



***“Are Health Centers Cost Effective?”***  
**A Review of Recent Research  
on Health Center Cost of Care**  
**HRSA/BPHC Webinar**  
**Thursday, July 23, 2015**

# Introduction

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- Recent research has shed greater light on the cost effectiveness of Health Centers relative to other sources of primary care.
- This webinar will feature recent studies health center cost of care and will highlight research findings and methods that could be used by other health centers to better understand their cost of the care.

# Speakers

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- **Dana Mukamel, Ph.D.**, Professor, University of California, Irvine School of Medicine (UCI)
- **Elbert Huang, MD, MPH**, Associate Professor, University of Chicago School of Medicine (UC)
- **Robert Nocon, MHS**, Senior Health Services Researcher, University of Chicago School of Medicine
- **Rachel Tobey, MPA**, Director, John Snow Institute Inc. (JSI), San Francisco, CA
- **Yvonne Ketchum**, Executive Director, Community Health Center Network of Idaho (CHCN)

# Agenda

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- **Introduction**
  - Suma Nair, Bureau of Primary Health Care (BPHC)
- **Moderator**
  - Alek Sripipatana, Bureau of Primary Health Care (BPHC)
- **Presentations**
  - Dana Mukamel, UCI
  - Elbert Huang and Robert Nocon, University of Chicago
  - Rachel Tobey, JSI Inc.
  - Yvonne Ketchum, CHCN of ID
- **Q & A**
- **Concluding remarks**
  - Suma Nair, Bureau of Primary Health Care (BPHC)

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# Presentations

# Comparing Total Medicare Costs for Patients Receiving Primary Care in Federally Funded Health Centers, Physician Offices & Outpatient Clinics

D. B. Mukamel; L. M. White;  
R. S. Nocon; E.S. Huang; R. Sharma; L. Shi;  
Q. Ngo-Metzger



University of California, Irvine  
Funded by HRSA  
7/23/15

# Background I

- ▶ Federally Funded Health Centers (HCs) are funded under section 330 of the Public Health Service Act.
- ▶ They serve primarily low income and medically underserved populations.
- ▶ They offer mostly primary care, augmented with ancillary services such as transportation and counseling.

# Background 2

- ▶ In 2012, HCs served:
  - Medicaid 40.8%
  - Uninsured 30.6%
  - Medicare 8.0%
  
- ▶ 2009 operating revenues:
  - Total \$ 11.5 Billion
  - Medicare \$ 0.674 Billion
  
- ▶ Major expansion under the Affordable Care Act.

# Study Objectives

- ▶ To compare total (primary and non-primary) annual costs of care for Medicare beneficiaries receiving primary care in HCs to those receiving care in physician offices and outpatient clinics.
- ▶ To examine possible substitution between primary and non-primary care costs.

# Data and Population I

- ▶ 2009 Part A and part B FFS Medicare Claims
- ▶ 14 states: Alabama, California, Colorado, Connecticut, Florida, Iowa, Illinois, Maine, Mississippi, Montana, North Carolina, Texas, Vermont, and West Virginia
- ▶ 4.4 million beneficiaries (10% of national MC)

# Exclusions

- ▶ (ESRD) (2.07%)
- ▶ Transplant procedures (0.03%)
- ▶ Payment demonstration (0.08%)
- ▶ Missing data (3.25%)
- ▶ Beneficiaries with no primary care encounters during the year (26.85%)
- ▶ Final Sample: 3.2 million beneficiaries (71.61% of the initial sample)

# Methods: Definitions Of Primary Care Settings (1/2)

- ▶ Based on definition of the Affordable Care Act:

A provider was considered to be a primary care provider if either 1) for physicians, they had a specialty of 01- general practice (not included in the Affordable Care Act definition), 08-family practice, 11-internal medicine, or 38-geriatrics; or 2) for non-physicians, they had a specialty designation of 50-nurse practitioner, 89-certified clinical nurse specialist, or 97-physician assistant; and 3) the provider had at least one claim with a CPT code for evaluation and management (E/M) in the office (99201-99215), in a nursing facility (99304-99340), or in the patient's home (99341-99350).

# Methods: Definitions Of Primary Care Settings (2/2)

- ▶ We used the claims and line items to identify primary care providers and settings.
- ▶ Based on the primary care claims we identified 4 primary care settings:
  - HCs,
  - Physician Offices,
  - Outpatient Clinics,
  - Others: “HC look-alikes,” rural health clinics, and all other settings.

# Methods: Assigning Beneficiaries To Care Settings

- ▶ Based on claims data, each primary care patient day was assigned to one of the 4 settings.
- ▶ For each beneficiary we calculated the percent of his/her primary care days in each primary care settings.

# Methods: Variables

- ▶ **Dependent:** total beneficiary Medicare costs for the year.
- ▶ **Independent:**
  - % PC days in each setting
  - Age, gender, race
  - Severity: died during the year, reason for MC enrollment, CMS-HCCs
  - Months of enrollment in part A, part B, and state buy-in
  - PCSA fixed effects

# Methods: Estimated Model

$$\log C_{i,j} = \alpha + \beta X_{i,j} + \text{sum}_j(\text{PCSA}_j) + u_{ij}$$

With robust standard errors clustered at the PCSA level.

# Results: Descriptive Statistics

Variable	Aged Beneficiaries		Non-Aged Beneficiaries	
	Analysis Sample	Excluded Sample	Analysis Sample	Excluded Sample
Total Beneficiaries	2,671,778	955,339	489,306	297,726
Total Annual Costs *	2,801.45 (20,340.71)	N/A	2,637.45 (26,703.32)	N/A
Total Primary Care Costs *	506.22 (1,555.26)	N/A	527.34 (2,718.57)	N/A
Total Non-Primary Care Costs *	2,043.16 (20,063.28)	N/A	1,796.31 (26,164.82)	N/A
Number of Months of Part A Coverage	11.41 (2.22)	10.58 (3.27)	11.57 (1.68)	10.96 (2.77)
Number of Months of Part B Coverage	11.6 (1.61)	7.36 (5.50)	11.48 (1.83)	7.96 (5.26)
Number of Months of State Buy-In Coverage	2.42 (4.73)	1.12 (3.37)	7.08 (5.66)	2.86 (4.89)
Age at the End of Reference Year	76.21 (7.87)	73.21 (9.02)	50.96 (10.07)	49.89 (10.91)
Male (yes=1)**	0.39	0.55	0.49	0.63
Died during year (yes=1) **	0.04	0.05	0.02	0.02
Race: White (yes=1) **	0.79	0.73	0.64	0.63
Race: Black (yes=1) **	0.1	0.13	0.24	0.25
Race: Other (yes=1) **	0.02	0.03	0.02	0.02
Race: Asian (yes=1) **	0.04	0.04	0.02	0.02
Race: Hispanic (yes=1) **	0.05	0.06	0.07	0.07
Race: North American Native (yes=1) **	0	0	0.01	0
Race: Unknown (yes=1) **	0	0	0	0
Proportion of Primary Care days in HCs	0.04 (0.18)	N/A	0.14 (0.32)	N/A
Proportion of Primary Care days in Outpatient Clinics	0.08 (0.24)	N/A	0.14 (0.31)	N/A
Proportion of Primary Care days in Physician Offices	0.79 (.037)	N/A	0.62 (0.44)	N/A
Proportion of Primary Care days in Other Settings	0.08 (0.25)	N/A	0.10 (0.27)	N/A
Overall HCC Score	1.40 (1.27)	N/A	1.34 (1.30)	N/A

