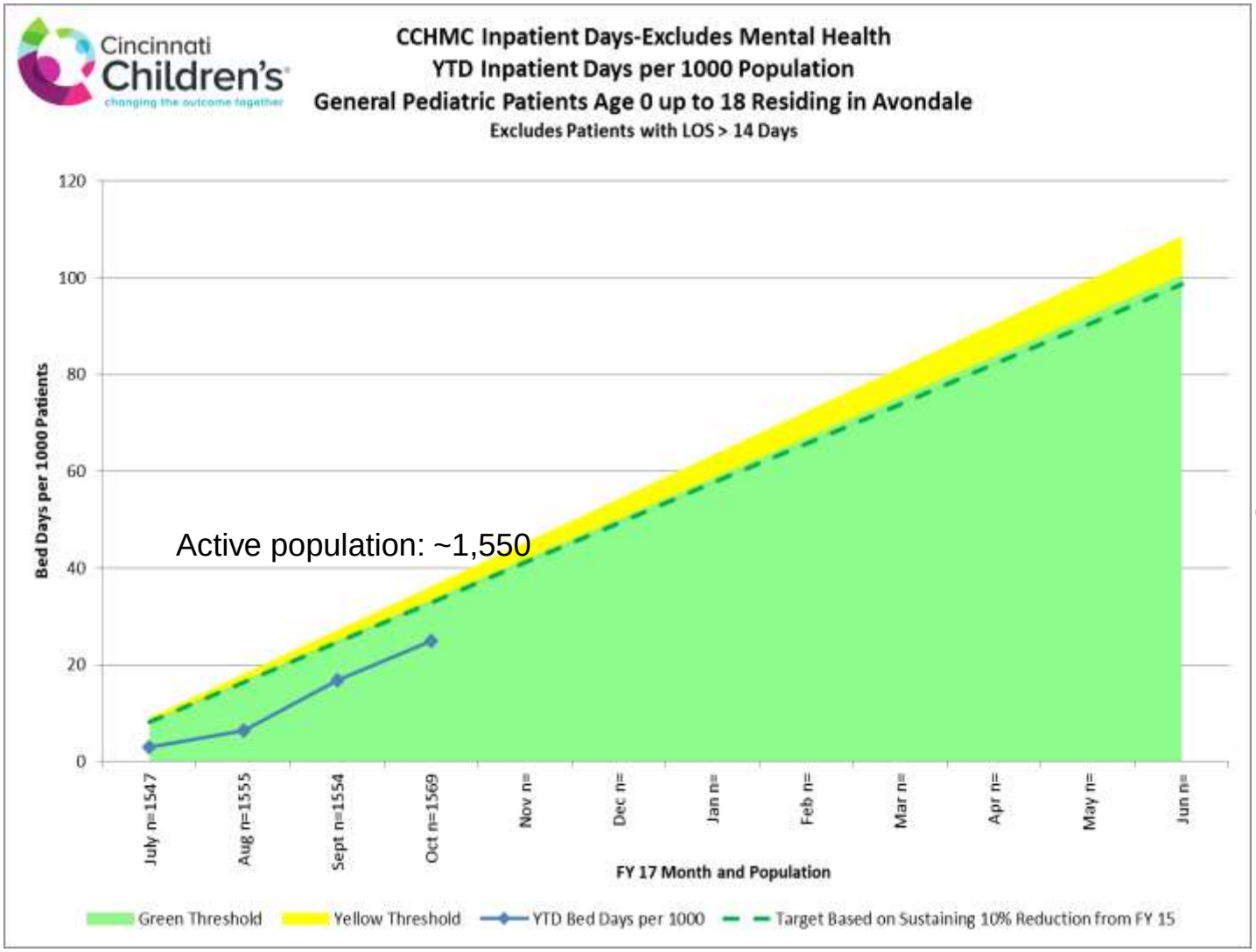
Healthcare data alone

Housing data alone

Merged data



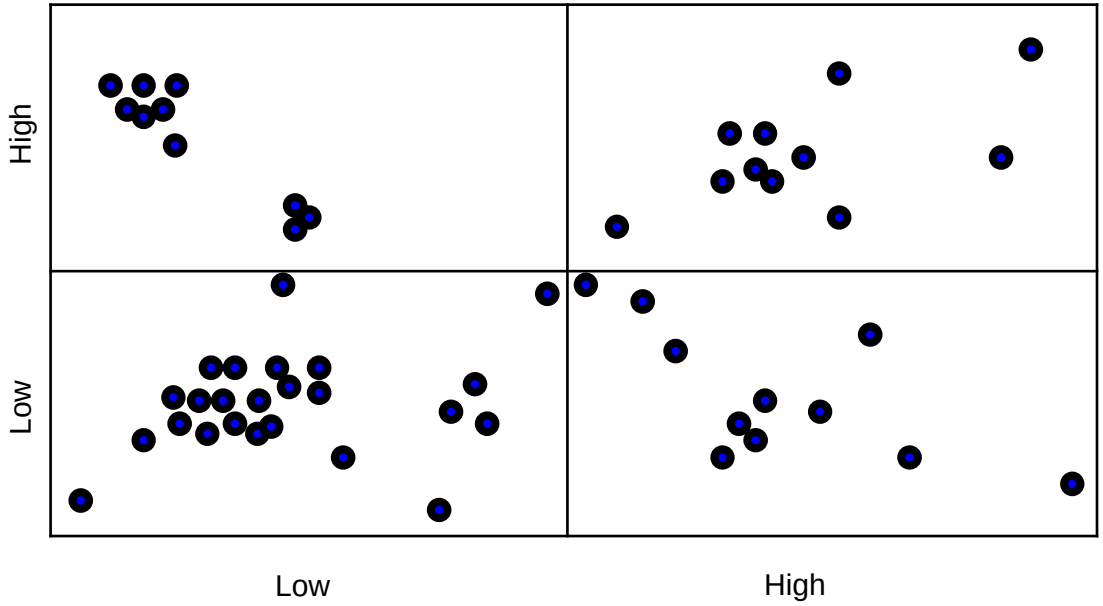
Courtesy: Cincinnati Children's Hospital



Modified run-chart to track progress

Courtesy: Cincinnati Children's Hospital

Get Set:
5. Optimize segmentation and risk stratification using upstream data



The overall risk is rarely useful. The risk must be phenotyped into specific actionable categories, to allow for intervention mapping and execution.

In this example, individuals in the lower right quadrant have high overall risk but it is driven by social factors, not clinical factors. Suggesting different interventional pathways.