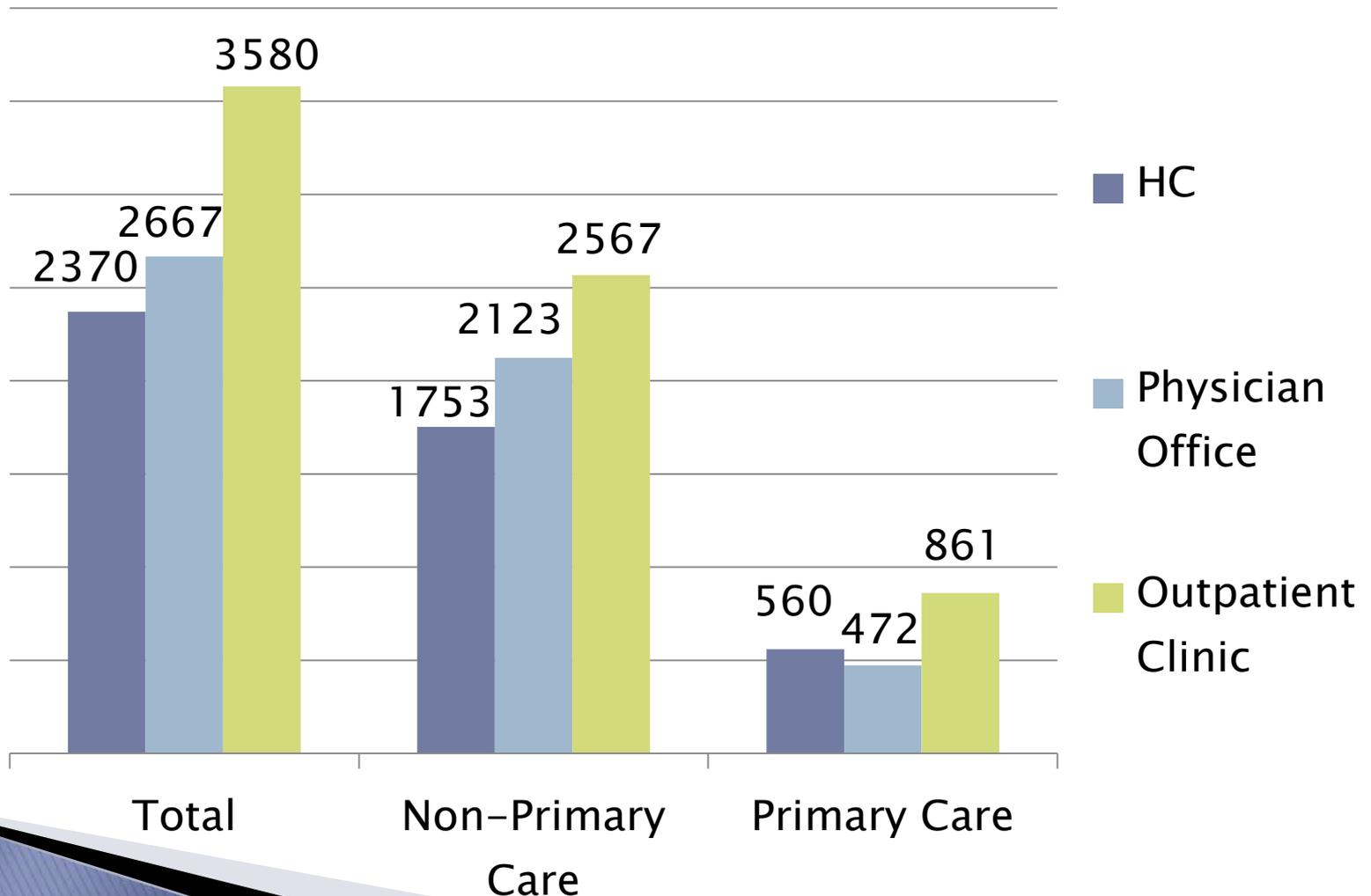
# Results: Estimated Cost Function – Aged Beneficiaries

	Total Costs Model	Primary Care Costs Model	Non-Primary Care Costs Model
Independent Variables	Coefficient Estimates	Coefficient Estimates	Coefficient Estimates
Number of Months of Part A Coverage	0.025 ****	¥	0.036 ****
Number of Months of Part B Coverage	0.084 ****	0.091 ****	0.054 ****
Number of Months of State Buy-In Coverage	-0.001 *	0.012 ****	-0.006 ****
Age at the End of Reference Year	0.108 ****	0.045 ****	0.120 ****
(Age at the End of Reference Year) <sup>2</sup>	-0.001 ****	0.000 ****	-0.001 ****
Male (yes=1)	-0.135 ****	-0.119 ****	-0.125 ****
Originally Disabled (yes=1)	0.025 ****	0.031 ****	0.030 ****
Died during year (yes=1)	0.263 ****	-0.183 ****	0.246 ****
Race: Black (yes=1)	-0.151 ****	-0.017	-0.167 ****
Race: Other (yes=1)	-0.171 ****	0.019	-0.237 ****
Race: Asian (yes=1)	-0.147 ****	0.146 ****	-0.276 ****
Race: Hispanic (yes=1)	-0.051 **	0.039 **	-0.065 ***
Race: North American Native (yes=1)	-0.011	0.139 ****	-0.097 **
Race: Unknown (yes=1)	-0.115 ****	0.021	-0.145 ****
Proportion of Primary Care days in Outpatient Clinics	0.396 ****	0.378 ****	0.392 ****
Proportion of Primary Care days in Physician Offices	0.111 ****	-0.182 ****	0.237 ****
Proportion of Primary Care days in Other Settings	0.125 ****	-0.024 ****	0.193 ****
Constant	1.648 ****	3.084 ****	0.997 ****
N	2,671,778	2,671,778	2,557,450
R <sup>2</sup> : within states	0.48	0.2	0.43
R <sup>2</sup> : between states	0.57	0.49	0.51
R <sup>2</sup> : overall	0.49	0.22	0.43

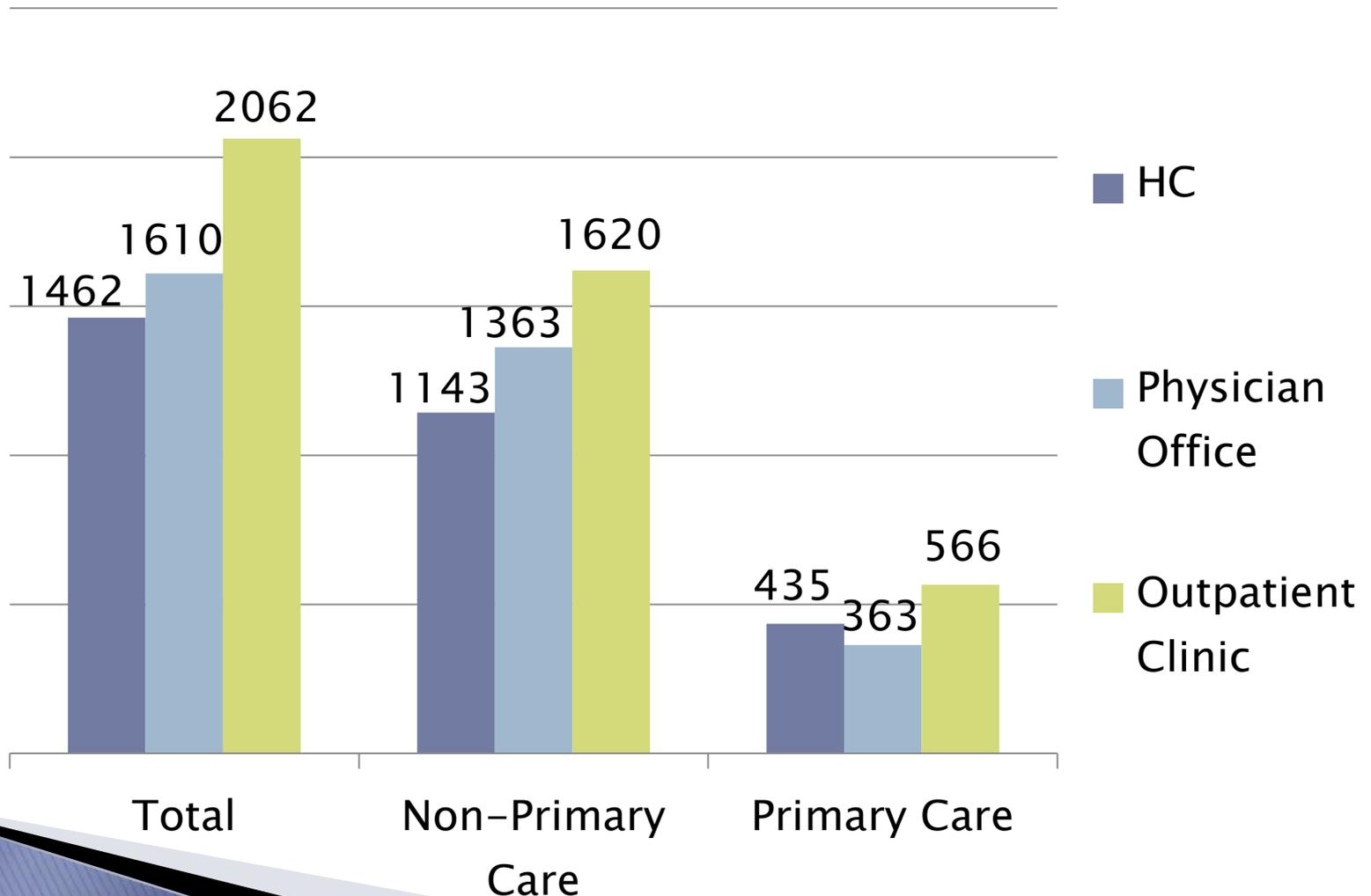
# Results: Estimated Cost Function – Disabled Beneficiaries

	Total Costs Model	Primary Care Costs Model	Non-Primary Care Costs Model
Independent Variables	Coefficient Estimates	Coefficient Estimates	Coefficient Estimates
Number of Months of Part A Coverage	0.014 ****	¥	0.030 ****
Number of Months of Part B Coverage	0.078 ****	0.078 ****	0.042 ****
Number of Months of State Buy-In Coverage	0.006 ****	0.012 ****	0.001
Age at the End of Reference Year	0.013 ****	0.026 ****	0.002
(Age at the End of Reference Year) <sup>2</sup>	0.000 ****	0.000 ****	0
Male (yes=1)	-0.314 ****	-0.185 ****	-0.322 ****
Died during year (yes=1)	0.226 ****	-0.225 ****	0.197 ****
Race: Black (yes=1)	-0.040 ****	-0.023 **	-0.032 ***
Race: Other (yes=1)	-0.063 ****	0.002	-0.101 ****
Race: Asian (yes=1)	-0.170 ****	0.020 *	-0.279 ****
Race: Hispanic (yes=1)	-0.003	0.034 ***	-0.027
Race: North American Native (yes=1)	0.057 *	0.128 ****	0.013
Race: Unknown (yes=1)	-0.141 ***	-0.076 ***	-0.158 ***
Proportion of Primary Care days in Outpatient Clinics	0.305 ****	0.222 ****	0.318 ****
Proportion of Primary Care days in Physician Offices	0.068 ****	-0.201 ****	0.181 ****
Proportion of Primary Care days in Other Settings	0.148 ****	-0.044	0.215 ****
Constant	5.550 ****	4.257 ****	5.755 ****
N	489,306	489,306	453,700
R <sup>2</sup> : within states	0.48	0.23	0.41
R <sup>2</sup> : between states	0.75	0.39	0.65
R <sup>2</sup> : overall	0.48	0.24	0.42

# Results: Median Predicted Costs Aged 65+



# Results: Median Predicted Costs Non-Aged >65



# Summary I

- ▶ HCs offer a lower total annual cost alternative to physician offices and outpatient clinics (10%-30%).
- ▶ The savings seem to be due to non-primary care services.

What might explain these findings?

# Potential Explanations

- ▶ HCs' patients are sicker in unobserved ways which were not accounted for in our cost analyses:
  - Sensitivity analyses and Instrumental Variables analyses confirm our main results.
- ▶ Specialty services, if provided in the HCs, were not counted separately towards costs:
  - If these costs are built into the payment rate the HCs receive, they should not bias the estimates downwards.

# Potential Explanations Requiring Further Studies

- ▶ HCs' patients, due to unmeasured differences in SES, are more reluctant to seek specialty care, which entail out of pocket costs.
- ▶ HCs' physicians practice a lower cost practice style, perhaps enabled by the wraparound support services or necessitated by lack of specialists in the area.
- ▶ HCs provide fewer services and, therefore, lower quality care.

# Conclusions

- ▶ HCs have the potential to offer low cost care to their Medicare patients.
- ▶ Further studies, especially examining the quality of care for the same patient population for which lower costs are observed, should be done.

# Further Information

## ▶ **Paper to be published in HSR**

“Comparing the Cost of Caring for Medicare Beneficiaries in Federally Funded Health Centers to Other Care Settings”;

Dana B. Mukamel, Laura M. White, Robert S. Nocon, Elbert S. Huang, Ravi Sharma, Leiyu Shi, and Quyen Ngo-Metzger, Health Services Research, 2015, in press.

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**CCDTR** CHICAGO CENTER FOR  
DIABETES TRANSLATION RESEARCH

# Healthcare Use and Spending in Medicaid: Comparing Health Center Patients to Other Settings

**HRSA Webinar: Research on the Value of Health Centers**

July 23, 2015

# Research Team

- University of Chicago
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  - Ravi Sharma
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  - Quyen Ngo-Metzger
- University of California at Irvine
  - Dana B. Mukamel
  - Laura M. White
- Johns Hopkins University
  - Leiyu Shi

# Why is this topic important?

- Health centers care for ~23 million patients each year in medically underserved communities
- Use of HCs has increased under the Affordable Care Act (ACA)
  - Expansions and enrollment growth in Medicaid
  - Increased HC funding
- National pressures to restrain spending growth and concern over the cost of the Medicaid program

# Our Goals

**Research Question:** Is primary care setting associated with health care use and spending among adult Medicaid patients?