Explanatory Modeling: Avoidable Hospitalizations

Courtesy: Ruben Amarasingham, PCCI

Go Upstream
using Quality Improvement

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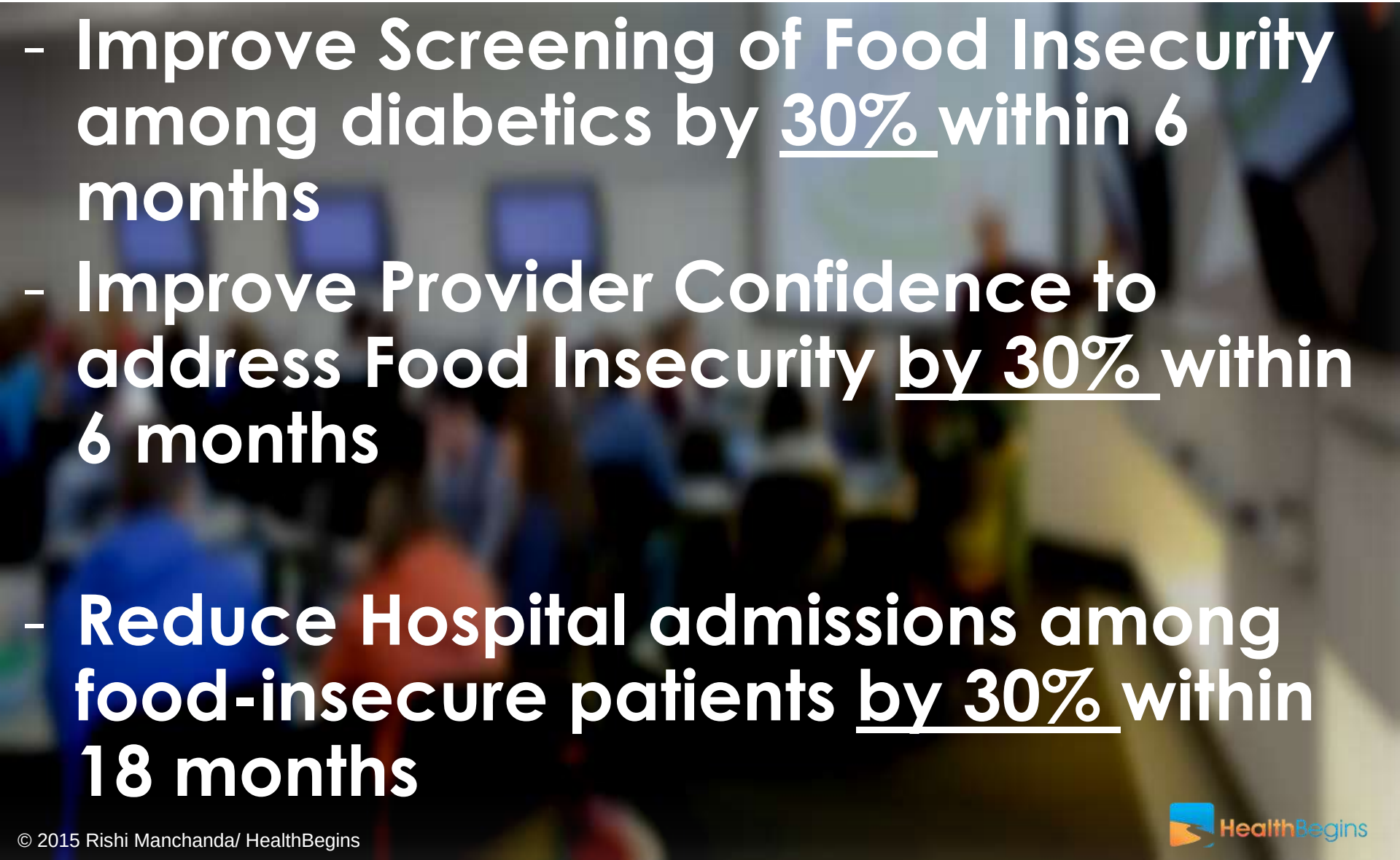
Upstream QI example

"FoodRx: A campaign to reduce hospital admissions among our patients"



- Improve Screening of Food Insecurity among diabetics by 30% within 6 months
- Improve Provider Confidence to address Food Insecurity by 30% within 6 months
- Reduce Hospital admissions among food-insecure patients by 30% within 18 months

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Screening for Food Insecurity

1. Within the past 12 months, we worried whether our food would run out before we got money to buy more. (Yes or No)

2. Within the past 12 months, the food we bought just didn't last, and we didn't have money to get more. (Yes or No)

Upstream QI Workflow for Mr. M	Care Team Member	Role/ Process	Tools/ Data Source	Metric
Food insecurity	Upstream QI committee	Project Team oversees & tracks PDSAs	"Upstream Project Canvas"	# QI team participation # PDSAs
Screen	Medical Assistant	Ask during vitals of diabetics	2-item food insecurity screener	% screened
Triage	Medical Assistant	Flag in EMR	Triage Protocol	% positive % flagged
Exam	PCP	Adjust / create treatment plan	EMR care plan	% plans updated
Chart/Code	Medical Assistant	Scribe, standing order to refer to SW	EMR	% internal referrals
Refer	Social Worker or RN	Assess / Food bank referral	Resource database (e.g. Healthify)	% referred
Follow-up	Social Worker or RN	Q1month or more check-in based on risk	EMR CRM (e.g. Healthify)	% decrease in food insecurity & utilization

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Upstream Risks Screening Tool

"Everyone deserves the opportunity to have a safe, healthy place to live, work, eat, sleep, learn and play. Problems or stress in these areas can affect health. We ask our patients about these issues because we may be able to help."