## **Unique Features of this Study:**

- Includes a large sample of states (13)
- Shows association by types of services (primary care, inpatient, etc.)
- Compares Health Center, Physician Office, and Hospital Outpatient settings
- Uses advanced statistical matching techniques

# Data and Population II

- Data Source: 2009 Medicaid Claims
  - Includes all utilization except long-term care; dental and transportation claims were dropped from analysis
  - States: AL, CA, CO, CT, FL, IA, IL, MS, MT, NC, TX, VT, WV
- Study Sample: 1.9M adults enrolled in Medicaid
  - Excludes: **Medicaid managed care patients**, dual-eligibles, enrollees with no primary care, long-term care recipients, death in data year, end-stage renal disease patients, organ transplant recipients

# Analyses

- Main Variable of Interest: Health Center (HC) vs Non-Health Center
  - Primary care setting where enrollee saw >50% of primary care visits
  - Non-HC includes: physician office (PO), hospital outpatient (HO), mixed use (MU)
- Outcomes: 11 measures of utilization and spending
- Show results by non-HC setting and state

# Propensity Score Matching

- Use available data to model probability of being a health center patient (i.e. propensity score)
- Match each health center patient to its propensity score “nearest neighbor”, with preference for matching within same neighborhood.
- Compare characteristics of matched groups to ensure balance

# Outcome Measures

Service Type	Utilization	Spending
Primary Care	#Visits	\$Payments
Specialty Care	#Visits	\$Payments
Prescription Drugs	---	\$Payments
Emergency Room	#Visits	\$Payments
Inpatient	#Visits; total LOS	\$Payments
Total	---	\$Payments

# Matching Variables

- Enrollee Characteristics
  - Age, sex, race/ethnicity
  - Disease burden: based on 69 binary diagnosis variables from Medicaid CDPS risk system
  - Geography: primary care service area (i.e. neighborhood), state, metropolitan residence, distance from nearest health center site
- Medicaid eligibility characteristics
  - Eligibility group (e.g. cash, blind/disabled)
  - # of eligible months
  - Receipt of TANF

# Patient Characteristics

n=1,961,166		Health Center	Non-Health Center (Combined)	Non-Health Center (3 Groups)		
				Physician Office	Hospital Outpatient	Mixed Use
<b>Number of enrollees (%)</b>		144,076 (14%)	894,898 (86%)	460,198 (47%)	95,599 (9%)	339,101 (33%)
<b>Age (mean, SD)</b>		41.3 (13.1)	40.0 (13.7)	41.3 (14.0)	40.5 (13.4)	38.1 (13.3)
<b>Female (%)</b>		67.0	67.0	69.1	62.9	65.1
<b>Race (%)</b>	White	40.2	42.1	41.7	38.0	43.8
	Hispanic/Lat	23.3	22.8	25.7	21.0	19.4
	Black	20.1	19.9	18.9	22.9	20.5
<b>Medicaid eligibility group (%)</b>	Cash, adult	34.7	26.4	22.4	33.0	30.1
	Cash, disabled	42.6	51.1	51.8	44.2	52.1
	Med need, adult	06.7	07.2	08.6	04.3	06.1
	Med need, disabled	03.1	02.7	02.6	03.9	02.6
<b>Dist. to HC in km (mean, SD)</b>		4.8 (6.7)	9.7 (13.1)	9.3 (12.2)	7.7 (11.8)	10.9 (14.4)
<b>Risk Score (mean, SD)</b>		0.90 (1.00)	1.11 (1.34)	1.12 (1.34)	1.37 (1.78)	1.03 (1.18)

# Main Findings: Health Center vs non-Health Center

**Summary:** Health Center patients had lower use and expense across all services

	Non-Health Center	Health Center	% Difference
<b>Primary Care</b>			
Visits	8.2	7.6	-7%
Spending	\$1,845	\$1,430	-23%
<b>Other Outpatient Care</b>			
Visits	15.7	12.2	-22%
Spending	\$2,948	\$1,964	-33%
<b>Rx Drug Spending</b>	\$2,704	\$2,324	-14%
<b>Emergency Room</b>			
Visits	1.3	1.2	-11%
Spending	\$244	\$216	-11%
<b>Inpatient</b>			
Admissions	0.25	0.19	-25%
Length of stay	1.1	0.8	-26%
Spending	\$2,047	\$1,496	-27%
<b>Total Spending</b>	\$9,889	\$7,518	-24%

# HC vs Non-HC, by Setting Type

 **HIGHER** use/cost at HCs

 **LOWER** use/cost at HCs

No Significant Difference

Service	Outcome	Physician Office (PO)	Hospital Outpatient (HO)	Mixed Use (MU)
Primary Care	Use			
	Spending			
Other Outpatient	Use			
	Spending			
Prescription	Spending			
Emergency	Use			
	Spending			
Inpatient	Admits			
	LOS			
	Spending			
Total	Spending			

**Summary:**  
*The picture is less clear when compared to PO patients, where primary care spending and ED use/spending is higher among HC patients.*

# HC vs non-HC, By State

↑ HIGHER use/cost at HCs

↓ LOWER use/cost at HCs

No Significant Difference

Service	Outcome	AL	CA	CO	CT	FL	IA	IL	MS	NC	TX	VT	WV
Primary Care	Use		↓	↓	↑	↓		↑	↓	↓	↓		↓
	Spending	↓	↓	↓		↓	↓	↑	↓	↓	↑		↓
Other Outpatient	Use		↓	↓	↓	↓				↓	↓	↓	↓
	Spending	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
Prescription	Spending			↓		↓	↓	↓			↓		↓
Emergency	Use		↓			↓	↓	↑			↓		↓
	Spending		↓	↓		↓	↓						↓
Inpatient	Admits		↓		↓	↓	↓	↓	↓				
	LOS		↓		↓	↓	↓	↓					
	Spending		↓		↓	↓	↓	↓					
Total	Spending	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓

**Summary:**  
*While specific findings by service vary across states, all states had lower total spending for HC patients*

# Limitations

- Claims-based adjustment methods may not adequately capture some important differences between HC and non-HC patients
- Identification of HC patients in claims was challenging; our conservative approach likely undercounts HC patients
- Medicaid program costs are only a limited window into the value of the health center program (e.g. quality, access, HC program grants)

# Summary II

- HC patients had lower healthcare use and spending across all services, compared to closely matched non-HC patients
- While findings differed for some services / states / comparison settings, HC patients had lower total spending in all analyses
- Findings should be viewed in context of other HC studies that have found similar or better quality of care in HCs
- Coupling of HC program growth with Medicaid expansion, may have been a beneficial approach toward accommodating Medicaid expansions in a cost-conscious manner

# Thank You!

- Elbert Huang

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- Robert Nocon

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# Appendix: Standard Bias; HC vs non-HC

		Unmatched	Matched
<b>Age</b>		0.09	0.02
<b>Sex</b>	Female	<0.01	0.01
	Male	<0.01	0.01
<b>Race</b>	White	0.04	0.09
	Hispanic/Latino	0.01	0.10
	Black	0.01	0.01
	Asian	0.02	<0.01
	Hispanic/Latino & >=1 race	0.15	0.01
	Native Hawaiian	0.02	0.01
	American Indian >1 race	<0.01	0.05
	>1 race	0.01	<0.01
	Unknown	0.03	<0.01
	<b>Medicaid eligibility group</b>	Cash, adult	0.18
Cash, disabled		0.17	<0.01
Medical need, adult		0.02	0.03
Medical need, disabled		0.02	0.01
Other, adult		0.04	0.01
Other, disabled		0.09	0.01
Poverty, adult		0.09	<0.01
Poverty, disabled		0.02	0.02

(continued)		Unmatched	Matched
<b>State</b>	California	0.25	<0.01
	Illinois	0.07	<0.01
	West Virginia	0.06	<0.01
	Florida	0.19	<0.01
	Texas	0.31	<0.01
	Colorado	0.05	<0.01
	Connecticut	0.18	<0.01
	Mississippi	0.11	<0.01
	Iowa	0.05	<0.01
	Vermont	0.02	<0.01
	North Carolina	0.09	<0.01
	Alabama	0.01	<0.01
	Montana	0.02	<0.01
<b>TANF Eligible<sup>c</sup></b>		0.07	0.03
<b>Residing in MSA<sup>d</sup></b>		0.06	0.01
<b>Eligible months</b>		0.02	0.03
<b>Minimum distance from a health center site</b>		0.48	0.01
<b>Maximum among 69 CDPS diagnosis variables<sup>e</sup></b>		0.14	0.04

# HEALTH CENTERS IN PURSUIT OF THE TRIPLE AIM

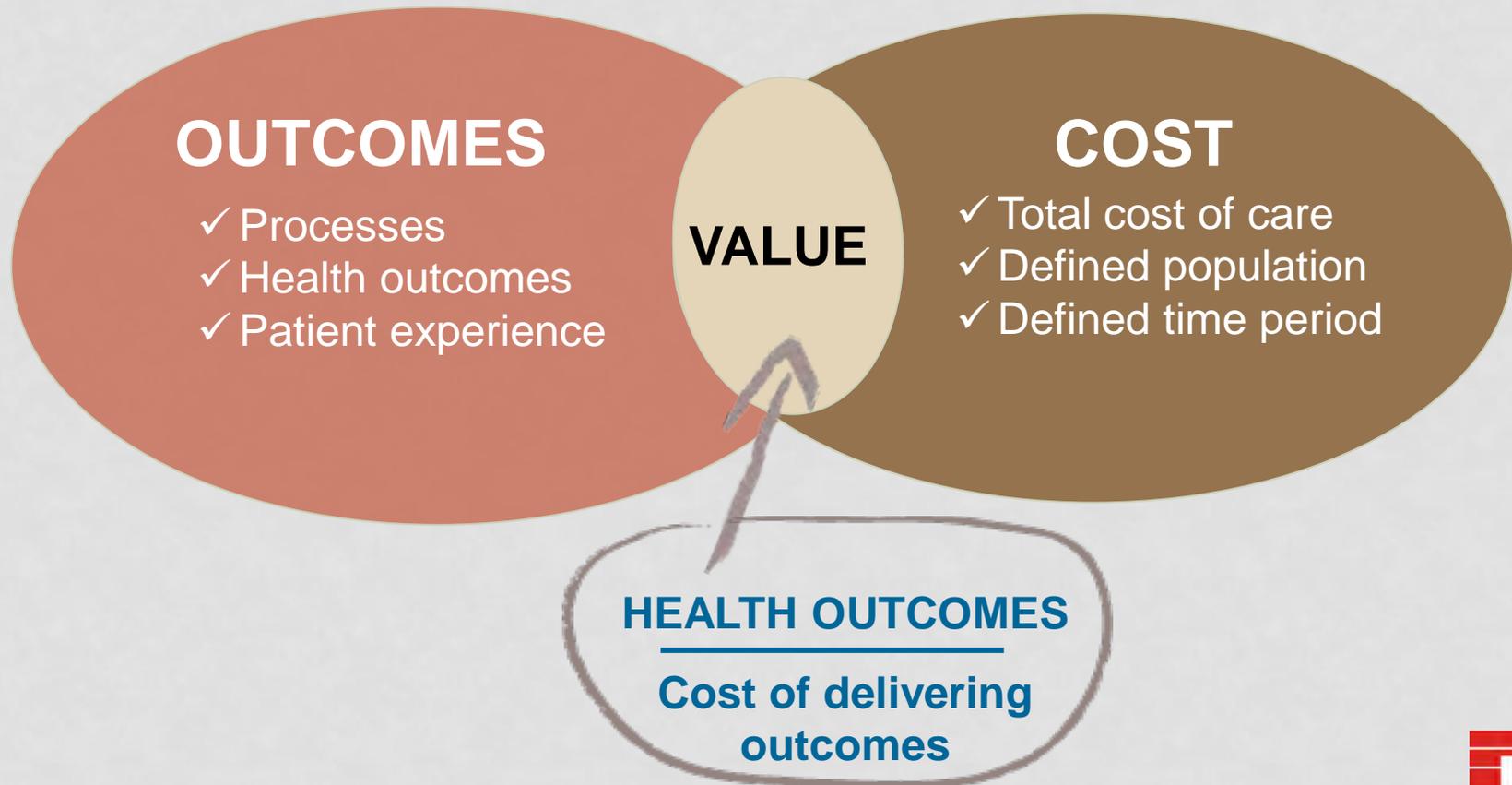
Rachel Tobey  
John Snow, Inc.

July 2015



# MOTIVATIONS FOR THE STUDY (1/2)

- What value are FQHCs bringing to the Managed care Medi-Cal program?
- Value is difficult to quantify, but total cost of care and metrics with quality and cost dimensions can be used



## MOTIVATIONS FOR THE STUDY (2/2)

- Federally Qualified Health Centers (FQHCs) need to quantify work towards The Triple Aim
  1. Improved Patient Care
  2. Improved Health
  3. Improved Total Cost of Care
- Lots of interest in starting with Total Cost and its components

# RESEARCH QUESTIONS

How do managed care Medi-Cal patients with an FQHC as their usual source of care compare to patients using other care settings on

1. **High-cost Value Metrics**
2. **Total Cost of Care (TCC)**



**CPCA**  
California Primary  
Care Association  
*Health Care Access for All*

# HIGH COST VALUE METRICS

- 1. Hospital admissions, inpatient bed days & stays**
  - a. Multi-day, non-pregnancy, non-substance abuse and non-mental health admissions
- 2. 30-day hospital readmissions**
- 3. Emergency Department visits**

*Each of these metrics has cost and quality dimensions*

*For the analysis, each metric was reported per 12,000 member months*

# TOTAL COST OF CARE

- Includes all payments made on behalf of a defined group of individual Medi-Cal members
- Excludes dental and carved-out services (ex. specialty MH)
- Accounted for site-specific, time-period specific PPS payments
  - Health plan only had data on part of PPS payment
  - Analytic gymnastics: Inserted PPS rate for all FQHC qualifying outpatient visits and removed primary care capitation payments to FQHCs

# JSI STUDY METHODOLOGY(1/2)

- Conducted claims-based analysis of total cost of care and associated utilization metrics
- Data from Partnership Health Plan (Oct 2009 – Sept 2011)
  - Most like the future policy environment
  - Already had Seniors and Persons with Disabilities (now all plans do)
  - Paid non-FQHC providers higher than average PC rates (like “the ACA bump”)
- Patients assigned to a provider group based on historical utilization pattern (Gurewich et. al methodology for usual source of care)
  - Goal to test “effect” of a threshold amount of contact with an FQHC
  - 2 visits in 2 year study period and 75% of visits at an FQHC provider
  - Another valid analysis would be to look at results by capitated provider

# JSI STUDY METHODOLOGY (2/2)

- Compared utilizers: FQHC patients to non-FQHC patients
  - The “policy” question was focused on dichotomous groups
- Unadjusted and adjusted outcomes analyzed
  - Adjustment based on age, sex, disability status, and months of enrollment
- Adult & pediatric populations analyzed separately
  - Focus on adults