Question	Response	For Staff only: Review	Referral Plan Complete?
What's your name?	_____ _____ First Last		
What's your date of birth?	____ / ____ / _____ Day Month Year		
1a. What is the highest level of school you have completed? Check one.	☐ Elementary School ☐ High School ☐ College ☐ Graduate / Professional School		
1b. What is the highest degree you earned? Check one.	☐ High school diploma ☐ GED ☐ Vocational certificate (post high school or GED) ☐ Associate's degree (junior college) ☐ Bachelor's degree ☐ Master's degree ☐ Doctorate		☐
1c. Are you concerned about your child's learning, performance, or behavior in school?	☐ YES ☐ NO ☐ Not applicable		☐
2. Choose one of the following. Which best describes your current occupation?	☐ Homemaker, not working outside the home ☐ Employed (or self-employed) full time ☐ Employed (or self-employed) part time ☐ Employed, but on leave for health reasons ☐ Employed but temporarily away from my job (other than health reasons)		☐

*Several domains have been adapted from (Institute of Medicine). 2014. Capturing social and behavioral domains and measures in electronic health records: Phase 2. Washington, DC: The National Academies Press

UPSTREAM TOOLS	Screen	Find Resource	Referral Manage	EMR Integrate	Risk Model	Community/ Patient Participation
SAAS						
• Healthify	+	+	+	#		#
• Health Leads	+	+	+	#		
• Help Steps	+	+				
• Purple Binder	+/-	+	+			
• Aunt Bertha/ OneDegree	+/-	+				
• Community Detailing- HB		+				+
• CommunityRX	+/-	+	+/-			+
• Forecast Health				+/-	+	
• PCCI	+		+	+/-	+	+/-
Enterprise – Built	+	+	+	+		+/-
County 211 / Other		+				

Upstream QI matrix
Example: Diabetes & Food Insecurity

	Patient/Team Level	Health Care Organization Population-Level	General Population-Level
Primary Prevention	Financial literacy, support, & nutrition programs for low-income families with strong family history of DM	Provide on-site Farmers' Market, gym, walking trails, or financial counseling for families at risk for DM	Advocate for local increase in minimum wage and supports for low-income families, particularly those at risk of DM
Secondary Prevention	Poverty screening & financial assistance for DM patients at-risk of end-of-month hypoglycemia	Subsidize vouchers to local Farmer's Market or hire a financial counselor for low-income DM patients	Change timing and content WIC & school food programs to avoid food insecurity among DM
Tertiary Prevention	Reduce hospital use among high-utilizer severe diabetics using food and income support	Coordinate with local banks, collectors, lenders, to reduce debt burden for utilizer diabetics	Support legislation/ regulations to provide financial and "hotspotter" services to severe diabetics

Upstream Medicine Example:
Tertiary Prevention, Patient-level

"Food Pharmacy"

- On campus of ProMedica Toledo Hospital in Ohio
- Accepts patients with a physician referral, offering them 2-3 days' worth of food per visit. Monthly followup x 6 months.
- Nutrition counseling, Healthy recipes, connection to community resources

"The food pharmacy will be able to provide [diabetics] access to the necessary food to help stabilize their medical condition and keep them healthier"

Source: http://alliancetoendhunger.org/promedicas-food-pharmacy/ Accessed 4/01/16

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A Hospital based 'Food Pharmacy'

Source: http://alliancetoendhunger.org/promedicas-food-pharmacy/ Accessed 4/01/16

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Objectives

- Describe the importance of upstream social determinants to the Quadruple Aim
- Describe how QI and practice redesign can help operationalize changes needed to move healthcare upstream
  - Describe actionable frameworks and tools for building capacity to address upstream issues
- **Describe best practices for:**
  - **Patient engagement approaches that can improve how upstream information can be used**
  - **Provider and staff training**
  - **Sharing upstream data to bolster local partnerships required to achieve whole person care**
- Improve your readiness to move upstream

Improving patient engagement by moving upstream

- When applying 'Upstream' QI → **GOOB**
  - Get Out Of the Building to quickly validate or invalidate assumptions about health-related social needs
- Upstream' QI teams should include relevant social service providers and community representatives
- Use "**Community Health Detailing**" model to include and leverage constituents' community expertise to increase provider knowledge, capacity and efficacy