# STUDY COHORT FROM PARTNERSHIP HEALTH PLAN

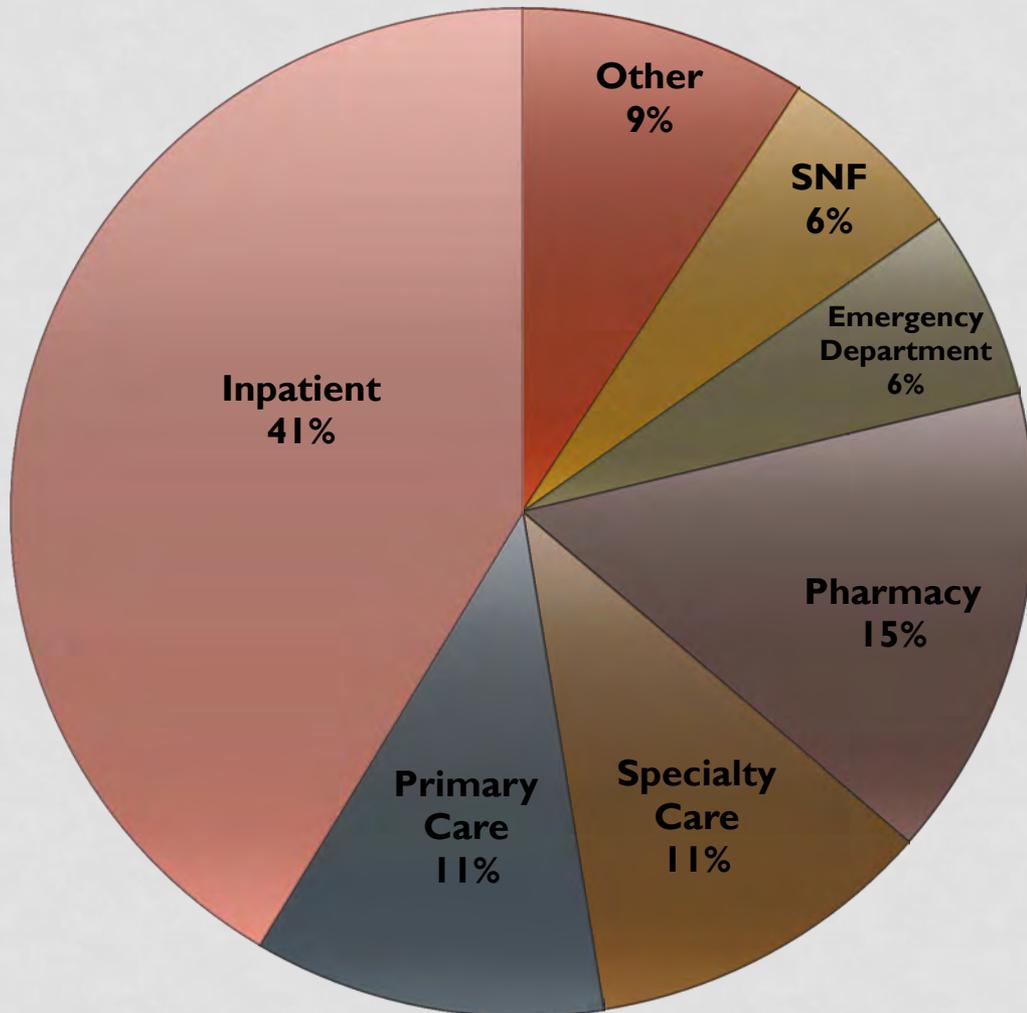
Starting population from Health Plan:  
261,978

Inclusion Criteria	Total Included	Total Excluded
1. A member of the managed care Medi-Cal health plan	261,978	0
2. 6 months of continuous enrollment	168,959	93,019
3. Not in Medicare	137,486	31,473
4. Not over 65 years of age	134,797	2,689

Final Study Population  
134,797



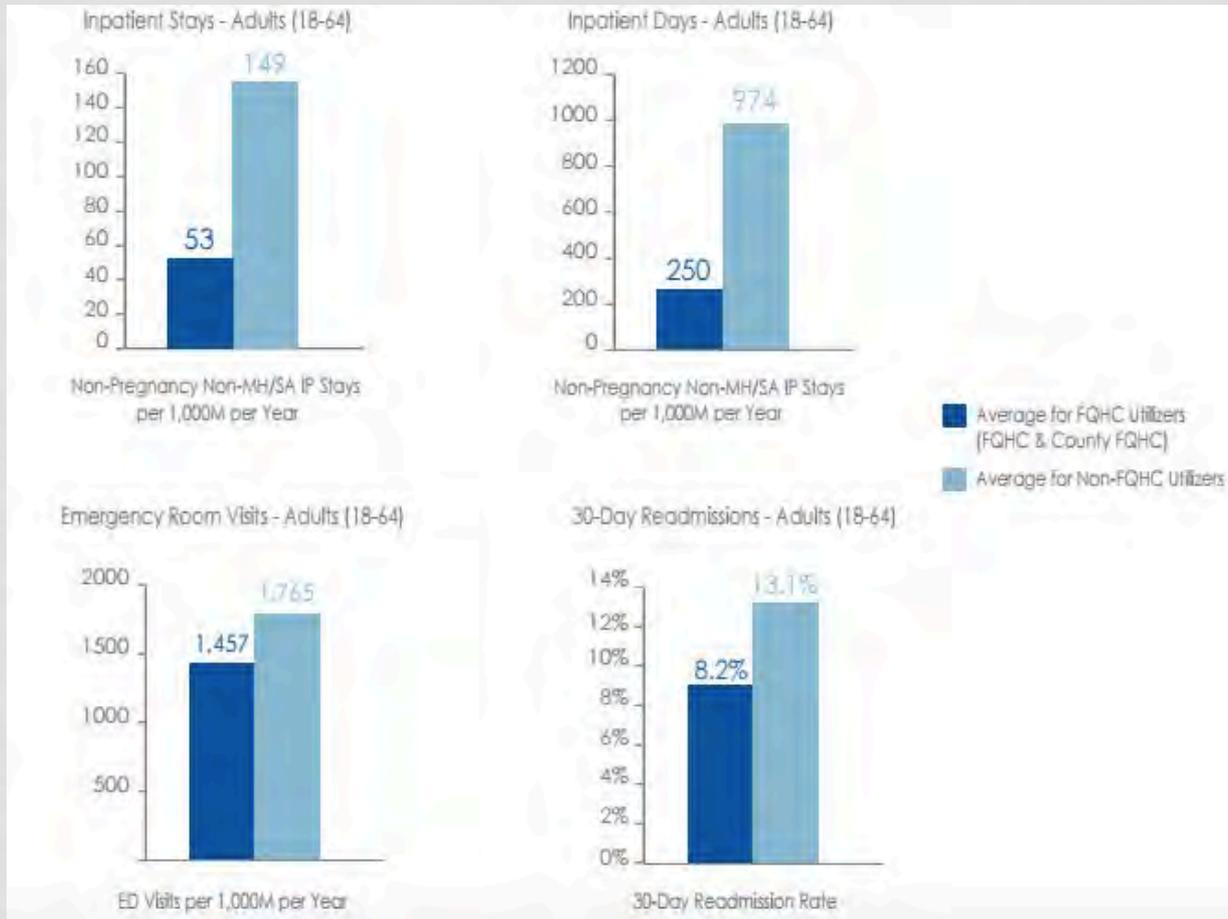
# TOTAL COST OF CARE (TCC) BY CATEGORY



Inpatient, Emergency Department, and Skilled Nursing Facility (SNF) Care accounts for **53% of total cost**

Primary Care contributes **11% of total cost**

# RESULTS: UNADJUSTED UTILIZATION



## FQHC patients:

- 64% lower inpatient stays
- 74% lower inpatient days
- 17% lower ED visits
- 5% lower rate of 30 day readmission

# RESULTS: ADJUSTED UTILIZATION

Adjusted utilization results (controlling for disability status, age, gender, and months of enrollment) showed statistically significant differences between Adult (ages 18-64) FQHC and non-FQHC patients.

	Measure	Odds Ratio (*indicates p < 0.05)	Interpretation
<i>Reference Group: All FQHCs</i>			
	Inpatient Stays, excluding pregnancy & MH/SA	1.99*	Compared to FQHC patients, non-FQHC patients have roughly twice the odds of experiencing a non-pregnancy, non-mental health, non-substance abuse inpatient stay at a statistically significant level.
Non-FQHCs	Readmission within 30-days	2.62*	Compared to FQHC patients, non-FQHC patients have more than twice the odds of experiencing a readmission within 30 days at a statistically significant level.
	Emergency Department Visit	1.27*	Compared to FQHC patients, non-FQHC patients have a 1.27 times statistically greater odds of experiencing an ED visit.
<small>Method: logistic regression, controlling for age, sex, duration of enrollment (member months), and Medi-Cal disability status. Disabled included any member with aid codes of disabled, CCS, and/or BCCPT, Non-FQHC includes outpatient hospital, other primary care providers, specialty care providers, mixed sources of care, and no usual source of care.</small>			

# RESULTS: TOTAL COST OF CARE



- Unadjusted per-member-per-month (PMPM) total costs were **37% lower** for FQHC adults compared to non-FQHC adults
- Adjusted analysis shows **19% lower costs** for FQHC adults compared to non-FQHC
- Outpatient costs (primary care + specialty costs) = 22 -24% of total costs

# IMPLICATIONS AND LIMITATIONS

- **FQHCs are demonstrating value based on this subset of providers**
- **Total costs tend to be skewed by inpatient costs**
  - Inpatient costs driven by volume of inpatient service and hospital contracted rates
  - FQHCs can influence the volume; health plans negotiate varied rates
- **Primary care costs for FQHCs and non-FQHCs are not “apples to apples”**
  - Med-Cal reimbursement is not cost but FQHC rates are rooted in costs
  - FQHCs’ rates account for provision of valuable additional services to patients

# FUTURE RESEARCH AND IMPLICATIONS?

- As seniors and persons with disabilities (SPD) enter managed care, future opportunities exist for studying differentials in inpatient utilization in high-risk population
- How to adjust for differences in social determinants of health not measured in current data
- Data is currently messy and analysis is resource intensive →
  - how to streamline data capture and analysis
  - Timely data needed to manage patients
  - Timely and cost efficient analyses needed to continue to study value and as part of risk-based contracts

# QUESTIONS OR FEEDBACK?

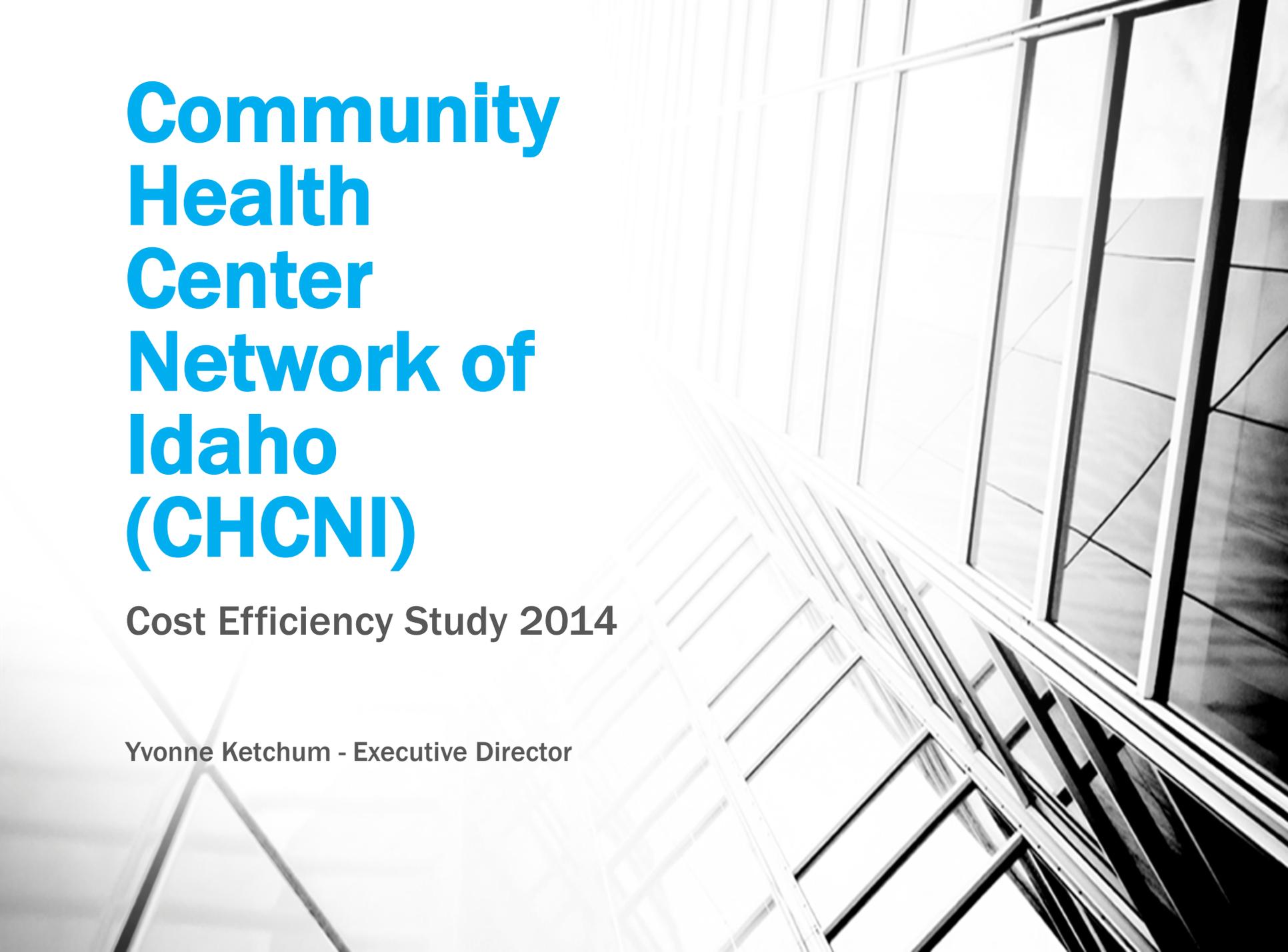
## Contact:

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# **Community Health Center Network of Idaho (CHCNI)**

**Cost Efficiency Study 2014**

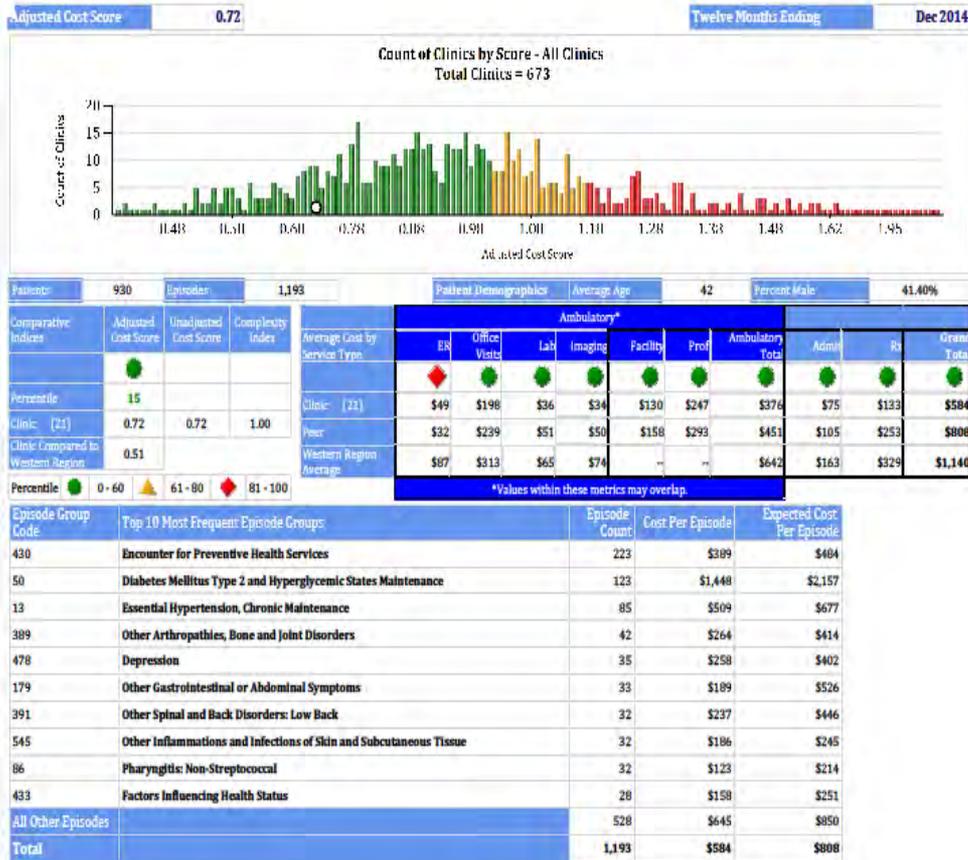
**Yvonne Ketchum - Executive Director**

# Large Commercial Payer Analysis of Cost of Care

- Study attributes members to provider based on patterns of care. Primary Care is attributed based on the most recent E&M visit.
- Provider is assigned all episodes of care associated with attributed members
- Providers are compared to their peers (like specialties) both at the state and regional level
- Data is aggregated for all FQHCs at the network CHCNI level
- FQHCs are 21% more cost efficient compared to peers even when paid the same or greater amount Fee for Service
- More efficient providers will get paid 20% higher Fee For Service than less efficient providers

# Each Clinic Receives their Individual Score Card for their Assigned Episodes

## Clinic Score Card - Commercial



## Aggregate Data for All FQHCs who are Members of CHCNI

<b>Cost Efficiency FQHCs in Idaho 2014</b>			
<b>Aggregate Comparative Indices</b>			
Overall Adjusted Cost Score		0.79	
Overall Patient Complexity		1	
Overall Unadjusted Cost Score		0.79	
Overall Adjusted Cost Score vs. Western Region		0.57	
Total Number of Providers		130	
<b>Clinic Name Supplied by CHCNI</b>	<b>Episode Count</b>	<b>Adjusted Cost Score</b>	
Clinic 1	286	0.75	
Clinic 2	353	0.79	
Clinic 3	311	0.82	
Clinic 4	340	0.61	
Clinic 5	1081	0.79	
Clinic 6	529	0.91	
Clinic 7	314	1.06	
Clinic 8	1758	0.76	
Clinic 9	2,077	0.81	
Clinic 10	1356	0.79	
Clinic 11	1,193	0.72	
Clinic 12	312	0.9	
Totals	9,910	0.79	

Aggregate Top 25 Most Frequent Episode Groups	Episode Group Code	Episode Count	Cost Per Episode	Expected Cost Per Episode	
Encounter for Preventive Health Services		430	1604	\$426.00	\$495.00
Essential Hypertension, Chronic Maintenance		13	715	\$593.00	\$708.00
Diabetes Mellitus Type 2 & Unspec Type Maintenance		50	525	\$1,683.00	\$2,211.00
Other Arthropathies, Bone and Joint Disorders		389	412	\$309.00	\$428.00
Sinusitis		88	326	\$194.00	\$214.00
Rhino, Adeno, and Corona Virus Infections		519	318	\$170.00	\$223.00
Other Ear, Nose, and Throat Disorders		90	294	\$192.00	\$205.00
Other Ear, Nose, and Throat Infections		91	293	\$143.00	\$168.00
Oth Inflam and Infect of Skin and Subcutaneous Tissue		545	229	\$214.00	\$246.00
Other Gastrointestinal or Abdominal Symptoms		179	224	\$346.00	\$534.00
Lipid Abnormalities		561	214	\$410.00	\$527.00
Other Spinal and Back Disorders, Low Back		391	213	\$400.00	\$458.00
Pharyngitis, Non-Streptococcal		86	206	\$167.00	\$218.00
Depression		478	198	\$321.00	\$418.00
Hypothyroidism		55	198	\$349.00	\$466.00
Urinary Tract Infections		189	180	\$273.00	\$617.00
Asthma, Chronic Maintenance		496	143	\$1,016.00	\$1,058.00
Infections of Skin and Subcutaneous Tissue		535	137	\$239.00	\$349.00
Headache		402	127	\$470.00	\$558.00
Otitis Media		85	109	\$307.00	\$217.00
Other Disorders of Female Genital System		230	109	\$363.00	\$515.00
Other Urinary Symptoms		193	100	\$185.00	\$228.00
Generalized Anxiety Disorder		489	94	\$208.00	\$311.00
Factors Influencing Health Status		433	90	\$216.00	\$253.00
Pharyngitis, Streptococcal		87	85	\$180.00	\$206.00
All Other Episodes			2767	\$960.00	\$1,234.00
<b>Total</b>			<b>9,910</b>	<b>\$594.00</b>	<b>\$753.00</b>
				\$5,886,540.00	\$7,462,230.00
				Savings	\$1,575,690.00
					21%

# Next Steps

- Continue to monitor reports for cost efficiency opportunities
- Commercial payers moving from Fee for Service to Pay for Value
- CHCNI is set up to succeed in efficiency of care reimbursement

**Contact Information –  
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Community Health Center Network of Idaho**

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# Conclusion - Additional Resources

- NACHC's Cost Effectiveness Research:  
<http://www.nachc.com/Health%20Center%20Quality%20of%20Care.cfm>
- NACHC's Annotated Bibliography of Cost Effectiveness Research on Health Centers  
[http://www.nachc.com/client/documents/HC\\_Cost\\_Effectiveness\\_1014.pdf](http://www.nachc.com/client/documents/HC_Cost_Effectiveness_1014.pdf)
- Capital Link's Community Health Center Financial Perspectives:  
[http://caplink.org/resources/reports#%E2%80%9DCommunity\\_Health\\_Center\\_Financial\\_Perspectives%E2%80%9D](http://caplink.org/resources/reports#%E2%80%9DCommunity_Health_Center_Financial_Perspectives%E2%80%9D)

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# Q&A